

JONES & BEACH ENGINEERS INC.

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April 10, 2022

Rochester Planning Board
Attn. Nel Sylvian
31 Wakefield Street
Rochester, NH 03867

RE: Response Letter
19 Old Gonic Road, Rochester, NH
Tax Map 131, Lot 1
JBE Project No. 21090

Dear Mr. Sylvian,

We are in receipt of comments from Renee Bourdeau, P.E. and Emma Williamson EIT of Geosyntec dated March 10, 2022 and received on March 24, 2022. We have answered as many of the comments as we could, but we have undertaken a large revision to the plan set. Upon reviewing the amount of disturbance and the amount of material to be removed from the site, it was decided to redesign the layout.

The internal loop that was previously located on the highest point of the property has been eliminated. The units located in that area have been re-positioned around the larger loop road. With this change, we removed 4 units and a large amount of impervious surface. We have also redesigned the sewer and grading. The back of some of the units on the main loop will be walkout units from the upper floor, utilizing the back of the garage as a retaining wall.

This change reduces the ledge removal on the site as well as the total disturbance. This will also leave the land behind units on the main loop as woods for greater privacy. The slope on the back of the units is shown as 2:1 slope but may be steeper depending on how the ledge face can be established and the quality of the rock. We have also reduced the impervious coverage by approximately 17,000 SF and the disturbed area by 1.3 acres based on this redesign.

NARRATIVE STORMWATER MANAGEMENT REPORT:

1. *New Comment: The SWPPP should be provided to the city prior to the preconstruction meeting. No further response from the Applicant is required.*
2. *New Comment: The SWPPP should be provided to the city prior to the preconstruction meeting.*

RESPONSE: The SWPPP will be provided prior to the pre-con meeting.

3. *New Comment: No further response is needed from the applicant.*

4. *New comment: No further response is needed from the applicant*
5. *New comment: No further response is needed from the applicant*
6. *New comment: § 218-8.B(1)(g)(i) requires a description of the procedures to limit and/or optimize use of deicing materials and minimize off-site increase in chloride levels in adjacent surface and groundwater, regardless if it is in a chloride impaired area. This information should be included in the Narrative Stormwater Management and Erosion Control Report.*
RESPONSE: The use of deicing materials will be no different here than from any City owned street. This site will be private, but not treated differently due to safety of the residents and insurance reasons. We do have stormwater treatment downstream of the road network.
7. *New comment: The SWPPP should be provided to the city prior to the preconstruction meeting*
RESPONSE: The SWPPP is will be provided prior to the pre-con meeting.
8. *New comment: Copies of pertinent state permits should be provided to the city prior to the preconstruction meeting*
RESPONSE: Copies of the State Permits will be provided once received.

SITE DEVELOPMENT PLAN REQUIREMENTS:

1. *New comment: No further response is needed from the applicant*
2. *New comment: No further response is needed from the applicant*
3. *New comment: No further response is needed from the applicant*
4. *New comment: No further response is needed from the applicant*
5. *New comment: No further response from the applicant is needed regarding the locations of earth stockpiles, perimeter controls, construction sites entrances, stone check dams, and other erosion controls. The temporary sediment basin locations should be provided in the SWPPP and provided to the city prior to the preconstruction meeting.*
RESPONSE: Temporary sediment basins will be added to the SWPPP plans.
6. *New comment: The SWPPP should be provided to the city prior to the preconstruction meeting.*
RESPONSE: The SWPPP will be provided prior to the pre-con meeting.
7. *New comment: The SWPPP should be provided to the city prior to the preconstruction meeting.*
RESPONSE: The SWPPP will be provided prior to the pre-con meeting.
8. *New comment: The SWPPP should be provided to the city prior to the preconstruction meeting.*
RESPONSE: The SWPPP will be provided prior to the pre-con meeting.

TEMPORARY CONSTRUCTION STORMWATER DESIGN STANDARDS:

1. *New comment: No further response is needed from applicant.*
2. *New comment: The SWPPP should be provided to the city prior to the preconstruction meeting.*

RESPONSE: The SWPPP will be provided prior to the pre-con meeting.

POST-CONSTRUCTION STORMWATER MANAGEMENT STANDARDS:

1. *New comment: The Applicant has provided a waiver request from § 218-10 C(2), which are the groundwater recharge requirements. The Applicant has not requested a waiver from the site runoff volume requirements in § 218-10 C(3). If the Applicant is requesting a waiver from this section, the waiver request should be amended. Additionally, as stated in § 218-10 C(3)(c), "if an increase in post-development peak rate or volume is anticipated due to site constraints that limit the ability to implement LID measures, the applicant shall demonstrate that the project will not cause adverse impacts to downstream properties, infrastructure, aquatic habitat or water quality degradation in downstream water bodies."*

The Applicant currently makes a statement in only the waiver request as to the site constraints that limit the ability to meet the requirement. However, the Applicant has not demonstrated with supporting calculations to that the project will not cause adverse impacts to downstream properties, infrastructure, aquatic habitat or water quality degradation in downstream water bodies.

The Applicant should provide the calculations and supporting information before the Planning Board approves a Waiver Request

RESPONSE: Due to the size of the re-design and change to the site plan, we do not have a completed Drainage Analysis yet. We will have this in the next couple of weeks and will be submit that along with this amended waiver. It is typical that we cannot infiltrate into soils with HSG C or D, due to their saturation rate. That is the reason that NHDES Alteration of Terrain Bureau routinely waives these requirements when the soils are similar to the ones we have onsite.

2. *New comment: No further response is needed from applicant.*
3. *New comment: The SWPPP should be provided to the city prior to the preconstruction meeting.*

RESPONSE: The SWPPP will be provided prior to the pre-con meeting.

STORMWATER MANAGEMENT DESIGN STANDARDS FOR NEW DEVELOPMENT:

1. *New comment: The Applicant must demonstrate that the BMPs selected will achieve 50% removal of both total phosphorus and total nitrogen. The Applicant selected wet ponds. Wet ponds are only capable of removing 40% nitrogen load if designed treat 2-inches of runoff (Figure 3-18, Appendix F of MS4 Permit). The Applicant provided calculations for 0.90 inches of runoff which is sufficient for total phosphorus load. The Applicant should select a range of BMPs that are capable of achieving a 50% reduction in nitrogen*

RESPONSE: This will be addressed in the amended Drainage Analysis.

2. *New comment: The Applicant has not provided a summary table indicating the total required Water Quality Volume for the site and how the proposed practices meet the proposed total volume. The Applicant should also distinguish between Analysis Points. The Applicant should provide a summary table in the Drainage Report to allow the city to easily review this information*

RESPONSE: This will be addressed in the amended Drainage Analysis.

3. *New comment: The Applicant has provided a waiver request from this section and indicates "we are unable to reduce the volume of stormwater to meet the level in pre-existing conditions". The Applicant has not included calculations demonstrating what the required Groundwater Recharge Volume is for the soil type on site and how much recharge to groundwater the Applicant is providing (if any). Further, in accordance with § 218-10.C(2)(b), if infiltration potential is limited or not practical, the Applicant must demonstrate that the stormwater volume from the site will not cause adverse impacts to downstream properties, infrastructure, aquatic habitat, or water quality degradation in downstream water bodies. The Applicant currently makes a statement that there would not be adverse impacts; however, there are no supporting calculations to demonstrate how this conclusion was made.*

RESPONSE: This will be addressed in the amended Drainage Analysis.

4. *New comment: See response to comment IV.1 above. The Applicant has provided a waiver request from § 218-10 C(2), which are the groundwater recharge requirements. The Applicant has not requested a waiver from the site runoff volume requirements in § 218-10 C(3). If the Applicant is requesting a waiver from this section, the waiver request should be amended.*

Additionally, as stated in § 218-10 C(3)(c), "if an increase in post-development peak rate or volume is anticipated due to site constraints that limit the ability to implement LID measures, the applicant shall demonstrate that the project will not cause adverse impacts to downstream properties, infrastructure, aquatic habitat or water quality degradation in downstream water bodies."

The Applicant currently makes a statement in only the waiver request as to the site constraints that limit the ability to meet the requirement. However, the Applicant has not demonstrated with supporting calculations to that the project will not cause adverse impacts to downstream properties, infrastructure, aquatic habitat or water quality degradation in downstream water bodies.

The Applicant should provide the calculations and supporting information before the Planning Board approves a Waiver Request.

RESPONSE: This will be addressed in the amended Drainage Analysis.

STORMWATER DRAINAGE SYSTEM SPECIFICATIONS:

1. *New comment: No further response is needed from the applicant.*
2. *New comment: Similar to comment IV.1 above, the Applicant has not demonstrated that the volume discharged from the site from the proposed wet ponds during the 25-year storm will not cause adverse off-site impacts.*

RESPONSE: This will be addressed in the amended Drainage Analysis.

3. *New comment: Based on the information provided, multiple drainpipes from the catch basins have velocities greater than 2 feet per second*

RESPONSE: This will be addressed in the amended Drainage Analysis.

4. *New comment: The Applicant should summarize the required velocities in a summary table or in a table on the detail sheet. The velocities entering the proposed swales are not provided within the Drainage Report, based on how the swales were modeled. The swales should be modeled as reaches. The maximum velocities within the swales modeled within the subcatchments all exceed 1 foot per second.*

RESPONSE: This will be addressed in the amended Drainage Analysis.

POST- CONSTRUCTION INSPECTION MAINTENANCE AGREEMENT:

1. *The Inspection and Maintenance Plan should include the following:*

- a. *New comment: The Inspection and Maintenance Plan is applicable to the stormwater management features at the property. Based on the response from the Applicant, can additional information be provided how the rental unit occupants are supposed to know how to maintain the stormwater management features and provide sufficient funding for these features. This does not seem like a long-term Inspection and Maintenance Plan that will be successful. The Owner of the property should hold this responsibility. The Applicant should provide clarification.*

RESPONSE: This will be addressed in the amended Drainage Analysis.

- b. *New comment: No further response is needed from the applicant.*

- c. *New comment: No further response is needed from the applicant.*

- d. *New comment: The Inspection and Maintenance report should require that documentation be provided (e.g., photos) of any required maintenance. The I&M document should include a map of all BMPs with a numbering system (e.g., CB1, CB2, Wet Pond 1, Wet Pond 2, etc.) for clarity.*

RESPONSE: This will be addressed in the amended Drainage Analysis.

- e. *New comment: No further response is needed from the applicant.*

- f. *New comment: The sample deicing log was not included in the I&M document*

RESPONSE: This will be addressed in the amended Drainage Analysis.

- g. *New comment: No further response is needed from the applicant.*

- h. *New comment: No further response is needed from the applicant.*

OTHER COMMENTS:

1. *New comment: No further response is needed from the applicant.*

2. *New comment: As currently designed the wet ponds have a 4-foot permanent pool. Wet ponds are typically considered unsuitable for residential areas due to the safety risk when they do not have a fence surrounding them. Based on review of the plans, it does not appear that any fencing is proposed around the ponds. A 10-foot safety bench is recommended around wet ponds. Currently the design does not incorporate a safety bench on the wet ponds.*

RESPONSE: We will incorporate the bench and a fence if necessary. We typically find that fence becomes a maintenance headache, doesn't prevent access to most children and we aren't fencing the entire river bank area that they would also have access to. Therefore, we would prefer to not fence these ponds, but leave it up to the City to decide.

3. *No further response is needed from the applicant.*
4. *New comment: No further response is needed from the applicant.*
5. *New comment: No further response is needed from the applicant.*
6. *New comment: The hood is shown on the Catch Basin Detail drawing; however, the treatment rates provided by the catch basins are not included in the Drainage Report.*
RESPONSE: This will be addressed in the amended Drainage Analysis.
7. *New comment: No further response is needed from the applicant.*
8. *New comment: No further response is needed from the applicant.*
9. *New comment: No further response is needed from the applicant.*
10. *New comment: No further response is needed from the applicant.*

11. *The following comments are specific to the HydroCAD Report and Watershed Plans:*

- a. *New comment: No further response is needed from the applicant.*
- b. *New comment: The Applicant has not provided a summary table for the volume for each of the storm events. This information should be summarized in the Drainage Report, in the executive summary so the city can easily make this determination.*
RESPONSE: This will be addressed in the amended Drainage Analysis.
- c. *New comment: No further response is needed from the applicant.*
- d. *The height of the vertical grate/orifice opening on the outlet structure for Wet Pond 1 in the HydroCAD model says 10"; however, the detail table shows a change in elevation equal to over 13". The Applicant should reconcile these values.*
RESPONSE: This will be addressed in the amended Drainage Analysis.
- e. *The applicant has requested to provide the following information in the SWPPP prior to the preconstruction meeting as an alternative to providing the information in the*

application and response letter. The Planning Board should include this information as a condition if the application is approved.

- i. Anticipated project start and completion dates, and duration of grading and construction activities.*
- ii. Documentation on what LID site planning and design strategies were used on-site or why using LID strategies are not feasible, as required under § 218-8.B(1)(d)*
- iii. Description of the procedures to control waste, such as discarded building materials, construction debris, sanitary waste, concrete washout, chemicals, and litter.*
- iv. Locations of temporary sediment basins*
- v. Locations of equipment storage and staging areas and control procedures*
- vi. Locations of vehicles fueling areas or equipment fueling areas and control procedures*
- vii. Location of disposal facilities for solid waste, construction debris, sanitary waste, concrete washout, and plan for stump disposal and control procedures.*
- viii. Location and description of proposed deicing material storage areas.*

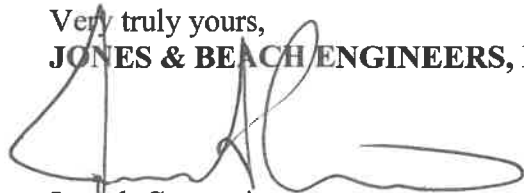
RESPONSE: This will be addressed in the amended Drainage Analysis.

Included with this response letter are the following:

- 1. Three (3) Full Size Plan Sets.
- 2. Sixteen (16) 11x17 Plan Sets (Folded).
- 3. Stephen Pernaw's Response to Sebago Technic's Memorandum
- 4. Jones and Beach Engineer Response to Sebago Technic's Memorandum

Thank you very much for your time.

Very truly yours,
JONES & BEACH ENGINEERS, INC.



Joseph Coronati
 Vice President

cc: Green & Company (via email)
 John O'Neil (via email)
 Derek Caldwell, PE (via email)
 Renee Bourdeau, PE (via email)

VIA EMAIL

March 10, 2022

Dana Webber
Assistant City Engineer
City of Rochester
45 Old Dover Road
Rochester, NH 03867-3445

Subject: Second Letter for Third Party Peer Review of Old Gonic Road Townhouses at 19 Old Gonic Road

Dear Dana:

As requested by the City of Rochester (City), Geosyntec Consultants, Inc. (Geosyntec) has reviewed the letter from Jones & Beach Engineers, Inc., the Applicant's engineer, dated February 15, 2022, in response to Geosyntec's first peer review letter for 19 Old Gonic Road in Rochester, New Hampshire (Site). Geosyntec has reviewed the following additional documents, prepared by Jones & Beach Engineers, Inc., in preparation of this second letter:

- Response Letter for 19 Old Gonic Road dated February 15, 2022 (8 pages)
- Waiver Request for Bayberry Common, Dated February 15, 2022 (1 page)
- Drainage Analysis, Sediment and Erosion Control Plan, Old Gonic Road Townhouses, dated November 23, 2021, revised February 15, 2022 (131 pages, including appendices)
- Memorandum Re: Old Gonic Road Sewer Capacity, prepared by Weston & Sampson, dated February 11, 2022 (3 pages)
- Proposed Site Plan, Old Gonic Road Townhouses, Tax Map 131, Lot 10, 19 Old Gonic Road, Rochester, NH, dated November 23, 2021, revised February 14, 2022 (47 sheets)

Based on the review of the above documents and the requirements outlined in Chapter 218, Geosyntec has the following comments for the Applicant. The normal text is Geosyntec's initial review comments, the *italicized* text is Jones & Beach Engineers' response, and the **bold** text is Geosyntec's response to Jones & Beach Engineers response.

I. Narrative Stormwater Management and Erosion Control Report

The Drainage Analysis Report provided was reviewed to ensure compliance with the Stormwater Management and Erosion Control Report (Report) requirements in § 218-8.B(1). The following comments should be addressed by the Applicant.

1. Anticipated project start and completion dates, and duration of grading and construction activities are not provided.

Applicant Response: This section 218-8 B of the Stormwater Management & Erosion Control allows for sites that require SWPPPs to have the SMECP requirements added into that document. We would like to request that we do this for this development. This information will be provided as part of EPA SWPPP documents as they will outline all of this information. The total length of construction will depend on market conditions and phasing.

The SWPPP should be provided to the city prior to the preconstruction meeting. No further response from the Applicant required.

2. Documentation on what LID site planning and design strategies were used on-site or why using LID strategies are not feasible, as required under § 218-8.B(1)(d) is not provided.

Applicant Response: This section 218-8 B of the Stormwater Management & Erosion Control allows for sites that require SWPPPs to have the SMECP requirements added into that document. We would like to request that we do this for this development. We are utilizing wet ponds, swales, sediment forebays, catch basins with sumps and hoods and curbing.

The SWPPP should be provided to the city prior to the preconstruction meeting.

3. Description of the proposed changes in impervious cover is not provided. However, the proposed impervious cover is included in the HydroCAD outputs.

Applicant Response: The total amount of impervious cover in existing and proposed conditions is listed in the drainage report as requested.

No further response is needed from the applicant.

4. Description of the calculations to demonstrate how the proposed project meets construction site erosion control standards are not provided.

Applicant Response: Rip rap sizing calculations have been provided in the drainage report. Sediment forebay sizing information is part of the Alteration of Terrain Permit application along with the BMP worksheets.

No further response is needed from the applicant.

5. Description of the calculations to demonstrate how the proposed project meets post-construction stormwater management design standards are not provided.

Applicant Response: The Drainage Analysis and plan set provide the information to see that the stormwater management standards have been met.

No further response is needed from the applicant.

6. Description of the procedures to limit and/or optimize use of deicing materials and minimize off-site increases in chloride levels in adjacent surface and groundwater is not provided.

Applicant Response: This site is not located in a Chloride Impaired area and typically NHDES AOT does not require salt minimization plans for these sites. All of our stormwater treatment is downstream of the road network and the stormwater gets treated per AOT regulations prior to release.

§ 218-8.B(1)(g)(i)) requires a description of the procedures to limit and/or optimize use of deicing materials and minimize off-site increase in chloride levels in adjacent surface and groundwater, regardless if it is in a chloride impaired area. This information should be included in the Narrative Stormwater Management and Erosion Control Report.

7. Description of the procedures to control waste such as discarded building materials, construction debris, sanitary waste, concrete washout, chemicals, litter are not provided, with the exception of Site Notes #9 on drawing no. OVR5, which states that trash is to be handled with totes at each unit.

Applicant Response: The above will be addressed in the SWPPP Plan will be provided by the contractor prior to construction.

The SWPPP should be provided to the city prior to the preconstruction meeting.

8. Copies of pertinent state permits (AoT and wetlands), if applicable, are not provided.

Applicant Response: Copies of State permits will be provided when received.

Copies of pertinent state permits should be provided to the city prior to the preconstruction meeting.

II. Site Development Plan Requirements

The design was reviewed to ensure compliance with the requirements in § 218-8.B. The following comments should be addressed by the Applicant.

1. Drainage patterns and direction of flow of stormwater runoff using arrows 200-feet outside of the project boundary were not provided for the existing or proposed conditions on the site plans or watershed plans.

Applicant Response: We did not see this requirement in the site plan regulations, but we have added flow arrows on the watershed plans.

No further response from the applicant is needed.

2. The type of existing vegetation (including invasive species) is not shown (tree lines, trees and bushes, and wetland delineations are shown).

Applicant Response: The types of vegetation are called out on the plans; the woods are mixed growth and we have not found any invasive species to date.

No further response from the applicant is needed.

3. A limit of earth disturbance is not shown on the site plans.

Applicant Response: The limit of the earth disturbance is now shown on plan OVRG.

No further response from the applicant is needed.

4. A cut and fill plan is not provided.

Applicant Response: A plan has been added at the end of the set to show the areas of cut and fill.

No further response from the applicant is needed.

5. An Erosion and Sediment Control Plan is not provided to show the locations of earth stockpiles, perimeter controls, construction site entrances, temporary sediment basin, stone check dam, temporary culvert inlet protection check dam and any other erosion controls specified.

Applicant Response: All of this information is located on plans C9-C11 except temporary sediment basins. Those locations are determined by the site contractor and inspected as part of the SWPPP, and this site will have an Environmental Monitor as required by AOT as well.

No further response from the applicant is needed regarding the locations of earth stockpiles, perimeters controls, construction sites entrances, stone check dams, and other erosion controls.

The temporary sediment basin locations should be provided in the SWPPP and provided to the city prior to the preconstruction meeting.

6. Location of equipment storage and staging areas are not shown. Procedures should be added to the Drainage Analysis Report to reflect the added controls.

Applicant Response: The above will be addressed in the SWPPP Plan will be provided by the contractor prior to construction.

The SWPPP should be provided to the city prior to the preconstruction meeting.

7. Location of vehicle fueling areas or equipment fueling areas are not shown. Procedures should be added to the Drainage Analysis Report to reflect the added controls.

Applicant Response: The above will be addressed in the SWPPP Plan will be provided by the contractor prior to construction.

The SWPPP should be provided to the city prior to the preconstruction meeting.

8. Location of disposal facilities for solid waste, construction debris, sanitary waste, concrete washout, and plan for stump disposal (if applicable) are not shown.

Applicant Response: The above will be addressed in the SWPPP Plan will be provided by the contractor prior to construction.

The SWPPP should be provided to the city prior to the preconstruction meeting.

III. Temporary Construction Stormwater Management Design Standards

The design was reviewed to ensure compliance with the requirements in § 218-9.A. The following comments should be addressed by the Applicant.

1. Stabilization notes on the site plans and within the Drainage Analysis Report should be updated to reflect the requirements under § 218-9.A(8)(a), which state that temporary stabilization measures should be in place within 5 calendar days for exposed soil areas that are within 100-feet of a surface water body or a wetland.

Applicant Response: This note has been added to our stabilization notes on Sheet E1.

No further response is needed from applicant.

2. Procedures to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste during the construction process that may cause adverse impacts to water quality are not provided.

Applicant Response: The above will be addressed in the SWPPP Plan will be provided by the contractor prior to construction.

The SWPPP should be provided to the city prior to the preconstruction meeting.

IV. Post-Construction Stormwater Management Design Standards

The design was reviewed to ensure compliance with the requirements in § 218-10. The following comments should be addressed by the Applicant.

1. Calculations are not provided that demonstrate that stormwater discharge from the proposed stormwater drainage system will not cause flooding or functional impairments to streets, adjacent properties, downstream properties, soils, or vegetation. Calculations show that the peak discharge for post-development does not exceed the pre-development discharge; however, calculations are not provided that demonstrate that the post-development runoff volume does not exceed the pre-development volume.

Applicant Response: Due to the soils onsite, infiltration of stormwater is not possible, therefore we are requesting a waiver to this requirement. We will also be requesting the

same waiver from the AOT regulations, which is typically granted when in Hydrologic Soil Group C or worse.

The Applicant has provided a waiver request from § 218-10 C(2), which are the groundwater recharge requirements. The Applicant has not requested a waiver from the site runoff volume requirements in § 218-10 C(3). If the Applicant is requesting a waiver from this section, the waiver request should be amended.

Additionally, as stated in § 218-10 C(3)(c), “if an increase in post-development peak rate or volume is anticipated due to site constraints that limit the ability to implement LID measures, the applicant shall demonstrate that the project will not cause adverse impacts to downstream properties, infrastructure, aquatic habitat or water quality degradation in downstream water bodies.”

The Applicant currently makes a statement in only the waiver request as to the site constraints that limit the ability to meet the requirement. However, the Applicant has not demonstrated with supporting calculations to that the project will not cause adverse impacts to downstream properties, infrastructure, aquatic habitat or water quality degradation in downstream water bodies.

The Applicant should provide the calculations and supporting information before the Planning Board approves a Waiver Request.

2. Provide a specific planting plan for the bioretention systems. Native plants should be proposed in a density sufficient to prevent surface erosion and to achieve water quality treatment requirements. Also, an alternative to bark or wood fiber mulch should be considered as this tends to float, does not reduce erosion at the inlet, and clogs overflow structures.

Applicant Response: The Bioretention Ponds have been removed from the plans and replaced with Wet Ponds. No plantings are proposed.

No further response is needed from applicant.

3. Proposed deicing material storage areas are not described or shown on the site plans.

Applicant Response: The above will be addressed in the SWPPP Plan will be provided by the contractor prior to construction. We do not anticipate the large storage of deicing material onsite. Typically, the plow trucks will sand and salt as they remove snow.

The SWPPP should be provided to the city prior to the preconstruction meeting.

V. Stormwater Management Design Standards for New Development

The design was reviewed to ensure compliance with the requirements in § 218-10.C. The following comments should be addressed by the Applicant.

1. Calculations are not provided to demonstrate that the total post-construction impervious area is treated to remove at least 80% total suspended solids and 50% removal of total phosphorus and total nitrogen, as required under § 218-10.C(1)(a). The Applicant should provide calculations that are consistent with the methods referenced in § 218-10.A(3)(a,b).

Applicant Response: The calculations are provided within the Drainage report.

The Applicant must demonstrate that the BMPs selected will achieve 50% removal of both total phosphorus and total nitrogen. The Applicant selected wet ponds. Wet ponds are only capable of removing 40% nitrogen load if designed to treat 2-inches of runoff (Figure 3-18, Appendix F of MS4 Permit). The Applicant provided calculations for 0.90 inches of runoff which is sufficient for total phosphorus load. The Applicant should select a range of BMPs that are capable of achieving a 50% reduction in nitrogen.

2. Calculations are not provided to demonstrate that the stormwater treatment practices have been designed for the water quality volume or water quality flow, in accordance with Env-Wq 1504.10 and Env-Wq 1504.11, respectively, as required under § 218-10.C(1)(c).

Applicant Response: BMP worksheets demonstrating these standards are being met are included within the Drainage Report.

The Applicant has not provided a summary table indicating the total required Water Quality Volume for the site and how the proposed practices meet the proposed total volume. The Applicant should also distinguish between Analysis Points. The Applicant should provide a summary table in the Drainage Report to allow the city to easily review this information.

3. Calculations are not provided to demonstrate protection of groundwater resources by reducing the post-development stormwater runoff volume by infiltrating Groundwater Recharge Volume as required under § 218-10.C(2)(a,b).

Applicant Response: Due to the soils onsite, infiltration of stormwater is not possible, therefore we are requesting a waiver to this requirement. We will also be requesting the same waiver from the AOT regulations, which is typically granted when in Hydrologic Soil Group C or worse.

The Applicant has provided a waiver request from this section and indicates “we are unable to reduce the volume of stormwater to meet the level in pre-existing conditions”. The Applicant has not included calculations demonstrating what the required Groundwater Recharge Volume is for the soil type on site and how much recharge to groundwater the Applicant is providing (if any). Further, in accordance with § 218-10.C(2)(b), if infiltration potential is limited or not practical, the Applicant must demonstrate that the stormwater volume from the site will not cause adverse impacts to downstream properties, infrastructure, aquatic habitat, or water quality degradation in downstream water bodies. The Applicant currently makes a statement that there would not be adverse impacts; however, there are no supporting calculations to demonstrate how this conclusion was made.

The Applicant should provide the calculations and supporting information before the Planning Board approves the Waiver Request.

4. Calculations are not provided to demonstrate that the post-development stormwater runoff volumes do not exceed the pre-development stormwater runoff volumes for the 2-year, 10-year, and 25-year, 24-hour design storm events, as required under § 218-10.C(3)(a).

Applicant Response: Due to the soils onsite, infiltration of stormwater is not possible, therefore we are requesting a waiver to this requirement. We will also be requesting the same waiver from the AOT regulations, which is typically granted when in Hydrologic Soil Group C or worse.

See response to comment IV.1 above.

VI. Stormwater Drainage System Specifications

The design was reviewed to ensure compliance with the requirements in § 218-10.F. The following comments should be addressed by the Applicant.

1. Calculations are not provided to demonstrate that the closed drainage system was sized for the 25-year, 24-hour storm event, as required under § 218-10.F(2)(a).

Applicant Response: The 25-year storm event is included within the calculations.

No further response is needed from the applicant.

2. Calculations are not provided for the 25-year, 24-hour storm to evaluate the potential for off-site effects, as if the project drainage flows to an existing roadway culvert or if a detention or retention area is proposed.

Applicant Response: We are proposing three separate Wet Ponds to mitigate peak discharge rates. The Drainage Report details the Wet Pond designs.

Similar to comment IV.1 above, the Applicant has not demonstrated that the volume discharged from the site from the proposed wet ponds during the 25-year storm will not cause adverse off-site impacts.

3. Calculations are not provided to demonstrate that the closed drainage network has a minimum velocity of 2 feet per second, as required under § 218-10.F(2)(d).

Applicant Response: These calculations are included within the Drainage Report.

Based on the information provided, multiple drainpipes from the catch basins have velocities greater than 2 feet per second.

4. Calculations are not provided to demonstrate that velocities entering the proposed swales are less than 10 feet per second and that the maximum velocity within the swale

is 1 foot per second during the 25-year, 24-hour storm event, as required under § 218-10.F(2)(c).

Applicant Response: These calculations are included within the Drainage Report.

The Applicant should summarize the required velocities in a summary table or in a table on the detail sheet. The velocities entering the proposed swales are not provided within the Drainage Report, based on how the swales were modeled. The swales should be modeled as reaches. The maximum velocities within the swales modeled within the subcatchments all exceed 1 foot per second.

VII. Post-Construction Inspection and Maintenance Agreement

The design was reviewed to ensure compliance with the requirements in § 218-11.C. The following comments should be addressed by the Applicant.

1. The Inspection and Maintenance Plan should include the following:

- a) The name of the responsible party for inspections and maintenance,

Applicant Response: The units are proposed as rental units and all maintenance will be the responsibility of the owners. Typically, AOT requires that projects of this side have annual maintenance inspection performed by a third-party inspector.

The Inspection and Maintenance Plan is applicable to the stormwater management features at the property. Based on the response from the Applicant, can additional information be provided how the rental unit occupants are supposed to know how to maintain the stormwater management features and provide sufficient funding for these features. This does not seem like a long-term Inspection and Maintenance Plan that will be successful. The Owner of the property should hold this responsibility. The Applicant should provide clarification.

- b) All of the proposed stormwater practices including but not limited to bioretention ponds, drip edges, riprap inlet and outlet protection, catch basins, and the closed drainage network.

Applicant Response: The I&M document discusses these best management practices.

No further response is needed from the applicant.

- c) A proposed schedule of inspection frequency,

Applicant Response: We are proposed annual inspections. A checklist is provided in the I&M manual.

No further response is needed from the applicant.

- d) A plan identifying each BMP and associated details, an inspection checklist and photo documentation requirements,

Applicant Response: A BMP plan has been added to the I&M document.

The Inspection and Maintenance report should require that documentation be provided (e.g., photos) of any required maintenance. The I&M document should include a map of all BMPs with a numbering system (e.g., CB1, CB2, Wet Pond 1, Wet Pond 2, etc.) for clarity.

- e) Sample log to document each inspection and maintenance activity,

Applicant Response: This has been added to the I&M document.

No further response is required from the applicant.

- f) Sample deicing log to track amount and type of deicing materials applied to the site,

Applicant Response: This has been added to the I&M document.

The sample deicing log was not included in the I&M document.

- g) Description of maintenance response actions, including actions to be taking if invasive species begin to grow in stormwater practices, and

Applicant Response: We have added the information provided in the Stormwater Management and Erosion Control Chapter 218 into the I&M document.

No further response is required from the applicant.

- h) Documentation of how reports will be completed, submittal and retention procedures, and contingency plans if future maintenance is required.

Applicant Response: This information is provided in the I&M document and will be handled on a case by case depending on the situation and we will make reports available upon request to the DPW.

No further response is required from the applicant.

VIII. Other Comments

1. The Grading and Drainage Plans reference “ponds”; however, the detail sheet provides a detail for bioretention. The details or Grading and Drainage Plans should identify these features with the same terminology.

Applicant Response: The previously proposed Bioretention Ponds have been revised to be Wet Ponds. The Detail Sheets have been revised with the correct construction detail and notes have been changes within the plan set.

No further response is required from the applicant.

2. Bioretention systems with an underdrain are not recommended as an appropriate stormwater practice for peak runoff control in accordance with Env-WQ 1507.06. Bioretention systems are appropriate for pollutant removal and to protect water quality. An alternative BMP should be considered for peak runoff control.

Applicant Response: The previously proposed Bioretention Ponds have been revised to be Wet Ponds. The Detail Sheets have been revised with the correct construction detail and notes have been changes within the plan set.

As currently designed the wet ponds have a 4-foot permanent pool. Wet ponds are typically considered unsuitable for residential areas due to the safety risk when they do not have a fence surrounding them. Based on review of the plans, it does not appear that any fencing is proposed around the ponds.

A 10-foot safety bench is recommended around wet ponds. Currently the design does not incorporate a safety bench on the wet ponds.

3. Proposed underdrains for the bioretention systems are not shown on the site plans.

Applicant Response: See above reply.

No further response is required from the applicant.

4. The Applicant should clearly mark existing trees to remain on the Landscape Plan on drawing no. L1 (Landscape Notes #14) or on an alternate plan.

Applicant Response: Additional wordage has been added to the note that tree shall be clearly marked prior to land clearing activities.

No further response is needed from the applicant.

5. Note #14 on drawing no. P1 states "All driveways to have culverts unless approved by the town road agent." However, culverts are not shown, nor are drainage calculations or culvert specifications provided.

Applicant Response: There are no driveway culverts proposed. This note has been removed.

No further response is required from the applicant.

6. Section 4.4 of the Drainage Analysis Sediment and Erosion Control Plan states that "Treatment is obtained through the use of deep sump hooded catch basins [...]", but does

not provide the treatment rates obtained by the catch basins. Additionally, the hood is not included on the catch basin detail on drawing no. D2.

Applicant Response: A hood has been added to the Catch Basin Detail. Treatment provided by the catch basins is included in the Drainage Report.

The hood is shown on the Catch Basin Detail drawing; however, the treatment rates provided by the catch basins are not included in the Drainage Report.

7. Snow storage areas are proposed in areas where stormwater runoff is managed (swales, inlets). This will impede the ability for stormwater to flow during rain events and cause localized flooding. Alternative locations for snow storage should be selected.

Applicant Response: We have reviewed the snow storage areas and removed any areas encroaching on inlets or swales.

No further response is needed from the applicant.

8. Details for proposed swales, including landscaping details are not provided.

Applicant Response: All swales will be grassed. A Detail has been included in the Plan Set.

No further response is needed from the applicant.

9. Outlet protection/rip-rap sizing calculations are not provided.

Applicant Response: Riprap sizing is now included in the Drainage Report.

No further response is needed from the applicant.

10. In the areas where the parking area runoff flows off of the pavement and onto vegetation prior to entering the proposed swale (near proposed buildings 103-114 and 91-102) calculations are not provided to demonstrate that the vegetation can withstand the velocities without causing erosion.

Applicant Response: A riprap apron has been added at the end of the parking lots in the areas mentioned to reduce any erosion caused by stormwater runoff.

No further response is needed from the applicant.

11. The following comments are specific to the HydroCAD Report and Watershed Plans:

- i. The complete (not summary) HydroCAD outputs should be included for the 25-year, 24-hour storm, as opposed to the 10-year, 24-hour storm which was provided.

Applicant Response: The complete summary of the 25-year storm is included.

No further response is needed from the applicant.

- ii. Analysis Point #5 appears to be off-site. Provide calculations to demonstrate that the existing infrastructure is sufficient to handle the additional flow from the development.

Applicant Response: There will not be any additional flow to Analysis Point #5 as the HydroCAD output shows reductions in both the peak flow and volume for all analyzed events.

The Applicant has not provided a summary table for the volume for each of the storm events. This information should be summarized in the Drainage Report, in the executive summary so the city can easily make this determination.

- iii. The proposed vegetation should be modeled in the ponded area of the proposed bioretention and not treated as 100% void space to ensure that with mature vegetation these features have sufficient capacity to convey the post-development peak discharge and volume.

Applicant Response: Bioretention areas have been eliminated from the plans.

No further response is needed from the applicant.

- iv. **The height of the vertical grate/orifice opening on the outlet structure for Wet Pond 1 in the HydroCAD model says 10"; however, the detail table shows a change in elevation equal to over 13". The Applicant should reconcile these values.**
- v. **The applicant has requested to provide the following information in the SWPPP prior to the preconstruction meeting as an alternative to providing the information in the application and response letter. The Planning Board should include this information as a condition if the application is approved.**
 - a. **Anticipated project start and completion dates, and duration of grading and construction activities.**
 - b. **Documentation on what LID site planning and design strategies were used on-site or why using LID strategies are not feasible, as required under § 218-8.B(1)(d)**
 - c. **Description of the procedures to control waste, such as discarded building materials, construction debris, sanitary waste, concrete washout, chemicals, and litter.**
 - d. **Locations of temporary sediment basins.**
 - e. **Location of equipment storage and staging areas and control procedures.**
 - f. **Location of vehicle fueling areas or equipment fueling areas and control procedures.**

- g. Location of disposal facilities for solid waste, construction debris, sanitary waste, concrete washout, and plan for stump disposal and control procedures.**
- h. Location and description of proposed deicing material storage areas.**

Should the City or the Applicant have any questions or comments, please feel free to contact me at rbourdeau@geosyntec.com or at (518) 593-5406.

Sincerely,



Renee L. Bourdeau, P.E.
Senior Water Resources Engineer



Emma Williamson, EIT
Senior Staff Engineer

JONES & BEACH ENGINEERS INC.

85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885
603.772.4746 - JonesandBeach.com

April 10, 2022

Rochester Planning Board
Attn. Nel Sylvian
31 Wakefield Street
Rochester, NH 03867

**RE: Response Letter
19 Old Gonic Road, Rochester, NH
Tax Map 131, Lot 1
JBE Project No. 21090**

Dear Mr. Sylvian,

We are in receipt of comments from Derek Caldwell at Sebago Technics dated March 11, 2022. Review comments are listed below with our responses in bold. Stephen G. Pernaw & Company are responding to the traffic comments separately.

Site Plan:

6. General - The TIA makes mention that the Old Gonic Road access will be gated and limited to site departures. The submitted site plan does not appear to show any proposed gate. Has it been considered to limit the Old Gonic Road entrance to emergency access only, requiring all project traffic to use Emerson Avenue?

RESPONSE: The Old Gonic Road access will be one-way and limited to exits only. We have moved "One Way Do Not Enter" signage to the corner of Old Gonic Road and State Street to warn drivers of this condition. Additionally, the pavement along Old Gonic Road and at the Old Gonic site exit has been reduced to 18' wide to discourage two-way traffic.

7. General - It is recommended to provide a pedestrian safety analysis of the existing surrounding roadways and potential for connections other than the proposed Emerson Avenue sidewalk. Old Gonic Road may be a walking route and does not have sidewalks currently.

RESPONSE: This will be addressed in a separate pedestrian study, currently underway.

8. Sheet OFF2/3/4- The project proposes to construct a new sidewalk along the westerly side of Emerson Avenue connecting the development with existing sidewalk on Brock Street. Further detail should be provided for the proposed "handicap tipdown(s)" to ensure compliance with ADA standards and the NHDOT Sidewalk Details. Special attention should be made to how the proposed sidewalk will interface with the existing sidewalk/curb ramp at the intersection of Emerson Avenue and Brock Street.

RESPONSE: A handicap ramp detail showing concrete ramps is on Sheet D1 of the Plan Set. We plan to utilize the existing ramp at the intersection of Emerson Avenue and Brock Street. The proposed sidewalk will ramp down to the existing truncated dome area.

W:\21090 - ROCHESTER - 19 OLD GONIC RD - SITE - GREEN\WORD FILES\Response Letter 3 -Sebago.docx

9. Sheet OFF 3- We agree that rather than a full auxiliary left turn lane a widened bypass shoulder would be appropriate at the intersection of Brock Street and Emerson Street. It is recommended to increase the shoulder width to 11' to provide an additional 1' offset from curb.

RESPONSE: The shoulder width has been increased to 11-feet on the attached plans.

10. Sheet OFF3 – It is recommended to revise the Shoulder Widening Typical Section detail to have the full depth pavement structure extend to the existing edge of travel way and both the crushed gravel and gravel extend to the existing edge of pavement.

RESPONSE: The detail has been revised as suggested.

11. Sheet OFF3 – Overall further detail is required of the design of the shoulder widening. This would include items such as any modifications to pavement markings, how the proposed widening will interface with the existing residential driveways and detail to show any required modifications to the existing closed drainage system. Full grading design with cut/fill limits will need to be understood to evaluate any impacts to adjacent properties.

RESPONSE: A 20 scale detail of the work area has been provided to show more detail on the shoulder widening. There is not change to the existing road striping.

12. Sheet OFF3 – Applicant should coordinate with Rochester DPW on the desired pavement structure for the proposed shoulder widening.

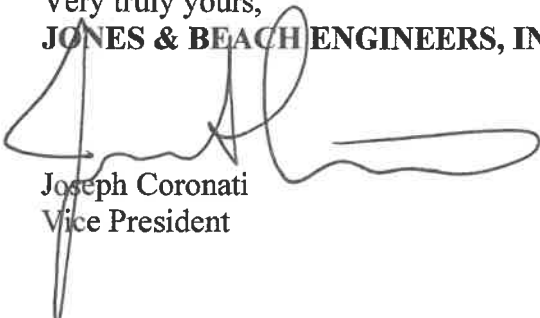
RESPONSE: We are working with City departments on all aspects of the offsite improvements.

Included with this response letter are the following:

Thank you very much for your time.

Very truly yours,

JONES & BEACH ENGINEERS, INC.



Joseph Coronati
Vice President

cc: Green & Company (via email)
John O'Neil (via email)



CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

Memorandum

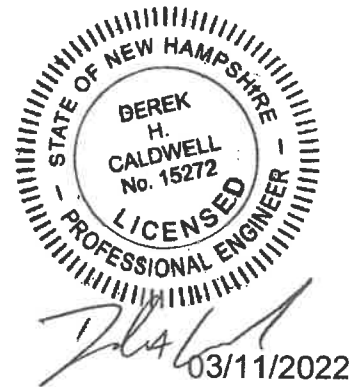
20540-02

To: Dana Webber, P.E.
Assistant City Engineer
City of Rochester, New Hampshire

From: Derek Caldwell, P.E., PTOE
Sebago Technics, Inc

Date: March 11, 2022

Subject: Traffic Peer Review
19 Old Gonic Road - Residential Development
Rochester, New Hampshire



Sebago Technics, Inc. has completed a traffic peer review of the materials submitted by Green and Company for the proposed multifamily residential development at 19 Old Gonic Road in Rochester, New Hampshire. Our review focused on the following documents:

- "Proposed Site Plan – Bayberry Commons" by Jones and Beach Engineers, Inc dated April 29, 2021 with most recent revision date of January 18, 2022.
- "Traffic Impact Assessment – Proposed Residential Development, Rochester, New Hampshire" by Stephen G. Pernaw & Company, Inc. dated December 21, 2021.
- Synchro v10 Traffic Analysis Models by Stephen G. Pernaw & Company, Inc

The project proposes to construct twenty-seven separate residential buildings containing a total of 174 dwelling units. The site is currently undeveloped. Access to the site is proposed by way of extensions of Old Gonic Road and Emerson Avenue. The access via Old Gonic Road is proposed to be limited to exiting traffic only. The access to Emerson Avenue will be full access, serving arriving and departing movements.

Our review evaluated the submitted materials for general conformance with the City of Rochester Site Plan Regulations, as they pertain to traffic, as well as general engineering practices. We offer the following comments.

Traffic Impact Assessment (TIA)

1. *The TIA completed a trip generation calculation for the development using the Institute of Transportation Engineers Trip Generation Manual, 11th Edition. The calculation determined the development would generate a total of 1,192 trips on a Weekday, 77 trips in the AM Peak Hour*

of the adjacent street, and 95 Trips in the PM Peak Hour of the adjacent street. We are in agreement with this methodology and the calculated trip generation.

2. *The TIA presents no-build traffic volumes for the analysis years of 2023 and 2033. The volumes are based on turning movement counts collected at the study intersections, a seasonal adjustment factor of 1.01, a 2% annual background growth factor and a "COVID-19" adjustment factor of 1.53 for the AM Peak Hour and 1.30 for the PM Peak Hour.*
3. *The study included a capacity and queueing analysis for the following intersections:*
 - *Brock Street at Emerson Avenue (unsignalized)*
 - *Brock Street at Old Gonic Road (unsignalized)*
 - *Brock Street at NH 125 (Columbus Avenue) (Signalized)*

We are in agreement with the methodology and findings of the analysis for the two unsignalized intersections along Brock Street. As stated above, the applicant proposes to construct a widened bypass shoulder on Brock Street westbound at the intersection with Emerson Avenue to help mitigate the impact of left-turning vehicles generated by the development.

4. *The analysis of the signalized intersection of Brock Street at NH 125 appears to have been completed using the Highway Capacity Manual (HCM) 2000 methodology within the Synchro 10 software environment. It is recommended to present revised results based on the latest HCM 6 methodology (as was done for the unsignalized intersections).*
5. *This intersection is also part of a coordinated signal system including the intersections along NH125 to the north including:*
 - *NH 125 at Old Dover Road*
 - *NH 125 at Charles Street*
 - *NH 125 at Lowell Street*

The completed Synchro/HCM analysis modeled the intersection as actuated-uncoordinated. Additionally, the modeled signal timings and recall settings do not accurately depict the existing signal timings. It is requested the applicant revise the capacity analysis using the existing signal timings. These are provided on the attached spreadsheet for reference. The applicant may reach out to us directly for any clarification that may be needed.

It is recognized that using the existing signal timings with the presented analysis traffic volumes, which include a rather conservative Covid adjustment factor, may result in the intersection being over capacity under both no-build and build conditions. With that, we would request the revised analysis be completed using traffic volumes not adjusted by the stated covid factors

Site Plan

6. *General - The TIA makes mention that the Old Gonic Road access will be gated and limited to site departures. The submitted site plan does not appear to show any proposed gate. Has it been considered to limit the Old Gonic Road entrance to emergency access only, requiring all project traffic to use Emerson Avenue?*

7. *General – It is recommended to provide a pedestrian safety analysis of the existing surrounding roadways and potential for connections other than the proposed Emerson Avenue sidewalk. Old Gonic Road may be a walking route and does not have sidewalks currently*
8. *Sheet OFF2/3/4- The project proposes to construct a new sidewalk along the westerly side of Emerson Avenue connecting the development with existing sidewalk on Brock Street. Further detail should be provided for the proposed “handicap tipdown(s)” to ensure compliance with ADA standards and the NHDOT Sidewalk Details. Special attention should be made to how the proposed sidewalk will interface with the existing sidewalk/curb ramp at the intersection of Emerson Avenue and Brock Street.*
9. *Sheet OFF 3- We agree that rather than a full auxiliary left turn lane a widened bypass shoulder would be appropriate at the intersection of Brock Street and Emerson Street. It is recommended to increase the shoulder width to 11' to provide an additional 1' offset from curb.*
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11. *Sheet OFF3 – Overall further detail is required of the design of the shoulder widening. This would include items such as any modifications to pavement markings, how the proposed widening will interface with the existing residential driveways and detail to show any required modifications to the existing closed drainage system. Full grading design with cut/fill limits will need to be understood to evaluate any impacts to adjacent properties.*
12. *Sheet OFF3 – Applicant should coordinate with Rochester DPW on the desired pavement structure for the proposed shoulder widening.*

Please let us know if you have any questions or if we can be of further assistance in the review of this project.

Columbus Avenue at Brock Street

Test Operation Mode: 0

Schedule								
	Su	M	Tu	W	Th	F	Sa	Day Plan
1		X	X	X	X	X		1
2	X						X	2
-								
-								

Pattern Table				
Pattern	Cycle	Offset	Split	Seq
1	80	37	1	1
2	65	34	2	1
3	70	35	3	1
-	-	-	-	-
-	-	-	-	-

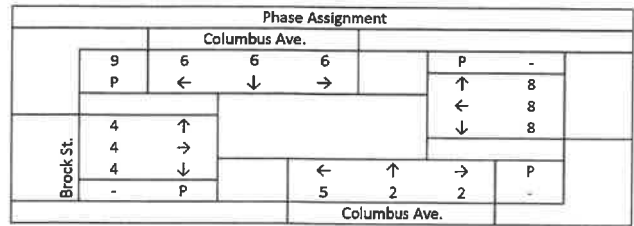
Sequence 1 / Ring and Barrier				
2	1	3	4	9
6	5	7	8	10

Coordination Constants			
Pattern	Strategy	F.Off	Trans
1	EoG	Fixed	Srt+Lng
2	EoG	Fixed	Srt+Lng
3	EoG	Fixed	Srt+Lng
-	-	-	-
-	-	-	-

Day Plan 1		
	TOD	Action
1	0:00	54
2	6:30	1
3	9:00	2
4	14:00	3
5	19:00	54
6	-	-

Day Plan 2		
	TOD	Action
1	0:00	54
2	9:00	2
3	19:00	54
4	-	-
5	-	-
6	-	-

Action Table	
Action	Pattern
54	254
1	1
2	2
3	3
-	-
-	-



Free/Split: 254										
Phase	1	2	3	4	5	6	7	8	9	10
Min Gr	-	10	-	5	5	10	-	5	7	7
Pass*10	-	0.3	-	0.4	-	0.3	-	0.3	-	-
Max Gr	-	33.5	-	10.5	10	17.5	-	10.5	22	22
Y Clr	-	3.5	-	3	3.5	3.5	-	3	3	3
Red Clr	-	2	-	2.5	2.5	2	-	2.5	1	1
Split	-	39	-	16	16	23	-	16	26	26
Walk									7	7
Ped Clr									15	15
Recall		Soft				Soft				
D.Entry	-	X	-	X	-	X	-	X	-	-

Split: 1										
Phase	1	2	3	4	5	6	7	8	9	10
Min Gr	-	10	-	5	5	10	-	5	5	5
Pass*10	-	0.3	-	0.4	-	0.3	-	0.3	-	-
Max Gr	-	43.5	-	14.5	10	28.5	-	14.5	7	7
Y Clr	-	3.5	-	3	3.5	3.5	-	3	3	3
Red Clr	-	3	-	2.5	2.5	2	-	2.5	1	1
Split	-	50	-	20	16	34	-	20	10	10
Walk									7	7
Ped Clr									15	15
Recall		Max				Coord				
D.Entry	-	X	-	X	-	X	-	X	-	-

Split: 2										
Phase	1	2	3	4	5	6	7	8	9	10
Min Gr	-	10	-	5	5	10	-	5	5	5
Pass*10	-	0.3	-	0.4	-	0.3	-	0.3	-	-
Max Gr	-	33.5	-	10.5	10	17.5	-	10.5	7	7
Y Clr	-	3.5	-	3	3.5	3.5	-	3	3	3
Red Clr	-	3	-	2.5	2.5	2	-	2.5	1	1
Split	-	39	-	20	16	23	-	16	6	6
Walk									7	7
Ped Clr									15	15
Recall		Soft				Coord				
D.Entry	-	X	-	X	-	X	-	X	-	-

Split: 3										
Phase	1	2	3	4	5	6	7	8	9	10
Min Gr	-	10	-	5	5	10	-	5	5	5
Pass*10	-	0.3	-	0.4	-	0.3	-	0.3	-	-
Max Gr	-	33.5	-	16.5	8	20.5	-	16.5	7	7
Y Clr	-	3.5	-	3	3.5	3.5	-	3	3	3
Red Clr	-	3	-	2.5	2.5	2	-	2.5	1	1
Split	-	40	-	22	14	26	-	22	8	8
Walk									7	7
Ped Clr									15	15
Recall		Soft				Coord				
D.Entry	-	X	-	X	-	X	-	X	-	-

MEMORANDUM

Ref: 2112A

To: Dana Webber, P.E., Assistant City Engineer, City of Rochester
Michael Green, Green and Company

From: Stephen G. Pernaw, P.E., PTOE

Subject: Proposed Residential Development – Green and Company
Rochester, New Hampshire

Date: April 11, 2022

On December 21, 2021 our office published the report entitled *“Traffic Impact Assessment-Proposed Residential Development”* for Green and Company. We are now in receipt of peer review comments from Sebago Technics dated March 11, 2022. The purpose of this memorandum is to provide responses to all applicable comments. Each comment is repeated below, for convenience:

SEBAGO COMMENT 1: *“The TIA completed a trip generation calculation for the development using the Institute of Transportation Engineers Trip Generation Manual, 11th Edition. The calculation determined the development would generate a total of 1,192 trips on a Weekday, 77 trips in the AM Peak Hour of the adjacent street, and 95 Trips in the PM Peak Hour of the adjacent street. We are in agreement with this methodology and the calculated trip generation.”*

SGP & Co. Inc. Response: Comment acknowledged; no response necessary.

SEBAGO COMMENT 2: *“The TIA presents no-build traffic volumes for the analysis years of 2023 and 2033. The volumes are based on turning movement counts collected at the study intersections, a seasonal adjustment factor of 1.01, a 2% annual background growth factor and a “COVID-19” adjustment factor of 1.53 for the AM Peak Hour and 1.30 for the PM Peak Hour.”*

SGP & Co. Inc. Response: Comment acknowledged; no response necessary.

SEBAGO COMMENT 3: *“The study included a capacity and queueing analysis for the following intersections:*

- *Brock Street at Emerson Avenue (unsignalized)*
- *Brock Street at Old Gonic Road (unsignalized)*
- *Brock Street at NH 125 (Columbus Avenue) (Signalized)*

We are in agreement with the methodology and findings of the analysis for the two unsignalized intersections along Brock Street. As stated above, the applicant proposes to construct a widened bypass shoulder on Brock Street westbound at the intersection with Emerson Avenue to help mitigate the impact of left-turning vehicles generated by the development.”

SGP & Co. Inc. Response: Comment acknowledged; no response necessary.

SEBAGO COMMENT 4: *"The analysis of the signalized intersection of Brock Street at NH 125 appears to have been completed using the Highway Capacity Manual (HCM) 2000 methodology within the Synchro 10 software environment. It is recommended to present revised results based on the latest HCM 6 methodology (as was done for the unsignalized intersections)."*

SGP & Co. Inc. Response: Use of the HCM2000 methodology is consistent with and acceptable to the NHDOT. This methodology also provides a volume-to-capacity (v/c) ratio for the overall intersection; a helpful metric that is not available with the HCM6 methodology. Nevertheless, a supplemental capacity analysis was completed using HCM6, as requested (see Attachments 1-31).

SEBAGO COMMENT 5: *"This intersection is also part of a coordinated signal system including the intersections along NH125 to the north including:*

- NH 125 at Old Dover Road
- NH 125 at Charles Street
- NH 125 at Lowell Street

The completed Synchro/HCM analysis modeled the intersection as actuated-uncoordinated. Additionally, the modeled signal timings and recall settings do not accurately depict the existing signal timings. It is requested the applicant revise the capacity analysis using the existing signal timings. These are provided on the attached spreadsheet for reference. The applicant may reach out to us directly for any clarification that may be needed."

"It is recognized that using the existing signal timings with the presented analysis traffic volumes, which include a rather conservative Covid adjustment factor, may result in the intersection being over capacity under both no-build and build conditions. With that, we would request the revised analysis be completed using traffic volumes not adjusted by the stated covid factors."

SGP & Co. Inc. Response: Supplemental traffic volumes (without Covid factors) and the supplemental capacity analyses using HCM6 (and the signal timing parameters provided by Sebago Technics) are attached (see Attachments 32-35).

Other Considerations: It is our understanding that the current development proposal will be smaller than was analyzed in the traffic study. The table below demonstrates that the reduction in peak hour trips is inconsequential from a traffic impact and operations standpoint. Therefore, it is reasonable to conclude that the published study is slightly conservative on the "high side," and that the study findings and recommendations remain valid.

Table 1		Trip Generation Comparison (174 vs. 168 Units Townhouses)		
		Previous Proposal (174 Units)	Current Proposal (168 Units)	Net Change
Weekday (24 hours)	Entering	596 veh	576 veh	-20 veh
	Exiting	596 veh	576 veh	-20 veh
	Total	1,192 trips	1,152 trips	-40 trips
AM Peak Hour	Entering	18 veh	18 veh	0 veh
	Exiting	59 veh	57 veh	-2 veh
	Total	77 trips	75 trips	-2 trips
PM Peak Hour	Entering	60 veh	58 veh	-2 veh
	Exiting	35 veh	35 veh	0 veh
	Total	95 trips	93 trips	-2 trips

¹ ITE Land Use Code 220 - Multifamily Housing (Low-Rise) Trip Equation Method

ATTACHMENTS

Table 6




















Signal-Controlled Intersection Capacity Analysis Summary - HCM 6th
NH125 / Brock Street / Restaurant Driveway

	2021 Existing				2023 No-Build				2023 Build				2023 No-Build				2023 Build			
	V/C ¹⁾	Delay ²⁾	LOS ³⁾	Queue Avg/95 th 4)	V/C ¹⁾	Delay ²⁾	LOS ³⁾	Queue Avg/95 th 4)	V/C ¹⁾	Delay ²⁾	LOS ³⁾	Queue Avg/95 th 4)	V/C ¹⁾	Delay ²⁾	LOS ³⁾	Queue Avg/95 th 4)	V/C ¹⁾	Delay ²⁾	LOS ³⁾	Queue Avg/95 th 4)
Weekday AM Peak Hour																				
Brock Street - EB LT&TH	0.38	29.8	C	43 (81)	0.39	28.5	C	46 (85)	0.42	28.8	C	51 (92)	0.45	28.5	C	56 (101)	0.49	28.5	C	63 (111)
Brock Street - EB RT	0.42	30.0	C	0 (8)	0.41	29.3	C	0 (4)	0.52	29.1	C	0 (24)	0.39	27.0	C	0 (13)	0.51	27.5	C	0 (33)
Private Dwy - WB LT,TH,RT	0.01	27.1	C	0 (0)	0.01	26.6	C	0 (0)	0.01	25.3	C	0 (0)	0.01	24.7	C	0 (0)	0.01	24.0	C	0 (0)
NH125 - NB LT	0.39	32.8	C	21 (52)	0.40	32.8	C	22 (53)	0.45	33.0	C	26 (61)	0.46	33.0	C	27 (62)	0.50	33.3	C	31 (69)
NH125 - NB TH&RT	0.28	2.7	A	47 (77)	0.30	3.3	A	54 (88)	0.31	3.8	A	58 (94)	0.38	4.6	A	70 (113)	0.39	5.0	A	70 (113)
NH125 - SB LT&TH	0.49	7.8	A	148 (235)	0.54	9.3	A	159 (254)	0.56	10.6	B	186 (284)	0.70	14.1	B	219 (353)	0.72	15.5	B	219 (353)
NH125 - SB RT	0.08	4.7	A	0 (8)	0.09	5.4	A	0 (8)	0.10	6.2	A	0 (10)	0.12	6.8	A	0 (14)	0.12	7.4	A	0 (15)
Overall	NA	10.3	B		NA	11.1	B		NA	12.7	B		NA	13.6	B		NA	14.9	B	
Weekday PM Peak Hour																				
Brock Street - EB LT&TH	0.54	26.2	C	54 (121)	0.61	28.8	C	57 (128)	0.64	30.1	C	61 (137)	0.72	34.0	C	73 (168)	0.74	35.8	D	233 (406)
Brock Street - EB RT	0.22	21.0	C	0 (0)	0.23	21.1	C	0 (0)	0.29	21.5	C	0 (9)	0.27	21.4	C	0 (6)	0.34	21.8	C	0 (55)
Private Dwy - WB LT,TH,RT	0.06	20.4	C	2 (15)	0.07	20.6	C	2 (15)	0.07	20.6	C	2 (15)	0.10	20.8	C	3 (18)	0.10	20.8	C	8 (33)
NH125 - NB LT	0.57	29.7	C	41 (97)	0.59	30.5	C	43 (104)	0.77	43.6	D	59 (147)	0.71	37.5	D	53 (132)	0.90	63.7	E	196 (356)
NH125 - NB TH&RT	0.51	6.6	A	106 (162)	0.54	6.9	A	109 (175)	0.54	6.9	A	109 (175)	0.63	7.5	A	148 (247)	0.63	7.5	A	432 (616)
NH125 - SB LT&TH	0.68	16.1	B	186 (292)	0.72	17.3	B	195 (317)	0.72	17.3	B	195 (317)	0.84	21.4	C	271 (507)	0.84	21.4	C	846 (1165)
NH125 - SB RT	0.24	9.7	A	0 (25)	0.25	9.9	A	0 (26)	0.27	10.0	B	0 (27)	0.29	9.5	A	0 (28)	0.31	9.6	A	29 (71)
Overall	NA	14.1	B		NA	14.9	B		NA	16.5	B		NA	17.5	B		NA	19.9	B	

1) Volume-to-capacity ratio, 2) Delay in vehicles per seconds, 3) Level of Service, 4) Queue length in feet

















HCM 6th Signalized Intersection Summary

3: NH 125 & Brock Street/Restaurant Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	0	67	1	0	1	47	364	0	0	547	79
Future Volume (veh/h)	92	0	67	1	0	1	47	364	0	0	547	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1856	1900	1900	1900	1870	1811	1900	1900	1841	1885
Adj Flow Rate, veh/h	111	0	81	1	0	1	51	391	0	0	588	85
Peak Hour Factor	0.83	0.83	0.83	0.90	0.90	0.90	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	3	0	0	0	2	6	0	0	4	1
Cap, veh/h	291	0	191	120	24	66	131	1410	0	0	1193	1035
Arrive On Green	0.12	0.00	0.12	0.12	0.00	0.12	0.07	0.78	0.00	0.00	0.65	0.65
Sat Flow, veh/h	1554	0	1572	352	194	546	1781	1811	0	0	1841	1598
Grp Volume(v), veh/h	111	0	81	2	0	0	51	391	0	0	588	85
Grp Sat Flow(s), veh/h/ln	1554	0	1572	1092	0	0	1781	1811	0	0	1841	1598
Q Serve(g_s), s	0.0	0.0	3.3	0.0	0.0	0.0	1.9	4.3	0.0	0.0	11.6	1.4
Cycle Q Clear(g_c), s	4.4	0.0	3.3	4.4	0.0	0.0	1.9	4.3	0.0	0.0	11.6	1.4
Prop In Lane	1.00		1.00	0.50		0.50	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	291	0	191	210	0	0	131	1410	0	0	1193	1035
V/C Ratio(X)	0.38	0.00	0.42	0.01	0.00	0.00	0.39	0.28	0.00	0.00	0.49	0.08
Avail Cap(c_a), veh/h	374	0	281	293	0	0	178	1410	0	0	1193	1035
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.0	0.0	28.5	27.1	0.0	0.0	30.9	2.2	0.0	0.0	6.4	4.6
Incr Delay (d2), s/veh	0.8	0.0	1.5	0.0	0.0	0.0	1.9	0.5	0.0	0.0	1.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	1.3	0.0	0.0	0.0	0.9	0.8	0.0	0.0	3.7	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	0.0	30.0	27.1	0.0	0.0	32.8	2.7	0.0	0.0	7.8	4.7
LnGrp LOS	C	A	C	C	A	A	C	A	A	A	A	A
Approach Vol, veh/h		192			2			442			673	
Approach Delay, s/veh		29.9			27.1			6.2			7.4	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		58.0		12.0	9.1	48.9		12.0				
Change Period (Y+Rc), s		5.5		5.5	6.0	5.5		5.5				
Max Green Setting (Gmax), s		48.5		10.5	5.0	37.5		10.5				
Max Q Clear Time (g_c+I1), s		6.3		6.4	3.9	13.6		6.4				
Green Ext Time (p_c), s		1.6		0.2	0.0	3.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			10.3									
HCM 6th LOS			B									

Timings

3: NH 125 & Brock Street/Restaurant Driveway

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	92	0	67	1	0	47	364	547	79
Future Volume (vph)	92	0	67	1	0	47	364	547	79
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	NA	Perm
Protected Phases		4			8	5	2	6	
Permitted Phases	4		4	8					6
Detector Phase	4	4	4	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	16.0	16.0	16.0
Total Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	54.0	43.0	43.0
Total Split (%)	22.9%	22.9%	22.9%	22.9%	22.9%	15.7%	77.1%	61.4%	61.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)		3.5	3.5		3.5	4.0	3.5	3.5	3.5
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)		11.3	11.3		11.2	7.4	54.7	48.1	48.1
Actuated g/C Ratio		0.16	0.16		0.16	0.11	0.78	0.69	0.69
v/c Ratio		0.49	0.22		0.01	0.27	0.28	0.47	0.07
Control Delay		34.1	3.3		0.0	33.3	3.7	9.5	0.7
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		34.1	3.3		0.0	33.3	3.7	9.5	0.7
LOS		C	A		A	C	A	A	A
Approach Delay		21.1					7.1	8.4	
Approach LOS		C					A	A	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 9.8






Intersection Capacity Utilization 54.7%

Analysis Period (min) 15

Intersection LOS: A








ICU Level of Service A

Splits and Phases: 3: NH 125 & Brock Street/Restaurant Driveway

	
Ø2 (R)	Ø4
54 s	16 s
	
Ø5	Ø8
11 s	16 s
	
Ø6 (R)	
43 s	




















Queues

3: NH 125 & Brock Street/Restaurant Driveway

							
Lane Group	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	111	81	2	51	391	588	85
v/c Ratio	0.49	0.22	0.01	0.27	0.28	0.47	0.07
Control Delay	34.1	3.3	0.0	33.3	3.7	9.5	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	3.3	0.0	33.3	3.7	9.5	0.7
Queue Length 50th (ft)	43	0	0	21	47	148	0
Queue Length 95th (ft)	81	8	0	52	77	235	8
Internal Link Dist (ft)	204		294		1001	1243	
Turn Bay Length (ft)				375			
Base Capacity (vph)	251	388	383	186	1401	1256	1140
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.21	0.01	0.27	0.28	0.47	0.07
Intersection Summary							

HCM 6th Signalized Intersection Summary

3: NH 125 & Brock Street/Restaurant Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	0	70	1	0	1	49	382	0	0	575	83
Future Volume (veh/h)	97	0	70	1	0	1	49	382	0	0	575	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1856	1900	1900	1900	1870	1811	1900	1900	1841	1885
Adj Flow Rate, veh/h	117	0	84	1	0	1	53	411	0	0	618	89
Peak Hour Factor	0.83	0.83	0.83	0.90	0.90	0.90	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	3	0	0	0	2	6	0	0	4	1
Cap, veh/h	297	0	205	120	24	66	133	1368	0	0	1148	996
Arrive On Green	0.13	0.00	0.13	0.13	0.00	0.13	0.07	0.76	0.00	0.00	0.62	0.62
Sat Flow, veh/h	1487	0	1572	326	183	509	1781	1811	0	0	1841	1598
Grp Volume(v), veh/h	117	0	84	2	0	0	53	411	0	0	618	89
Grp Sat Flow(s), veh/h/ln	1487	0	1572	1018	0	0	1781	1811	0	0	1841	1598
Q Serve(g_s), s	0.0	0.0	3.4	0.0	0.0	0.0	2.0	5.0	0.0	0.0	13.3	1.6
Cycle Q Clear(g_c), s	5.1	0.0	3.4	5.1	0.0	0.0	2.0	5.0	0.0	0.0	13.3	1.6
Prop In Lane	1.00		1.00	0.50		0.50	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	297	0	205	210	0	0	133	1368	0	0	1148	996
V/C Ratio(X)	0.39	0.00	0.41	0.01	0.00	0.00	0.40	0.30	0.00	0.00	0.54	0.09
Avail Cap(c_a), veh/h	366	0	281	280	0	0	178	1368	0	0	1148	996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	0.0	28.0	26.6	0.0	0.0	30.9	2.7	0.0	0.0	7.5	5.3
Incr Delay (d2), s/veh	0.8	0.0	1.3	0.0	0.0	0.0	1.9	0.6	0.0	0.0	1.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	1.3	0.0	0.0	0.0	0.9	1.1	0.0	0.0	4.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	0.0	29.3	26.6	0.0	0.0	32.8	3.3	0.0	0.0	9.3	5.4
LnGrp LOS	C	A	C	C	A	A	C	A	A	A	A	A
Approach Vol, veh/h		201			2			464			707	
Approach Delay, s/veh		29.4			26.6			6.7			8.8	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		57.4		12.6	9.2	48.2		12.6				
Change Period (Y+Rc), s		6.5		5.5	6.0	* 6.5		5.5				
Max Green Setting (Gmax), s		47.5		10.5	5.0	* 38		10.5				
Max Q Clear Time (g_c+H1), s		7.0		7.1	4.0	15.3		7.1				
Green Ext Time (p_c), s		1.7		0.2	0.0	3.1		0.0				

Intersection Summary

















HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings

3: NH 125 & Brock Street/Restaurant Driveway

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	97	0	70	1	0	49	382	575	83
Future Volume (vph)	97	0	70	1	0	49	382	575	83
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	NA	Perm
Protected Phases		4			8	5	2	6	
Permitted Phases	4		4	8					6
Detector Phase	4	4	4	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	16.5	16.0	16.0
Total Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	54.0	43.0	43.0
Total Split (%)	22.9%	22.9%	22.9%	22.9%	22.9%	15.7%	77.1%	61.4%	61.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)		3.5	3.5		3.5	4.0	4.5	3.5	3.5
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)		11.4	11.4		11.2	7.4	53.9	48.1	48.1
Actuated g/C Ratio		0.16	0.16		0.16	0.11	0.77	0.69	0.69
v/c Ratio		0.51	0.22		0.01	0.28	0.30	0.49	0.08
Control Delay		34.8	2.5		0.0	33.5	4.1	9.8	0.8
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		34.8	2.5		0.0	33.5	4.1	9.8	0.8
LOS		C	A		A	C	A	A	A
Approach Delay		21.3					7.5	8.7	
Approach LOS		C					A	A	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 47.5 (68%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 10.1










Intersection LOS: B

Intersection Capacity Utilization 57.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: NH 125 & Brock Street/Restaurant Driveway

								
Ø2 (R)			Ø5	Ø6 (R)		Ø4		Ø8
54 s			11 s	43 s		16 s		16 s




















Queues

3: NH 125 & Brock Street/Restaurant Driveway

	→	↘	←	↙	↑	↓	↗
Lane Group	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	117	84	2	53	411	618	89
v/c Ratio	0.51	0.22	0.01	0.28	0.30	0.49	0.08
Control Delay	34.8	2.5	0.0	33.5	4.1	9.8	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	2.5	0.0	33.5	4.1	9.8	0.8
Queue Length 50th (ft)	46	0	0	22	54	159	0
Queue Length 95th (ft)	85	4	0	53	88	254	8
Internal Link Dist (ft)	204		294		1001	1243	
Turn Bay Length (ft)				375			
Base Capacity (vph)	251	401	396	186	1379	1254	1139
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.21	0.01	0.28	0.30	0.49	0.08
Intersection Summary							

HCM 6th Signalized Intersection Summary

3: NH 125 & Brock Street/Restaurant Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	0	85	1	0	1	60	466	0	0	701	101
Future Volume (veh/h)	118	0	85	1	0	1	60	466	0	0	701	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1856	1900	1900	1900	1870	1811	1900	1900	1841	1885
Adj Flow Rate, veh/h	142	0	102	1	0	1	65	501	0	0	754	109
Peak Hour Factor	0.83	0.83	0.83	0.90	0.90	0.90	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	3	0	0	0	2	6	0	0	4	1
Cap, veh/h	319	0	260	119	24	66	142	1304	0	0	1074	932
Arrive On Green	0.17	0.00	0.17	0.17	0.00	0.17	0.08	0.72	0.00	0.00	0.58	0.58
Sat Flow, veh/h	1307	0	1572	250	148	398	1781	1811	0	0	1841	1598
Grp Volume(v), veh/h	142	0	102	2	0	0	65	501	0	0	754	109
Grp Sat Flow(s), veh/h/ln	1307	0	1572	796	0	0	1781	1811	0	0	1841	1598
Q Serve(g_s), s	0.0	0.0	4.1	0.0	0.0	0.0	2.4	7.5	0.0	0.0	20.2	2.1
Cycle Q Clear(g_c), s	7.6	0.0	4.1	7.6	0.0	0.0	2.4	7.5	0.0	0.0	20.2	2.1
Prop In Lane	1.00		1.00	0.50		0.50	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	319	0	260	209	0	0	142	1304	0	0	1074	932
V/C Ratio(X)	0.45	0.00	0.39	0.01	0.00	0.00	0.46	0.38	0.00	0.00	0.70	0.12
Avail Cap(c_a), veh/h	338	0	281	228	0	0	178	1304	0	0	1074	932
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	26.1	24.6	0.0	0.0	30.8	3.8	0.0	0.0	10.3	6.5
Incr Delay (d2), s/veh	1.0	0.0	1.0	0.0	0.0	0.0	2.3	0.9	0.0	0.0	3.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	1.5	0.0	0.0	0.0	1.1	1.9	0.0	0.0	7.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.5	0.0	27.0	24.7	0.0	0.0	33.0	4.6	0.0	0.0	14.1	6.8
LnGrp LOS	C	A	C	C	A	A	C	A	A	A	B	A
Approach Vol, veh/h		244			2			566			863	
Approach Delay, s/veh		27.9			24.7			7.9			13.2	
Approach LOS		C			C			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		54.9		15.1	9.6	45.3		15.1				
Change Period (Y+Rc), s		6.5		5.5	6.0	* 6.5		5.5				
Max Green Setting (Gmax), s		47.5		10.5	5.0	* 38		10.5				
Max Q Clear Time (g_c+I1), s		9.5		9.6	4.4	22.2		9.6				
Green Ext Time (p_c), s		2.2		0.1	0.0	3.7		0.0				

Intersection Summary

















HCM 6th Ctrl Delay 13.6
 HCM 6th LOS B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings

3: NH 125 & Brock Street/Restaurant Driveway

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	118	0	85	1	0	60	466	701	101
Future Volume (vph)	118	0	85	1	0	60	466	701	101
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	NA	Perm
Protected Phases		4			8	5	2	6	
Permitted Phases	4		4	8					6
Detector Phase	4	4	4	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	16.5	16.0	16.0
Total Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	54.0	43.0	43.0
Total Split (%)	22.9%	22.9%	22.9%	22.9%	22.9%	15.7%	77.1%	61.4%	61.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)		3.5	3.5		3.5	4.0	4.5	3.5	3.5
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)		11.7	11.7		11.7	7.2	50.3	44.7	44.7
Actuated g/C Ratio		0.17	0.17		0.17	0.10	0.72	0.64	0.64
v/c Ratio		0.60	0.26		0.01	0.36	0.39	0.65	0.10
Control Delay		38.3	3.9		0.0	35.5	5.1	12.9	1.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		38.3	3.9		0.0	35.5	5.1	12.9	1.3
LOS		D	A		A	D	A	B	A
Approach Delay		23.9					8.6	11.4	
Approach LOS		C					A	B	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 47.5 (68%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 12.3



















Intersection LOS: B

Intersection Capacity Utilization 68.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: NH 125 & Brock Street/Restaurant Driveway

								
54 s			16 s			16 s		
								
11 s			43 s			16 s		




















Queues

3: NH 125 & Brock Street/Restaurant Driveway

	→	↘	←	↙	↑	↓	↗
Lane Group	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	142	102	2	65	501	754	109
v/c Ratio	0.60	0.26	0.01	0.36	0.39	0.65	0.10
Control Delay	38.3	3.9	0.0	35.5	5.1	12.9	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	3.9	0.0	35.5	5.1	12.9	1.3
Queue Length 50th (ft)	56	0	0	27	70	219	0
Queue Length 95th (ft)	101	13	0	62	113	353	14
Internal Link Dist (ft)	204		294		1001	1243	
Turn Bay Length (ft)				375			
Base Capacity (vph)	251	401	399	181	1287	1165	1068
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.25	0.01	0.36	0.39	0.65	0.10
Intersection Summary							

HCM 6th Signalized Intersection Summary

3: NH 125 & Brock Street/Restaurant Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	0	104	1	0	1	59	382	0	0	575	87
Future Volume (veh/h)	109	0	104	1	0	1	59	382	0	0	575	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1856	1900	1900	1900	1870	1811	1900	1900	1841	1885
Adj Flow Rate, veh/h	131	0	125	1	0	1	63	411	0	0	618	94
Peak Hour Factor	0.83	0.83	0.83	0.90	0.90	0.90	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	3	0	0	0	2	6	0	0	4	1
Cap, veh/h	313	0	240	120	24	67	141	1328	0	0	1099	954
Arrive On Green	0.15	0.00	0.15	0.15	0.00	0.15	0.08	0.73	0.00	0.00	0.60	0.60
Sat Flow, veh/h	1375	0	1572	283	159	442	1781	1811	0	0	1841	1598
Grp Volume(v), veh/h	131	0	125	2	0	0	63	411	0	0	618	94
Grp Sat Flow(s), veh/h/ln	1375	0	1572	884	0	0	1781	1811	0	0	1841	1598
Q Serve(g_s), s	0.0	0.0	5.1	0.0	0.0	0.0	2.4	5.5	0.0	0.0	14.3	1.8
Cycle Q Clear(g_c), s	6.5	0.0	5.1	6.5	0.0	0.0	2.4	5.5	0.0	0.0	14.3	1.8
Prop In Lane	1.00		1.00	0.50		0.50	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	313	0	240	212	0	0	141	1328	0	0	1099	954
V/C Ratio(X)	0.42	0.00	0.52	0.01	0.00	0.00	0.45	0.31	0.00	0.00	0.56	0.10
Avail Cap(c_a), veh/h	371	0	303	270	0	0	178	1328	0	0	1099	954
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	0.0	27.3	25.3	0.0	0.0	30.8	3.2	0.0	0.0	8.6	6.0
Incr Delay (d2), s/veh	0.9	0.0	1.7	0.0	0.0	0.0	2.2	0.6	0.0	0.0	2.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	1.9	0.0	0.0	0.0	1.1	1.3	0.0	0.0	5.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	0.0	29.1	25.3	0.0	0.0	33.0	3.8	0.0	0.0	10.6	6.2
LnGrp LOS	C	A	C	C	A	A	C	A	A	A	B	A
Approach Vol, veh/h		256			2			474			712	
Approach Delay, s/veh		28.9			25.3			7.7			10.1	
Approach LOS		C			C			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		55.8		14.2	9.5	46.3		14.2				
Change Period (Y+Rc), s		6.5		5.5	6.0	* 6.5		5.5				
Max Green Setting (Gmax), s		46.5		11.5	5.0	* 37		11.5				
Max Q Clear Time (g_c+I1), s		7.5		8.5	4.4	16.3		8.5				
Green Ext Time (p_c), s		1.7		0.3	0.0	3.1		0.0				

Intersection Summary

















HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings

3: NH 125 & Brock Street/Restaurant Driveway

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	109	0	104	1	0	59	382	575	87
Future Volume (vph)	109	0	104	1	0	59	382	575	87
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	NA	Perm
Protected Phases		4			8	5	2	6	
Permitted Phases	4		4	8					6
Detector Phase	4	4	4	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	16.5	16.0	16.0
Total Split (s)	17.0	17.0	17.0	17.0	17.0	11.0	53.0	42.0	42.0
Total Split (%)	24.3%	24.3%	24.3%	24.3%	24.3%	15.7%	75.7%	60.0%	60.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)		3.5	3.5		3.5	4.0	4.5	3.5	3.5
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)		12.2	12.2		12.2	7.4	49.8	44.2	44.2
Actuated g/C Ratio		0.17	0.17		0.17	0.11	0.71	0.63	0.63
v/c Ratio		0.54	0.32		0.01	0.34	0.32	0.54	0.09
Control Delay		34.6	5.9		0.0	34.6	4.8	11.1	1.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		34.6	5.9		0.0	34.6	4.8	11.1	1.0
LOS		C	A		A	C	A	B	A
Approach Delay		20.6					8.8	9.8	
Approach LOS		C					A	A	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 11.3





Intersection Capacity Utilization 66.8%

Analysis Period (min) 15

Intersection LOS: B








ICU Level of Service C

Splits and Phases: 3: NH 125 & Brock Street/Restaurant Driveway

			
Ø2 (R)	Ø5	Ø6 (R)	Ø4
53 s	11 s	42 s	17 s
			Ø8
			17 s




















Queues

3: NH 125 & Brock Street/Restaurant Driveway

							
Lane Group	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	131	125	2	63	411	618	94
v/c Ratio	0.54	0.32	0.01	0.34	0.32	0.54	0.09
Control Delay	34.6	5.9	0.0	34.6	4.8	11.1	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.6	5.9	0.0	34.6	4.8	11.1	1.0
Queue Length 50th (ft)	51	0	0	26	58	166	0
Queue Length 95th (ft)	92	24	0	61	94	264	10
Internal Link Dist (ft)	204		294		1001	1243	
Turn Bay Length (ft)				375			
Base Capacity (vph)	271	421	421	188	1275	1154	1058
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.30	0.00	0.34	0.32	0.54	0.09
Intersection Summary							

HCM 6th Signalized Intersection Summary

3: NH 125 & Brock Street/Restaurant Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	0	119	1	0	1	70	466	0	0	701	105
Future Volume (veh/h)	130	0	119	1	0	1	70	466	0	0	701	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1856	1900	1900	1900	1870	1811	1900	1900	1841	1885
Adj Flow Rate, veh/h	157	0	143	1	0	1	75	501	0	0	754	113
Peak Hour Factor	0.83	0.83	0.83	0.90	0.90	0.90	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	0	3	0	0	0	2	6	0	0	4	1
Cap, veh/h	322	0	281	112	25	59	149	1281	0	0	1043	905
Arrive On Green	0.18	0.00	0.18	0.18	0.00	0.18	0.08	0.71	0.00	0.00	0.57	0.57
Sat Flow, veh/h	1228	0	1572	193	138	331	1781	1811	0	0	1841	1598
Grp Volume(v), veh/h	157	0	143	2	0	0	75	501	0	0	754	113
Grp Sat Flow(s),veh/h/ln	1228	0	1572	662	0	0	1781	1811	0	0	1841	1598
Q Serve(g_s), s	0.0	0.0	5.8	0.0	0.0	0.0	2.8	7.8	0.0	0.0	21.0	2.3
Cycle Q Clear(g_c), s	9.1	0.0	5.8	9.1	0.0	0.0	2.8	7.8	0.0	0.0	21.0	2.3
Prop In Lane	1.00		1.00	0.50		0.50	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	322	0	281	195	0	0	149	1281	0	0	1043	905
V/C Ratio(X)	0.49	0.00	0.51	0.01	0.00	0.00	0.50	0.39	0.00	0.00	0.72	0.12
Avail Cap(c_a), veh/h	322	0	281	195	0	0	178	1281	0	0	1043	905
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	0.0	26.0	24.0	0.0	0.0	30.7	4.1	0.0	0.0	11.1	7.1
Incr Delay (d2), s/veh	1.1	0.0	1.5	0.0	0.0	0.0	2.6	0.9	0.0	0.0	4.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	2.1	0.0	0.0	0.0	1.3	2.1	0.0	0.0	8.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.5	0.0	27.5	24.0	0.0	0.0	33.3	5.0	0.0	0.0	15.5	7.4
LnGrp LOS	C	A	C	C	A	A	C	A	A	A	B	A
Approach Vol, veh/h		300			2			576			867	
Approach Delay, s/veh		28.0			24.0			8.7			14.4	
Approach LOS		C			C			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		54.0		16.0	9.8	44.2		16.0				
Change Period (Y+Rc), s		6.5		5.5	6.0	* 6.5		5.5				
Max Green Setting (Gmax), s		47.5		10.5	5.0	* 38		10.5				
Max Q Clear Time (g_c+I1), s		9.8		11.1	4.8	23.0		11.1				
Green Ext Time (p_c), s		2.2		0.0	0.0	3.6		0.0				

Intersection Summary

















HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings

3: NH 125 & Brock Street/Restaurant Driveway

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	130	0	119	1	0	70	466	701	105
Future Volume (vph)	130	0	119	1	0	70	466	701	105
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	NA	Perm
Protected Phases		4			8	5	2	6	
Permitted Phases	4		4	8					6
Detector Phase	4	4	4	8	8	5	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	16.5	16.0	16.0
Total Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	54.0	43.0	43.0
Total Split (%)	22.9%	22.9%	22.9%	22.9%	22.9%	15.7%	77.1%	61.4%	61.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)		3.5	3.5		3.5	4.0	4.5	3.5	3.5
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)		11.9	11.9		11.9	7.1	50.1	42.3	42.3
Actuated g/C Ratio		0.17	0.17		0.17	0.10	0.72	0.60	0.60
v/c Ratio		0.65	0.37		0.01	0.42	0.39	0.68	0.11
Control Delay		41.4	7.8		0.0	37.3	5.1	14.6	1.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		41.4	7.8		0.0	37.3	5.1	14.6	1.4
LOS		D	A		A	D	A	B	A
Approach Delay		25.4					9.3	12.9	
Approach LOS		C					A	B	

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 13.9







Intersection Capacity Utilization 78.0%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service D

Splits and Phases: 3: NH 125 & Brock Street/Restaurant Driveway

					
Ø2 (R)	Ø4	Ø6 (R)	Ø5	Ø4	Ø8
54 s	16 s	43 s	11 s	16 s	16 s

Queues

3: NH 125 & Brock Street/Restaurant Driveway




















	→	↘	←	↙	↑	↓	↗
Lane Group	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	157	143	2	75	501	754	113
v/c Ratio	0.65	0.37	0.01	0.42	0.39	0.68	0.11
Control Delay	41.4	7.8	0.0	37.3	5.1	14.6	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	7.8	0.0	37.3	5.1	14.6	1.4
Queue Length 50th (ft)	63	0	0	31	70	219	0
Queue Length 95th (ft)	#111	33	0	69	113	353	15
Internal Link Dist (ft)	204		294		1001	1243	
Turn Bay Length (ft)				375			
Base Capacity (vph)	251	401	398	179	1281	1102	1017
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.36	0.01	0.42	0.39	0.68	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

3: NH 125 & Brock Street/Restaurant Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	5	67	4	3	6	102	579	0	2	650	180
Future Volume (veh/h)	148	5	67	4	3	6	102	579	0	2	650	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1900	1900	1885	1870
Adj Flow Rate, veh/h	156	5	71	4	3	7	113	643	0	2	670	186
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	0	0	1	2
Cap, veh/h	295	6	325	84	69	79	199	1262	0	59	929	783
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.11	0.67	0.00	0.49	0.49	0.49
Sat Flow, veh/h	894	29	1610	48	342	390	1795	1885	0	1	1883	1585
Grp Volume(v), veh/h	161	0	71	14	0	0	113	643	0	672	0	186
Grp Sat Flow(s), veh/h/ln	922	0	1610	781	0	0	1795	1885	0	1884	0	1585
Q Serve(g_s), s	0.2	0.0	2.3	0.1	0.0	0.0	3.7	10.6	0.0	0.0	0.0	4.2
Cycle Q Clear(g_c), s	11.3	0.0	2.3	11.2	0.0	0.0	3.7	10.6	0.0	17.4	0.0	4.2
Prop In Lane	0.97		1.00	0.29		0.50	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	300	0	325	232	0	0	199	1262	0	988	0	783
V/C Ratio(X)	0.54	0.00	0.22	0.06	0.00	0.00	0.57	0.51	0.00	0.68	0.00	0.24
Avail Cap(c_a), veh/h	300	0	325	232	0	0	203	1262	0	1015	0	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.3	0.0	20.7	20.3	0.0	0.0	26.1	5.1	0.0	12.3	0.0	9.0
Incr Delay (d2), s/veh	1.9	0.0	0.3	0.1	0.0	0.0	3.5	1.5	0.0	3.8	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.8	0.2	0.0	0.0	1.7	3.0	0.0	6.9	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.2	0.0	21.0	20.4	0.0	0.0	29.7	6.6	0.0	16.1	0.0	9.7
LnGrp LOS	C	A	C	C	A	A	C	A	A	B	A	A
Approach Vol, veh/h		232			14			756			858	
Approach Delay, s/veh		24.6			20.4			10.1			14.7	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		46.0		16.0	10.9	35.1		16.0				
Change Period (Y+Rc), s		6.5		5.5	6.0	* 6.5		5.5				
Max Green Setting (Gmax), s		39.5		10.5	5.0	* 30		10.5				
Max Q Clear Time (g_c+I1), s		12.6		13.3	5.7	19.4		13.2				
Green Ext Time (p_c), s		2.9		0.0	0.0	2.9		0.0				

Intersection Summary


















HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings

3: NH 125 & Brock Street/Restaurant Driveway

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	148	5	67	4	3	102	579	2	650	180
Future Volume (vph)	148	5	67	4	3	102	579	2	650	180
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	NA	Perm
Protected Phases		4			8	5	2		6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	16.5	16.0	16.0	16.0
Total Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	46.0	35.0	35.0	35.0
Total Split (%)	25.8%	25.8%	25.8%	25.8%	25.8%	17.7%	74.2%	56.5%	56.5%	56.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		3.5	3.5		3.5	4.0	4.5		3.5	3.5
Lead/Lag						Lead		Lag	Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)		12.0	12.0		11.7	7.8	45.4		36.8	36.8
Actuated g/C Ratio		0.19	0.19		0.19	0.13	0.73		0.59	0.59
v/c Ratio		0.61	0.16		0.05	0.51	0.47		0.60	0.18
Control Delay		33.4	0.8		15.9	35.2	6.1		14.1	2.0
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay		33.4	0.8		15.9	35.2	6.1		14.1	2.0
LOS		C	A		B	D	A		B	A
Approach Delay		23.4			15.9		10.5		11.5	
Approach LOS		C			B		B		B	

Intersection Summary

Cycle Length: 62

Actuated Cycle Length: 62

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 12.6



















Intersection LOS: B

Intersection Capacity Utilization 90.3%

ICU Level of Service E








Analysis Period (min) 15

Splits and Phases: 3: NH 125 & Brock Street/Restaurant Driveway

								
Ø2 (R)								Ø4
46 s								16 s
								
Ø5	Ø6 (R)							Ø8
11 s	35 s							16 s

Queues

3: NH 125 & Brock Street/Restaurant Driveway




















							
Lane Group	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	161	71	14	113	643	672	186
v/c Ratio	0.61	0.16	0.05	0.51	0.47	0.60	0.18
Control Delay	33.4	0.8	15.9	35.2	6.1	14.1	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	0.8	15.9	35.2	6.1	14.1	2.0
Queue Length 50th (ft)	54	0	2	41	106	186	0
Queue Length 95th (ft)	#121	0	15	#97	162	292	25
Internal Link Dist (ft)	204		294		1001	1243	
Turn Bay Length (ft)				375			
Base Capacity (vph)	282	463	333	223	1385	1139	1033
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.15	0.04	0.51	0.46	0.59	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

3: NH 125 & Brock Street/Restaurant Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	5	70	4	3	6	107	608	0	2	683	189
Future Volume (veh/h)	155	5	70	4	3	6	107	608	0	2	683	189
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1900	1900	1885	1870
Adj Flow Rate, veh/h	163	5	74	4	3	7	119	676	0	2	704	195
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	0	0	1	2
Cap, veh/h	272	5	325	75	62	62	203	1262	0	59	926	780
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.11	0.67	0.00	0.49	0.49	0.49
Sat Flow, veh/h	780	24	1610	0	306	307	1795	1885	0	1	1883	1585
Grp Volume(v), veh/h	168	0	74	14	0	0	119	676	0	706	0	195
Grp Sat Flow(s),veh/h/ln	804	0	1610	613	0	0	1795	1885	0	1884	0	1585
Q Serve(g_s), s	0.0	0.0	2.4	0.0	0.0	0.0	3.9	11.5	0.0	0.0	0.0	4.4
Cycle Q Clear(g_c), s	12.5	0.0	2.4	12.5	0.0	0.0	3.9	11.5	0.0	18.9	0.0	4.4
Prop In Lane	0.97		1.00	0.29		0.50	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	277	0	325	198	0	0	203	1262	0	985	0	780
V/C Ratio(X)	0.61	0.00	0.23	0.07	0.00	0.00	0.59	0.54	0.00	0.72	0.00	0.25
Avail Cap(c_a), veh/h	277	0	325	198	0	0	203	1262	0	1015	0	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.0	0.0	20.7	20.5	0.0	0.0	26.1	5.3	0.0	12.8	0.0	9.1
Incr Delay (d2), s/veh	3.8	0.0	0.4	0.1	0.0	0.0	4.3	1.6	0.0	4.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.9	0.2	0.0	0.0	1.8	3.3	0.0	7.6	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	0.0	21.1	20.6	0.0	0.0	30.5	6.9	0.0	17.3	0.0	9.9
LnGrp LOS	C	A	C	C	A	A	C	A	A	B	A	A
Approach Vol, veh/h		242			14			795			901	
Approach Delay, s/veh		26.4			20.6			10.4			15.7	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		46.0		16.0	11.0	35.0		16.0				
Change Period (Y+Rc), s		6.5		5.5	6.0	* 6.5		5.5				
Max Green Setting (Gmax), s		39.5		10.5	5.0	* 30		10.5				
Max Q Clear Time (g_c+I1), s		13.5		14.5	5.9	20.9		14.5				
Green Ext Time (p_c), s		3.1		0.0	0.0	2.8		0.0				

Intersection Summary


















HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings

3: NH 125 & Brock Street/Restaurant Driveway

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	155	5	70	4	3	107	608	2	683	189
Future Volume (vph)	155	5	70	4	3	107	608	2	683	189
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	NA	Perm
Protected Phases		4			8	5	2		6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	16.5	16.0	16.0	16.0
Total Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	46.0	35.0	35.0	35.0
Total Split (%)	25.8%	25.8%	25.8%	25.8%	25.8%	17.7%	74.2%	56.5%	56.5%	56.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		3.5	3.5		3.5	4.0	4.5		3.5	3.5
Lead/Lag						Lead		Lag	Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)		12.0	12.0		12.0	7.8	42.0		33.6	33.6
Actuated g/C Ratio		0.19	0.19		0.19	0.13	0.68		0.54	0.54
v/c Ratio		0.63	0.17		0.04	0.53	0.53		0.69	0.21
Control Delay		35.2	0.8		15.9	36.3	7.1		16.4	2.1
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay		35.2	0.8		15.9	36.3	7.1		16.4	2.1
LOS		D	A		B	D	A		B	A
Approach Delay		24.7			15.9		11.5		13.3	
Approach LOS		C			B		B		B	

Intersection Summary

Cycle Length: 62

Actuated Cycle Length: 62

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 14.0





Intersection Capacity Utilization 94.0%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service F

Splits and Phases: 3: NH 125 & Brock Street/Restaurant Driveway

			
Ø2 (R)	Ø5	Ø6 (R)	Ø4
46 s	11 s	35 s	16 s
			Ø8
			16 s

Queues

3: NH 125 & Brock Street/Restaurant Driveway




















	→	↘	←	↙	↑	↓	↗
Lane Group	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	168	74	14	119	676	706	195
v/c Ratio	0.63	0.17	0.04	0.53	0.53	0.69	0.21
Control Delay	35.2	0.8	15.9	36.3	7.1	16.4	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	0.8	15.9	36.3	7.1	16.4	2.1
Queue Length 50th (ft)	57	0	2	43	109	195	0
Queue Length 95th (ft)	#128	0	15	#104	175	317	26
Internal Link Dist (ft)	204		294		1001	1243	
Turn Bay Length (ft)				375			
Base Capacity (vph)	278	460	333	225	1278	1039	963
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.16	0.04	0.53	0.53	0.68	0.20

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

3: NH 125 & Brock Street/Restaurant Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	6	85	5	4	7	130	741	0	2	833	230
Future Volume (veh/h)	189	6	85	5	4	7	130	741	0	2	833	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1900	1900	1885	1870
Adj Flow Rate, veh/h	199	6	89	6	4	8	144	823	0	2	859	237
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	0	0	1	2
Cap, veh/h	281	5	325	77	58	46	203	1306	0	59	971	817
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.11	0.69	0.00	0.52	0.52	0.52
Sat Flow, veh/h	827	25	1610	0	288	230	1795	1885	0	1	1883	1585
Grp Volume(v), veh/h	205	0	89	18	0	0	144	823	0	861	0	237
Grp Sat Flow(s), veh/h/ln	852	0	1610	518	0	0	1795	1885	0	1884	0	1585
Q Serve(g_s), s	0.0	0.0	2.9	0.0	0.0	0.0	4.8	14.7	0.0	0.0	0.0	5.3
Cycle Q Clear(g_c), s	12.5	0.0	2.9	12.5	0.0	0.0	4.8	14.7	0.0	25.2	0.0	5.3
Prop In Lane	0.97		1.00	0.33		0.44	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	286	0	325	182	0	0	203	1306	0	1029	0	817
V/C Ratio(X)	0.72	0.00	0.27	0.10	0.00	0.00	0.71	0.63	0.00	0.84	0.00	0.29
Avail Cap(c_a), veh/h	286	0	325	182	0	0	203	1306	0	1029	0	817
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.8	0.0	20.9	20.6	0.0	0.0	26.5	5.2	0.0	13.4	0.0	8.6
Incr Delay (d2), s/veh	8.3	0.0	0.5	0.2	0.0	0.0	11.0	2.3	0.0	8.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	1.0	0.2	0.0	0.0	2.5	4.0	0.0	10.6	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	0.0	21.4	20.8	0.0	0.0	37.5	7.5	0.0	21.4	0.0	9.5
LnGrp LOS	C	A	C	C	A	A	D	A	A	C	A	A
Approach Vol, veh/h		294			18			967			1098	
Approach Delay, s/veh		30.2			20.8			12.0			18.9	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		47.5		16.0	11.0	36.5		16.0				
Change Period (Y+Rc), s		6.5		5.5	6.0	* 6.5		5.5				
Max Green Setting (Gmax), s		39.5		10.5	5.0	* 30		10.5				
Max Q Clear Time (g_c+I1), s		16.7		14.5	6.8	27.2		14.5				
Green Ext Time (p_c), s		4.1		0.0	0.0	1.3		0.0				

Intersection Summary


















HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings

3: NH 125 & Brock Street/Restaurant Driveway

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	189	6	85	5	4	130	741	2	833	230
Future Volume (vph)	189	6	85	5	4	130	741	2	833	230
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	NA	Perm
Protected Phases		4			8	5	2		6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	16.5	16.0	16.0	16.0
Total Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	46.0	35.0	35.0	35.0
Total Split (%)	25.8%	25.8%	25.8%	25.8%	25.8%	17.7%	74.2%	56.5%	56.5%	56.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		3.5	3.5		3.5	4.0	4.5		3.5	3.5
Lead/Lag						Lead		Lag	Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)		12.2	12.2		12.2	7.4	41.8		31.4	31.4
Actuated g/C Ratio		0.20	0.20		0.20	0.12	0.67		0.51	0.51
v/c Ratio		0.76	0.20		0.06	0.68	0.65		0.91	0.26
Control Delay		44.6	1.6		16.1	45.7	9.0		29.9	2.2
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay		44.6	1.6		16.1	45.7	9.0		29.9	2.2
LOS		D	A		B	D	A		C	A
Approach Delay		31.6			16.1		14.5		23.9	
Approach LOS		C			B		B		C	

Intersection Summary

Cycle Length: 62

Actuated Cycle Length: 62

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 21.0






Intersection LOS: C

Intersection Capacity Utilization 110.8%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 3: NH 125 & Brock Street/Restaurant Driveway

	Ø2 (R)						Ø4
46 s						16 s	
	Ø5		Ø6 (R)				Ø8
11 s		35 s				16 s	

Queues

3: NH 125 & Brock Street/Restaurant Driveway




















	→	↘	←	↙	↑	↓	↗
Lane Group	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	205	89	18	144	823	861	237
v/c Ratio	0.76	0.20	0.06	0.68	0.65	0.91	0.26
Control Delay	44.6	1.6	16.1	45.7	9.0	29.9	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	1.6	16.1	45.7	9.0	29.9	2.2
Queue Length 50th (ft)	73	0	3	53	148	271	0
Queue Length 95th (ft)	#168	6	18	#132	247	#507	28
Internal Link Dist (ft)	204		294		1001	1243	
Turn Bay Length (ft)				375			
Base Capacity (vph)	275	458	324	212	1267	954	920
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.19	0.06	0.68	0.65	0.90	0.26

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

3: NH 125 & Brock Street/Restaurant Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	5	90	4	3	6	141	608	0	2	683	202
Future Volume (veh/h)	162	5	90	4	3	6	141	608	0	2	683	202
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1900	1900	1885	1870
Adj Flow Rate, veh/h	171	5	95	4	3	7	157	676	0	2	704	208
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	0	0	1	2
Cap, veh/h	271	5	325	75	62	62	203	1262	0	59	926	780
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.11	0.67	0.00	0.49	0.49	0.49
Sat Flow, veh/h	778	23	1610	0	306	306	1795	1885	0	1	1883	1585
Grp Volume(v), veh/h	176	0	95	14	0	0	157	676	0	706	0	208
Grp Sat Flow(s),veh/h/ln	801	0	1610	612	0	0	1795	1885	0	1884	0	1585
Q Serve(g_s), s	0.0	0.0	3.1	0.0	0.0	0.0	5.3	11.5	0.0	0.0	0.0	4.8
Cycle Q Clear(g_c), s	12.5	0.0	3.1	12.5	0.0	0.0	5.3	11.5	0.0	18.9	0.0	4.8
Prop In Lane	0.97		1.00	0.29		0.50	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	276	0	325	198	0	0	203	1262	0	985	0	780
V/C Ratio(X)	0.64	0.00	0.29	0.07	0.00	0.00	0.77	0.54	0.00	0.72	0.00	0.27
Avail Cap(c_a), veh/h	276	0	325	198	0	0	203	1262	0	1015	0	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.3	0.0	21.0	20.5	0.0	0.0	26.7	5.3	0.0	12.8	0.0	9.2
Incr Delay (d2), s/veh	4.8	0.0	0.5	0.1	0.0	0.0	16.9	1.6	0.0	4.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	1.1	0.2	0.0	0.0	3.0	3.3	0.0	7.6	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	21.5	20.6	0.0	0.0	43.6	6.9	0.0	17.3	0.0	10.0
LnGrp LOS	C	A	C	C	A	A	D	A	A	B	A	B
Approach Vol, veh/h		271			14			833			914	
Approach Delay, s/veh		27.1			20.6			13.8			15.6	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		46.0		16.0	11.0	35.0		16.0				
Change Period (Y+Rc), s		6.5		5.5	6.0	* 6.5		5.5				
Max Green Setting (Gmax), s		39.5		10.5	5.0	* 30		10.5				
Max Q Clear Time (g_c+I1), s		13.5		14.5	7.3	20.9		14.5				
Green Ext Time (p_c), s		3.1		0.0	0.0	2.9		0.0				

Intersection Summary


















HCM 6th Ctrl Delay	16.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings

3: NH 125 & Brock Street/Restaurant Driveway

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	162	5	90	4	3	141	608	2	683	202
Future Volume (vph)	162	5	90	4	3	141	608	2	683	202
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	NA	Perm
Protected Phases		4			8	5	2		6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	16.5	16.0	16.0	16.0
Total Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	46.0	35.0	35.0	35.0
Total Split (%)	25.8%	25.8%	25.8%	25.8%	25.8%	17.7%	74.2%	56.5%	56.5%	56.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		3.5	3.5		3.5	4.0	4.5		3.5	3.5
Lead/Lag						Lead		Lag	Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)		12.1	12.1		12.1	8.1	41.9		30.7	30.7
Actuated g/C Ratio		0.20	0.20		0.20	0.13	0.68		0.50	0.50
v/c Ratio		0.66	0.21		0.04	0.67	0.53		0.76	0.23
Control Delay		36.5	2.0		15.8	44.3	7.2		19.2	2.2
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay		36.5	2.0		15.8	44.3	7.2		19.2	2.2
LOS		D	A		B	D	A		B	A
Approach Delay		24.4			15.8		14.1		15.3	
Approach LOS		C			B		B		B	

Intersection Summary

Cycle Length: 62

Actuated Cycle Length: 62

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 16.1






Intersection LOS: B

Intersection Capacity Utilization 94.4%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: NH 125 & Brock Street/Restaurant Driveway

 Ø2 (R)										 Ø4
46 s										16 s
 Ø5	 Ø6 (R)									 Ø8
11 s	35 s									16 s

Queues

3: NH 125 & Brock Street/Restaurant Driveway




















	→	↘	←	↙	↑	↓	↗
Lane Group	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	176	95	14	157	676	706	208
v/c Ratio	0.66	0.21	0.04	0.67	0.53	0.76	0.23
Control Delay	36.5	2.0	15.8	44.3	7.2	19.2	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	2.0	15.8	44.3	7.2	19.2	2.2
Queue Length 50th (ft)	61	0	2	59	109	195	0
Queue Length 95th (ft)	#137	9	15	#147	175	317	27
Internal Link Dist (ft)	204		294		1001	1243	
Turn Bay Length (ft)				375			
Base Capacity (vph)	280	462	334	234	1275	955	906
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.21	0.04	0.67	0.53	0.74	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

3: NH 125 & Brock Street/Restaurant Driveway

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	6	105	5	4	7	164	741	0	2	833	243
Future Volume (veh/h)	196	6	105	5	4	7	164	741	0	2	833	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1900	1900	1885	1870
Adj Flow Rate, veh/h	206	6	111	6	4	8	182	823	0	2	859	251
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	0	0	1	2
Cap, veh/h	281	5	325	77	58	46	203	1307	0	59	972	818
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.11	0.69	0.00	0.52	0.52	0.52
Sat Flow, veh/h	828	24	1610	0	288	230	1795	1885	0	1	1883	1585
Grp Volume(v), veh/h	212	0	111	18	0	0	182	823	0	861	0	251
Grp Sat Flow(s), veh/h/ln	852	0	1610	518	0	0	1795	1885	0	1884	0	1585
Q Serve(g_s), s	0.0	0.0	3.7	0.0	0.0	0.0	6.2	14.7	0.0	0.0	0.0	5.6
Cycle Q Clear(g_c), s	12.5	0.0	3.7	12.5	0.0	0.0	6.2	14.7	0.0	25.2	0.0	5.6
Prop In Lane	0.97		1.00	0.33		0.44	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	286	0	325	182	0	0	203	1307	0	1030	0	818
V/C Ratio(X)	0.74	0.00	0.34	0.10	0.00	0.00	0.90	0.63	0.00	0.84	0.00	0.31
Avail Cap(c_a), veh/h	286	0	325	182	0	0	203	1307	0	1030	0	818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.9	0.0	21.2	20.6	0.0	0.0	27.1	5.2	0.0	13.4	0.0	8.6
Incr Delay (d2), s/veh	9.8	0.0	0.6	0.2	0.0	0.0	36.5	2.3	0.0	8.0	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	1.3	0.2	0.0	0.0	4.5	4.0	0.0	10.6	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	0.0	21.8	20.8	0.0	0.0	63.7	7.5	0.0	21.4	0.0	9.6
LnGrp LOS	D	A	C	C	A	A	E	A	A	C	A	A
Approach Vol, veh/h		323			18			1005			1112	
Approach Delay, s/veh		31.0			20.8			17.7			18.7	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		47.5		16.0	11.0	36.5		16.0				
Change Period (Y+Rc), s		6.5		5.5	6.0	* 6.5		5.5				
Max Green Setting (Gmax), s		39.5		10.5	5.0	* 30		10.5				
Max Q Clear Time (g_c+I1), s		16.7		14.5	8.2	27.2		14.5				
Green Ext Time (p_c), s		4.1		0.0	0.0	1.3		0.0				

Intersection Summary


















HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings

3: NH 125 & Brock Street/Restaurant Driveway

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	196	6	105	5	4	164	741	2	833	243
Future Volume (vph)	196	6	105	5	4	164	741	2	833	243
Turn Type	Perm	NA	Perm	Perm	NA	Prot	NA	Perm	NA	Perm
Protected Phases		4			8	5	2		6	
Permitted Phases	4		4	8				6		6
Detector Phase	4	4	4	8	8	5	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	16.5	16.0	16.0	16.0
Total Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	46.0	35.0	35.0	35.0
Total Split (%)	25.8%	25.8%	25.8%	25.8%	25.8%	17.7%	74.2%	56.5%	56.5%	56.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	3.0	2.0	2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)		3.5	3.5		3.5	4.0	4.5		3.5	3.5
Lead/Lag						Lead		Lag	Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)		12.3	12.3		12.3	7.7	41.7		31.0	31.0
Actuated g/C Ratio		0.20	0.20		0.20	0.12	0.67		0.50	0.50
v/c Ratio		0.78	0.24		0.06	0.82	0.65		0.92	0.27
Control Delay		46.3	3.0		16.1	59.9	9.1		31.7	2.2
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay		46.3	3.0		16.1	59.9	9.1		31.7	2.2
LOS		D	A		B	E	A		C	A
Approach Delay		31.4			16.1		18.3		25.0	
Approach LOS		C			B		B		C	

Intersection Summary

Cycle Length: 62

Actuated Cycle Length: 62

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 23.0










Intersection LOS: C

Intersection Capacity Utilization 111.2%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 3: NH 125 & Brock Street/Restaurant Driveway

								
Ø2 (R)			Ø6 (R)			Ø4		
46 s			35 s			16 s		
Ø5						Ø8		
11 s						16 s		

Queues

3: NH 125 & Brock Street/Restaurant Driveway

	→	↘	←	↙	↑	↓	↗
Lane Group	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	212	111	18	182	823	861	251
v/c Ratio	0.78	0.24	0.06	0.82	0.65	0.92	0.27
Control Delay	46.3	3.0	16.1	59.9	9.1	31.7	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	3.0	16.1	59.9	9.1	31.7	2.2
Queue Length 50th (ft)	76	0	3	69	148	271	0
Queue Length 95th (ft)	#176	16	18	#174	247	#507	29
Internal Link Dist (ft)	204		294		1001	1243	
Turn Bay Length (ft)				375			
Base Capacity (vph)	275	458	324	222	1264	954	927
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.24	0.06	0.82	0.65	0.90	0.27

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Pernaw & Company, Inc

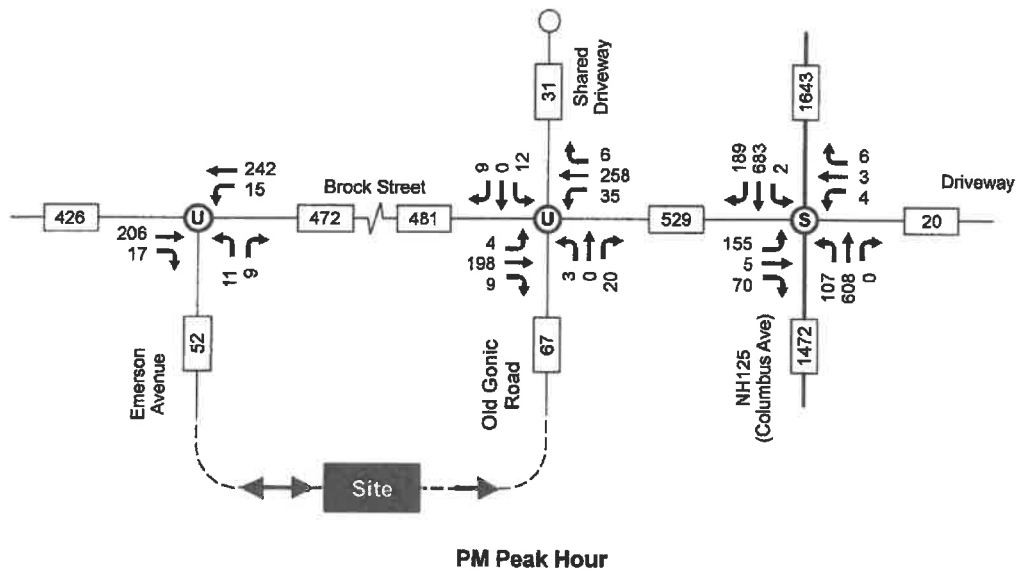
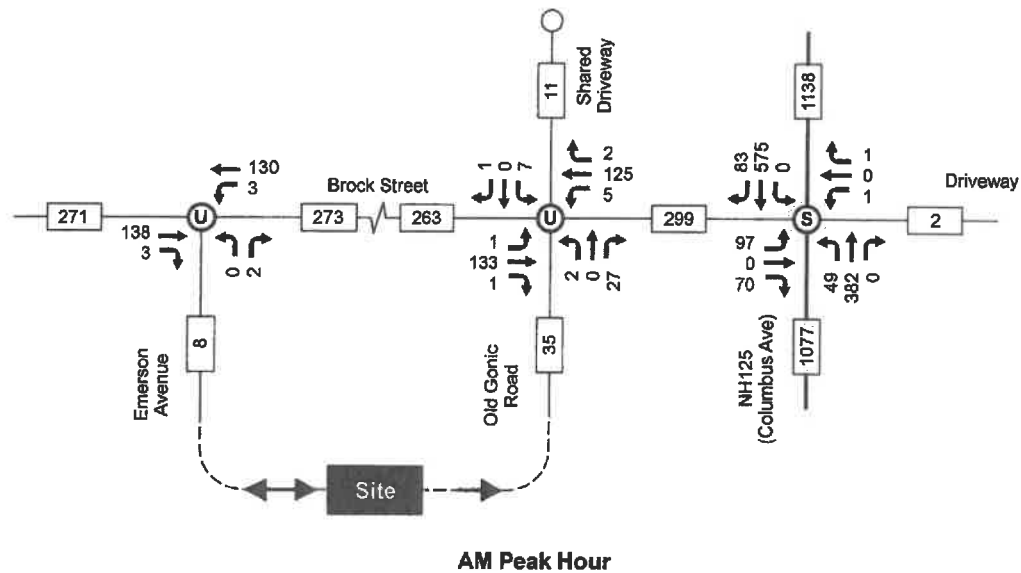


Figure 3

Supplemental 2023 No-Build Traffic Volumes (w/o Covid Adjustment)

Traffic Impact Assessment, Proposed Residential Development, Rochester, New Hampshire

Pernaw & Company, Inc

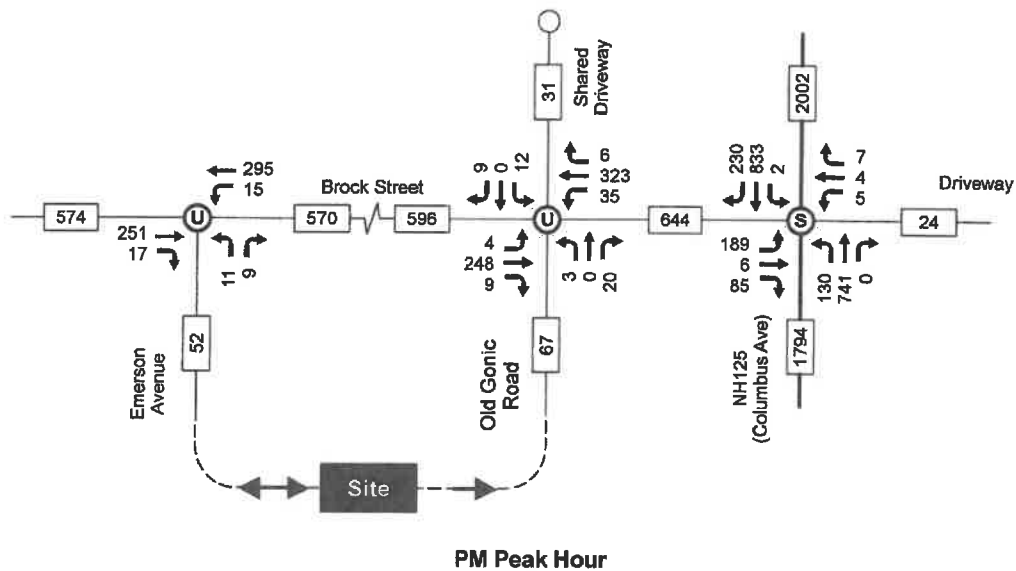
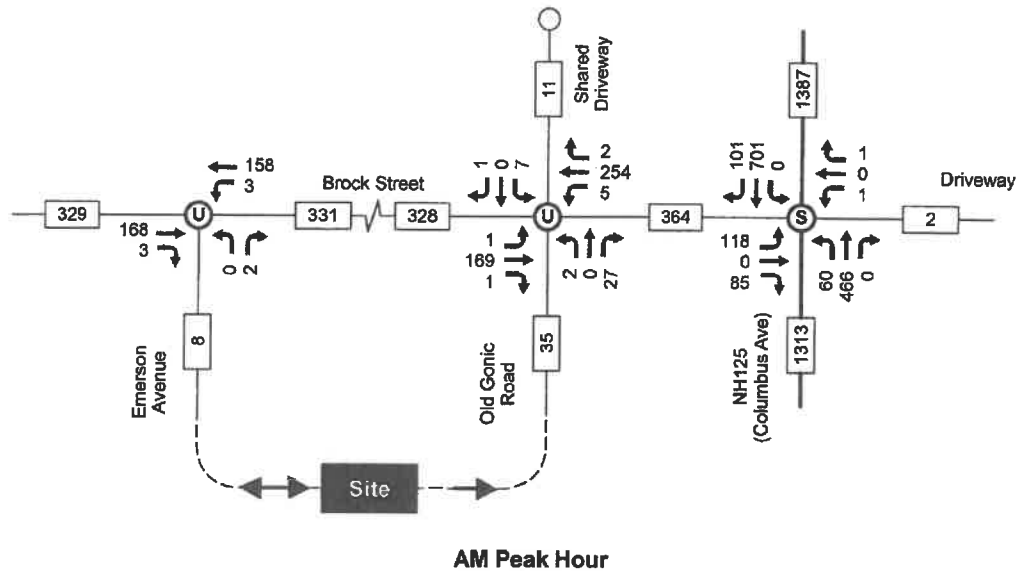
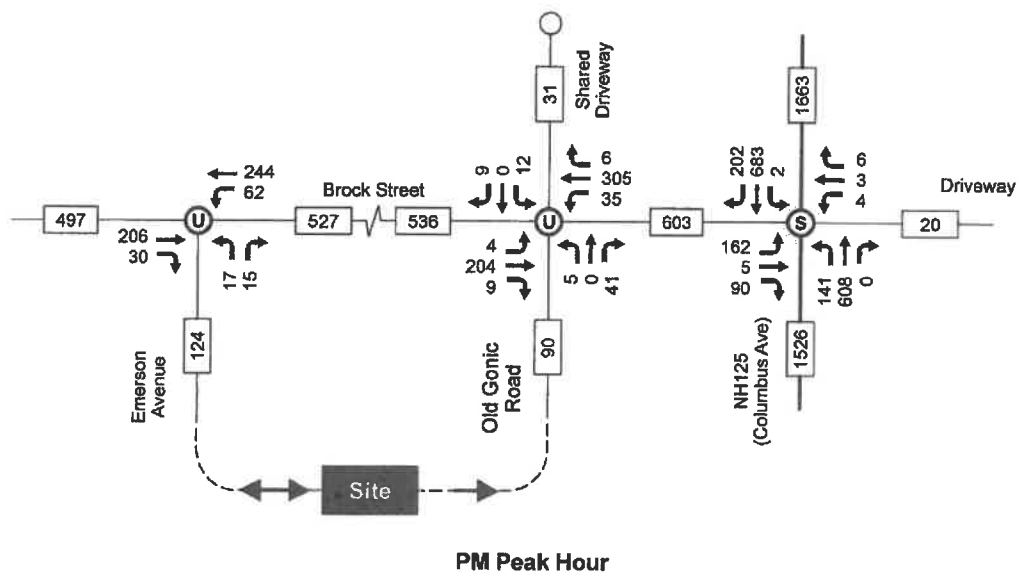
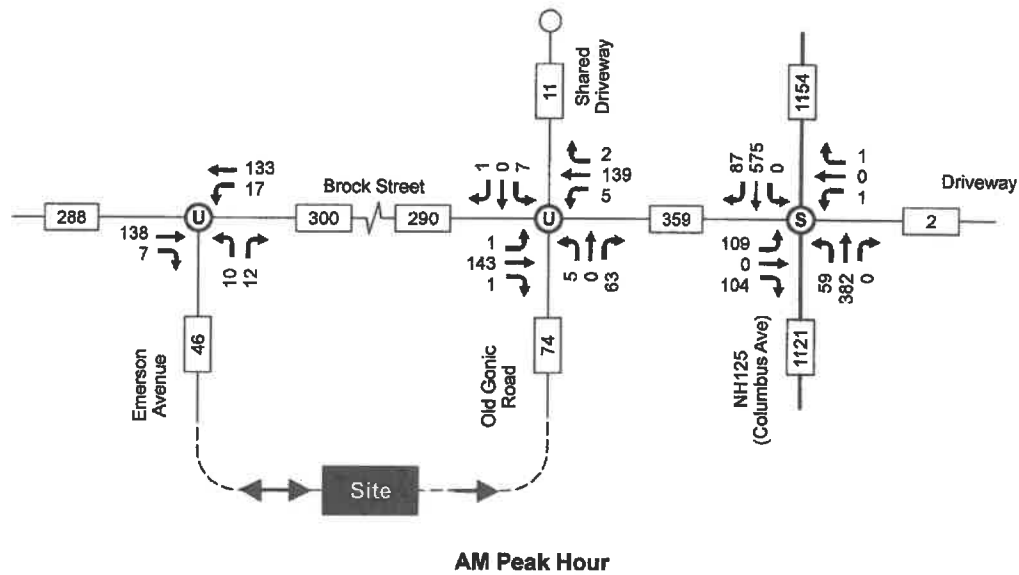


Figure 4

Supplemental 2033 No-Build Traffic Volumes (w/o Covid Adjustment)

Traffic Impact Assessment, Proposed Residential Development, Rochester, New Hampshire

Pernaw & Company, Inc



2112A (Rev. 4/4/22)

NORTH

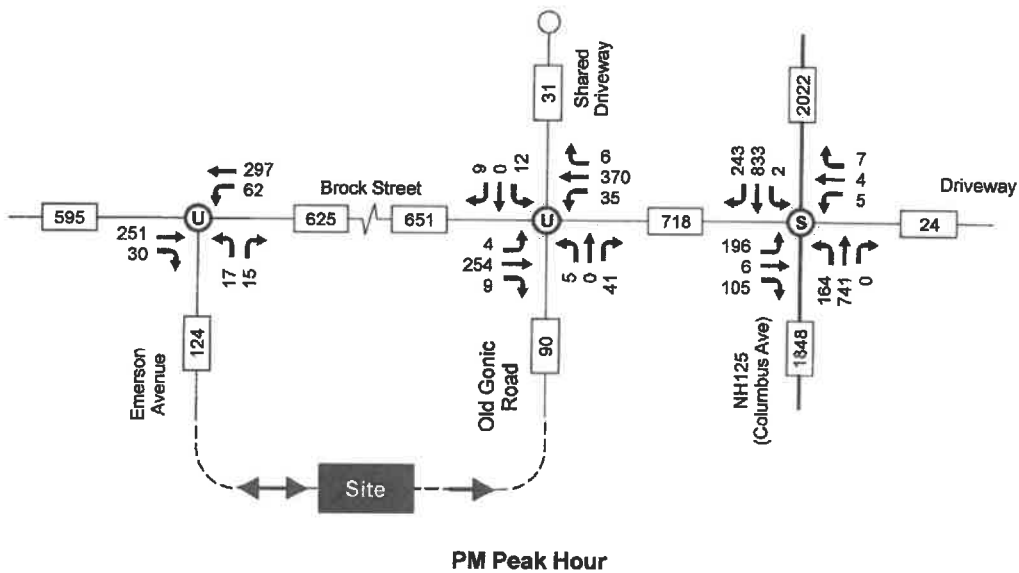
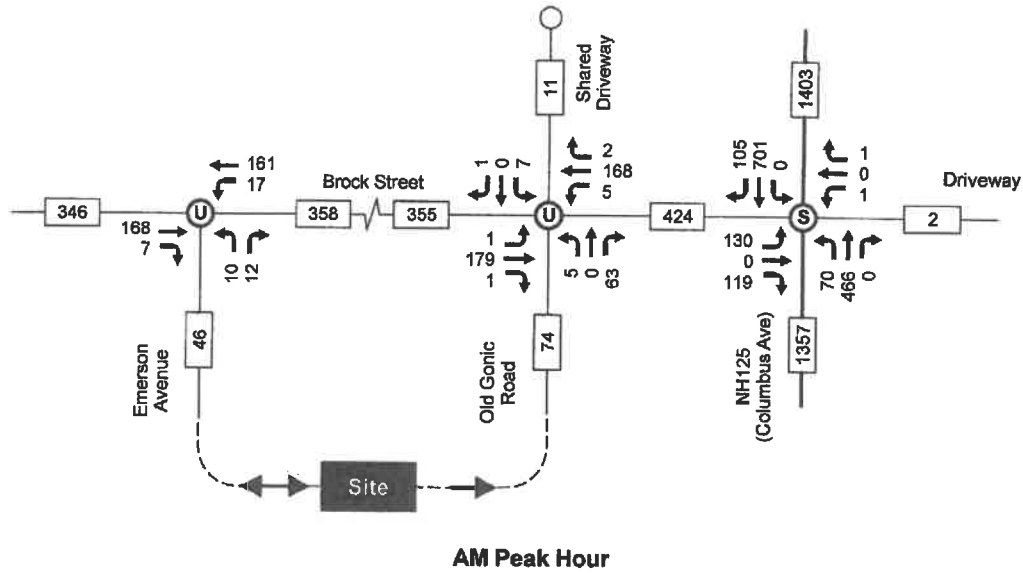


Figure 5

Supplemental 2023 Build Traffic Volumes (w/o Covid Adjustment)

Traffic Impact Assessment, Proposed Residential Development, Rochester, New Hampshire

Pernaw & Company, Inc



2112A (Rev. 4/4/22)

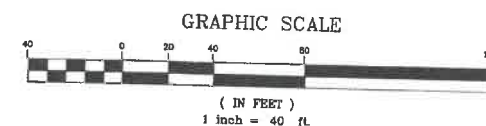
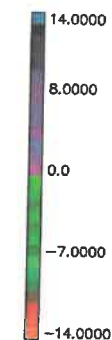
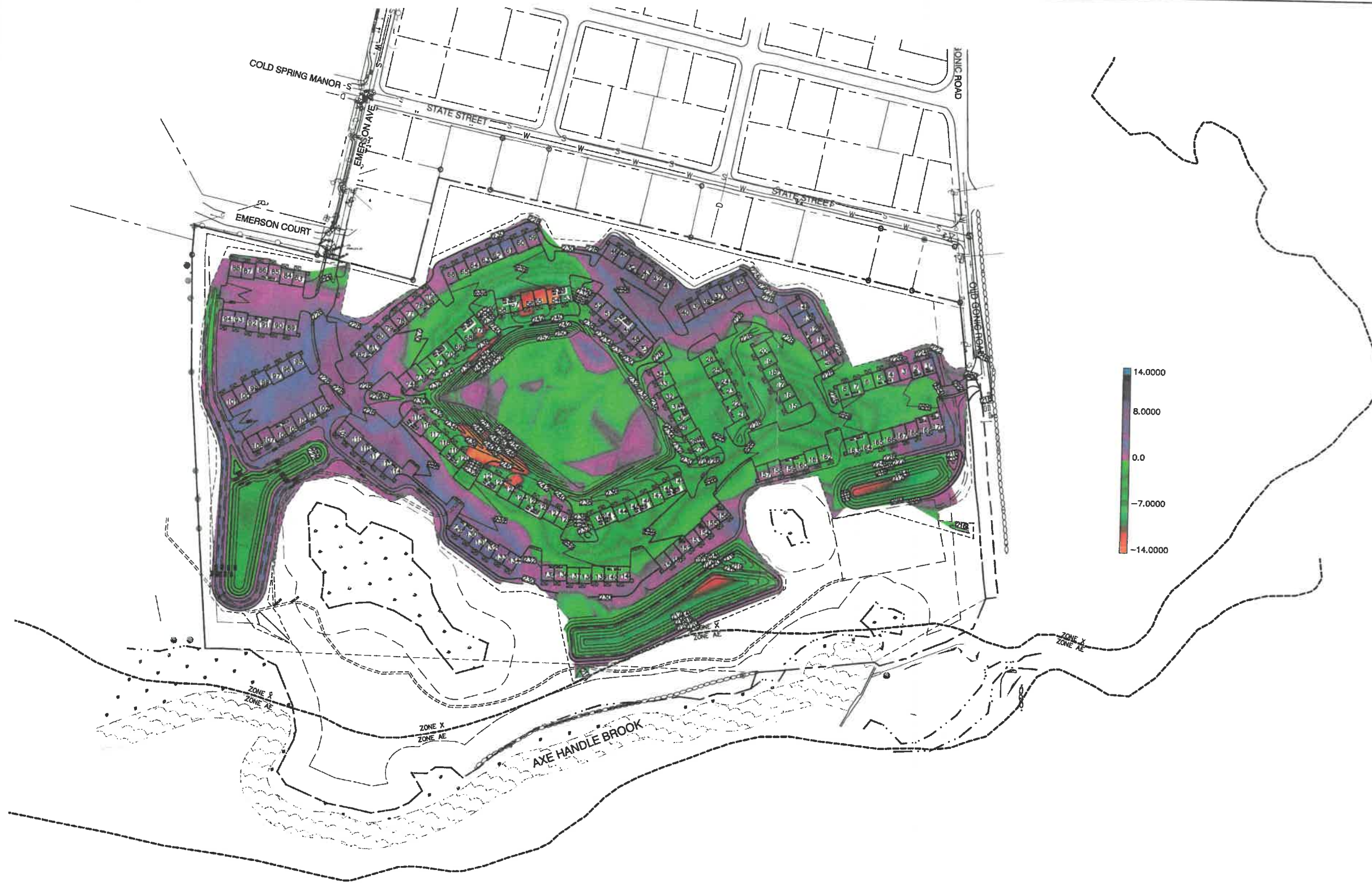
NORTH



Figure 6

Supplemental 2033 Build Traffic Volumes (w/o Covid Adjustment)

Traffic Impact Assessment, Proposed Residential Development, Rochester, New Hampshire



Design: JAC Draft: LAZ Date: 04/29/21
 Checked: JAC Scale: AS NOTED Project No.: 21090
 Drawing Name: 21090-PLAN.dwg
 THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.



REV.	DATE	REVISION	BY
2	4/11/22	REMOVED ROAD	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

J/B Jones & Beach Engineers, Inc.
 Designed and Produced in NH
 85 Portsmouth Ave. PO Box 218 Stratham, NH 03885
 Civil Engineering Services
 603-772-4746 FAX: 603-772-0227
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **CUT/FILL PLAN**
 Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
 Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

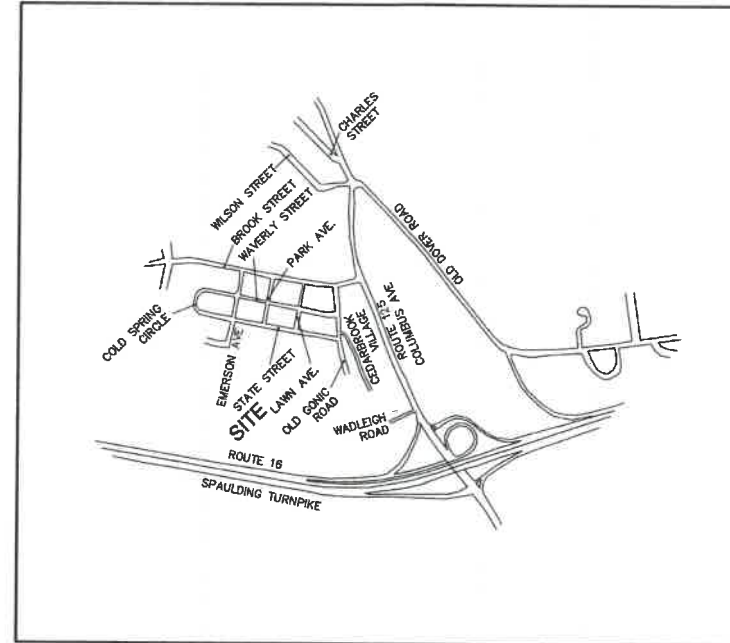
DRAWING No.
C/F
 SHEET 1 OF 1
 JBE PROJECT NO. 21090

PROPOSED SITE PLAN "BAYBERRY COMMONS"

TAX MAP 131, LOT 10 19 OLD GONIC ROAD, ROCHESTER, NH

GENERAL LEGEND

EXISTING	PROPOSED	DESCRIPTION
---	---	PROPERTY LINES
---	---	SETBACK LINES
---	---	CENTERLINE
---	---	FRESHWATER WETLANDS LINE
---	---	TIDAL WETLANDS LINE
---	---	STREAM CHANNEL
---	---	TREE LINE
---	---	STONEWALL
---	---	BARBED WIRE
---	---	FENCE
---	---	STOCKADE FENCE
---	---	SOIL BOUNDARY
---	---	AQUIFER PROTECTION LINE
---	---	FLOOD PLAIN LINE
---	---	ZONELINE
---	---	EASEMENT
---	---	MAJOR CONTOUR
---	---	MINOR CONTOUR
---	---	EDGE OF PAVEMENT
---	---	VERTICAL GRANITE CURB
---	---	SLOPE GRANITE CURB
---	---	CAPE COD BERM
---	---	POURED CONCRETE CURB
---	---	ORGANIC FILTER BERM
---	---	DRAINAGE LINE
---	---	SEWER LINE
---	---	SEWER FORCE MAIN
---	---	GAS LINE
---	---	WATER LINE
---	---	WATER SERVICE
---	---	OVERHEAD ELECTRIC
---	---	UNDERGROUND ELECTRIC
---	---	GUARDRAIL
---	---	UNDERDRAIN
---	---	FIRE PROTECTION LINE
---	---	THRUST BLOCK
---	---	IRON PIPE/IRON ROD
---	---	DRILL HOLE
---	---	IRON ROD/DRILL HOLE
---	---	STONE/GRANITE BOUND
---	---	SPOT GRADE
---	---	PAVEMENT SPOT GRADE
---	---	CURB SPOT GRADE
---	---	BENCHMARK (TBM)
---	---	DOUBLE POST SIGN
---	---	SINGLE POST SIGN
---	---	WELL
---	---	TEST PIT
---	---	FAILED TEST PIT
---	---	MONITORING WELL
---	---	PERC TEST
---	---	PHOTO LOCATION
---	---	TREES AND BUSHES
---	---	UTILITY POLE
---	---	LIGHT POLES
---	---	DRAIN MANHOLE
---	---	SEWER MANHOLE
---	---	HYDRANT
---	---	WATER GATE
---	---	WATER SHUT OFF
---	---	REDUCER
---	---	SINGLE GRATE CATCH BASIN
---	---	DOUBLE GRATE CATCH BASIN
---	---	TRANSFORMER
---	---	CULVERT W/ WINGWALLS
---	---	CULVERT W/ FLARED END SECTION
---	---	CULVERT W/ STRAIGHT HEADWALL
---	---	STONE CHECK DAM
---	---	DRAINAGE FLOW DIRECTION
---	---	4K SEPTIC AREA
---	---	WETLAND IMPACT
---	---	VEGETATED FILTER STRIP
---	---	RIPRAP
---	---	OPEN WATER
---	---	FRESHWATER WETLANDS
---	---	TIDAL WETLANDS
---	---	STABILIZED CONSTRUCTION ENTRANCE
---	---	CONCRETE
---	---	GRAVEL
---	---	SNOW STORAGE
---	---	RETAINING WALL



LOCUS MAP
SCALE 1" = 2000'

SHEET INDEX

CS	COVER SHEET
OVEX	EXISTING CONDITIONS OVERVIEW PLAN
C1-C4	EXISTING CONDITIONS PLAN
DM1	DEMOLITION PLAN
OVR5	OVERVIEW SITE PLAN
C5-C8	SITE PLANS
OVRG	OVERVIEW GRADING PLAN
C9-C11	GRADING AND DRAINAGE PLAN
OVRU	OVERVIEW UTILITY PLAN
U1-U2	UTILITY PLAN
L1-L2	LANDSCAPE PLAN
L3-L4	LIGHTING PLAN
P1-P5	ROAD PLAN AND PROFILE
P6-P10	SEWER PROFILE
OFF-1-5	OFFSITE IMPROVEMENT PLANS
D1-D4	DETAIL SHEETS
E1	EROSION AND SEDIMENT CONTROL DETAILS
PH	PHASING PLAN

CIVIL ENGINEER / SURVEYOR
JONES & BEACH ENGINEERS, INC.
85 PORTSMOUTH AVENUE
PO BOX 219
STRATHAM, NH 03885
(603) 772-4746
CONTACT: JOSEPH CORONATI
EMAIL: JCORONATI@JONESANDBEACH.COM

TRAFFIC ENGINEER
STEPHEN G. PERNAW & COMPANY, INC.
P.O. BOX 1821
CONCORD, NH 03302
(603) 731-8500
CONTACT: STEPHEN G. PERNAW
EMAIL: SGP@PERNAW.COM

WETLAND CONSULTANT
GOVE ENVIRONMENTAL SERVICES, INC.
8 CONTINENTAL DR., BUILDING 2, UNIT H
EXETER, NH 03833-7526
(603) 778-0644
CONTACT: JAMES GOVE
EMAIL: JGOVE@GESINC.BIZ

LANDSCAPE DESIGNER
LM LAND DESIGN, LLC
11 SOUTH ROAD
BRENTWOOD, NH 03833
(603) 770-7728
CONTACT: LISE McNAUGHTON
LMLANDDESIGN@GMAIL.COM

WATER AND SEWER
ROCHESTER DEPARTMENT OF PUBLIC WORKS
45 OLD DOVER ROAD
ROCHESTER, NH 03867
(603) 332-4096
CONTACT: MICHAEL BEZANSON, P.E.

ELECTRIC
EVERSOURCE ENERGY
74 OLD DOVER ROAD
ROCHESTER, NH 03867
(603) 555-5334
CONTACT: MARK BOUCHER

TELEPHONE
CONSOLIDATED COMMUNICATIONS
1575 GREENLAND ROAD
GREENLAND, NH 03840
(603) 427-5525
CONTACT: JOE CONSIDINE

CABLE TV
COMCAST COMMUNICATION CORPORATION
334-B CALEF HIGHWAY
EPPING, NH 03042-2325
(603) 679-5695

NATURAL GAS
UNITIL SERVICE CORP.
325 WEST ROAD
PORTSMOUTH, NH 03801
(603) 294-5261
MACLEAND@UNITIL.COM

PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03882

TOTAL LOT AREA
1,309,895 SQ. FT. ±
30.07 ACRES ±

APPROVED - ROCHESTER, NH
PLANNING BOARD

DATE:

Design: JAC Draft: LAZ Date: 04/29/21
Checked: JAC Scale: AS NOTED Project No.: 21090
Drawing Name: 21090-PLAN1.dwg
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

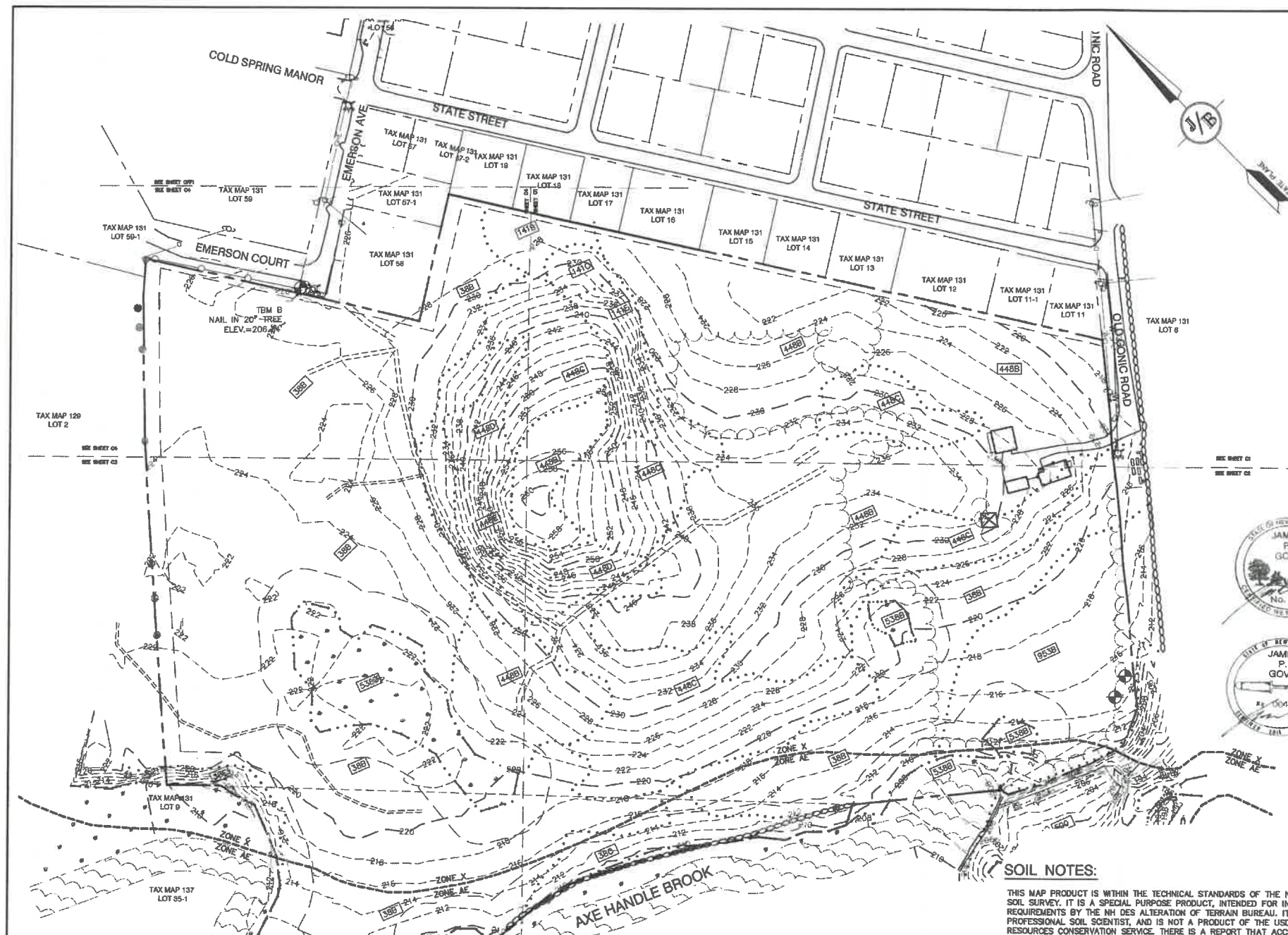


REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
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0	11/23/21	ISSUED FOR REVIEW	LAZ

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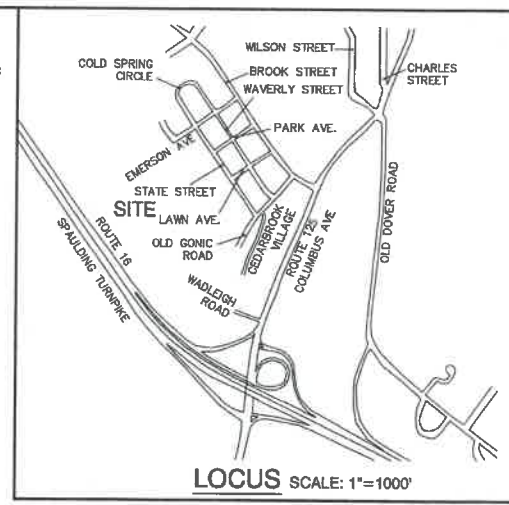
Plan Name: **COVER SHEET**
Project: **BAYBERRY COMMONS
19 OLD GONIC ROAD, ROCHESTER, NH**
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148**

DRAWING No.
CS
SHEET 1 OF 48
JBE PROJECT NO. 21090



EXISTING CONDITIONS NOTES:

- UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM FIELD OBSERVATION AND THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. NEITHER JONES & BEACH ENGINEERS, INC. NOR ANY OF THEIR EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 1-888-DIG-SAFE (1-888-344-7233).
- VERTICAL DATUM: NAVD 88. HORIZONTAL DATUM: STATE PLANE COORDINATES.
- THE SUBJECT PARCEL IS PARTIALLY LOCATED WITHIN AN AREA HAVING A ZONE AE DESIGNATION BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON FLOOD INSURANCE RATE MAP NO. 3301700210, WITH EFFECTIVE DATE OF MAY 17, 2005 FOR COMMUNITY PANEL NO. 211 OF 405 IN ROCKINGHAM COUNTY, STATE OF NEW HAMPSHIRE, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
- THE LIMITS OF JURISDICTIONAL WETLANDS WERE DELINEATED BY JAMES GOVE DURING SPRING, 2021 IN ACCORDANCE WITH THE FOLLOWING GUIDANCE DOCUMENTS:
 - THE CORPS OF ENGINEERS FEDERAL MANUAL FOR IDENTIFYING AND DELINEATING JURISDICTIONAL WETLANDS.
 - THE NORTH CENTRAL & NORTHEAST REGIONAL SUPPLEMENT TO THE FEDERAL MANUAL.
 - THE CURRENT VERSION OF THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, AS PUBLISHED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION AND/OR THE CURRENT VERSION OF THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, AS PUBLISHED BY THE USDA, NRCS, AS APPROPRIATE.
 - THE CURRENT NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS, AS PUBLISHED BY THE US FISH AND WILDLIFE SERVICE.
- WETLAND BOUNDARIES AND CONSTRUCTION LIMITS ARE TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION.



ABUTTERS:

131/08-1 LAURA GATCHELL 122/02 ROMAN CATHOLIC BISHOP FINANCE AND REAL ESTATE OFFICE 153 ASH ST MANCHESTER, NH 03104	131/08-2 KATHRYN SOUSA 30 CEDARBROOK AVE ROCHESTER, NH 03867 2885/818 (3/30/2004)	131/08-3 ANNA & ROBERT PEREIRA 1C CEDARBROOK AVE ROCHESTER, NH 03867 4487/437 (8/22/17)	131/08-4 AMY SCHAEFFER 10 CEDARBROOK AVE ROCHESTER, NH 03867 4387/484 (5/28/16)	131/08-5 NATHANIEL PRIEBE 1E CEDARBROOK AVE ROCHESTER, NH 03867 4655/785 (5/19/19)	131/08-6 DAVID PETTIS 1F CEDARBROOK AVE ROCHESTER, NH 03867 4658/411 (5/30/19)	131/08-7 KORIN LAMBERT 10 CEDARBROOK AVE ROCHESTER, NH 03867 3631/316 (3/27/08)	131/08-8 CAROLINE LEWIS 1H CEDARBROOK AVE ROCHESTER, NH 03867 4587/717 (8/30/18)	131/08-9 STEPHEN & PATRICIA TALOR 2A CEDARBROOK AVE ROCHESTER, NH 03867 2382/536 (10/15/01)	131/08-10 BRIAN HERBERT 2B CEDARBROOK AVE ROCHESTER, NH 03867 3587/428 (8/23/07)	131/08-11 BLAIR TANUHIHART 20 CEDARBROOK AVE ROCHESTER, NH 03867 428/512 (5/7/15)	131/08-12 GEORGE GATCOMB 2D CEDARBROOK AVE ROCHESTER, NH 03867 3328/879 (1/28/06)	131/08-13 RAYMOND KING 2E CEDARBROOK AVE ROCHESTER, NH 03867 3474/0028 (12/18/06)	131/08-14 OAK BLUFF REALTY LLC 242 CENTRAL AVE DOVER, NH 03820 3953/549 (8/8/11)	131/08-15 SEAN JACKSON 3A CEDARBROOK AVE ROCHESTER, NH 03867 4581/844 (6/28/18)	131/08-16 ELIZABETH HANSON 3B CEDARBROOK AVE ROCHESTER, NH 03867 4457/435 (2/8/17)	131/08-17 ALICIA MANSON 3C CEDARBROOK AVE ROCHESTER, NH 03867 4623/411 (11/27/18)	131/08-18 EVANS FAMILY TRUST 3D CEDARBROOK AVE ROCHESTER, NH 03867 4757/588 (4/9/20)	131/08-19 JESSICA STENER 3E CEDARBROOK AVE ROCHESTER, NH 03867 4487/437 (8/22/17)	131/08-20 SEAN CONNORS 3F CEDARBROOK AVE ROCHESTER, NH 03867 4598/273 (8/27/18)	131/08-21 SRABH GAMBRONE 4A CEDARBROOK AVE ROCHESTER, NH 03867 3018/408 (8/20/04)	131/08-22 BRIAN MCQUADE 274 CEDAR ST SEASIDE, NJ 08258 3811/711 (1/13/11)	131/08-23 KORIN DESAULT 4C CEDARBROOK AVE ROCHESTER, NH 03867 3838/932 (8/27/11)	131/08-24 PATRICK RILEY 4D CEDARBROOK AVE ROCHESTER, NH 03867 2400/678 (10/30/01)	131/08-25 FRANK PRATT 4E CEDARBROOK AVE ROCHESTER, NH 03867 2818/46 (12/11/03)	131/08-26 TIMUR GAMROV 4F CEDARBROOK AVE ROCHESTER, NH 03867 4298/903 (5/28/15)	131/08-27 HAYDEN GRACE KRISTY 5A CEDARBROOK AVE ROCHESTER, NH 03867 4684/777 (6/19/19)	131/08-28 LINDA LACHANCE 5B CEDARBROOK AVE ROCHESTER, NH 03867 3477/108 (12/21/06)	131/08-29 MICHAEL WALSH 5C CEDARBROOK AVE ROCHESTER, NH 03867 4705/183 (10/30/18)	131/08-30 SANDRA FOURNIER 5D CEDARBROOK AVE ROCHESTER, NH 03867 2942/181 (2/11/04)	131/08-31 OLD DOG PROPERTIES 5E CEDARBROOK AVE DOVER, NH 03820 4027/158 (5/29/12)	131/08-32 ELIZABETH RANKS 235 LONG POND ROAD DANVILLE, NH 03819 3719/768 (3/10/08)	131/08-33 DEBRA WELCH 6A CEDARBROOK AVE ROCHESTER, NH 03867 4645/275 (4/3/18)	131/08-34 JOSEPH ZUROWSKIS 6B CEDARBROOK AVE ROCHESTER, NH 03867 2110/732 (5/26/1988)	131/08-35 ONOGOWARSDO MULJAWATI 6C CEDARBROOK AVE ROCHESTER, NH 03867 4312/138 (7/24/15)	131/08-36 JOSHUA SWINGER 6D CEDARBROOK AVE ROCHESTER, NH 03867 4656/1035 (9/21/21)	131/08-37 LINDSEY NICKLESS 6E CEDARBROOK AVE ROCHESTER, NH 03867 4814/926 (10/1/20)	131/08-38 LOUISE BOUCHER 6F CEDARBROOK AVE ROCHESTER, NH 03867 1977/283 (1/11/1988)	131/08-39 ERIN FERLAND 7A CEDARBROOK AVE ROCHESTER, NH 03867 4963/870 (10/5/21)	131/08-40 ROBIN GARY 7B CEDARBROOK AVE ROCHESTER, NH 03867 4541/860 (1/4/18)	131/08-41 MELANIE HOLT 7C CEDARBROOK AVE ROCHESTER, NH 03867 4925/479 (10/28/17)	131/08-42 KOLIA FOREMAN 7D CEDARBROOK AVE ROCHESTER, NH 03867 4658/850 (5/28/19)	131/08-43 ALEXANDRA WICKMAN 7E CEDARBROOK AVE ROCHESTER, NH 03867 4765/858 (5/28/20)	131/08-44 MICHAEL GROVETT 7F CEDARBROOK AVE ROCHESTER, NH 03867 4715/120 (12/2/19)	131/08-45 KAREN BAILEY 7G CEDARBROOK AVE ROCHESTER, NH 03867 3876/380 (10/27/10)	131/08-46 MICHAEL GROVETT 7H CEDARBROOK AVE ROCHESTER, NH 03867 4762/125 (5/7/20)	131/08-47 PHILIP LANG 8C CEDARBROOK AVE ROCHESTER, NH 03867 4581/877 (6/28/18)	131/08-48 ROBIN LORD 8D CEDARBROOK AVE ROCHESTER, NH 03867 4923/182 (8/22/21)	131/08-49 MARSSA CORBIN 8E CEDARBROOK AVE ROCHESTER, NH 03867 4645/275 (4/3/18)	131/08-50 JUSTIN MANTEUFFEL 8F CEDARBROOK AVE ROCHESTER, NH 03867 3522/214 (4/2/07)	131/08-51 JEFFREY BOOMER 8G CEDARBROOK AVE ROCHESTER, NH 03867 4576/729 (6/17/18)	131/08-52 KIMBERLY MAUSER 8H CEDARBROOK AVE ROCHESTER, NH 03867 3935/182 (6/28/11)	131/08-53 HOMER WOODBURY 8I CEDARBROOK AVE ROCHESTER, NH 03867 3165/820 (3/31/05)	131/08-54 JAMES SAULNIER 8J CEDARBROOK AVE ROCHESTER, NH 03867 4579/933 (6/28/18)	131/08-55 ERIN FERLAND 9A CEDARBROOK AVE ROCHESTER, NH 03867 4963/870 (10/5/21)	131/08-56 ROBIN GARY 9B CEDARBROOK AVE ROCHESTER, NH 03867 4541/860 (1/4/18)	131/08-57 UNAMBIEN ESPERANCE 9C CEDARBROOK AVE ROCHESTER, NH 03867 4980/181 (9/23/21)	131/08-58 DANIEL DEGRANDPRE 9D CEDARBROOK AVE ROCHESTER, NH 03867 4658/850 (5/28/19)	131/08-59 RALPH STILLINGS 9E CEDARBROOK AVE ROCHESTER, NH 03867 4925/479 (10/28/17)	131/08-60 DENISE SELFE 9F CEDARBROOK AVE ROCHESTER, NH 03867 4765/858 (5/28/20)	131/08-61 RICHARD DUSETT 9G CEDARBROOK AVE ROCHESTER, NH 03867 1304/258 (4/15/1987)	131/08-62 JOHN COLECCIA 9H CEDARBROOK AVE ROCHESTER, NH 03867 4762/125 (5/7/20)	131/08-63 TARA CANFIELD 9I CEDARBROOK AVE ROCHESTER, NH 03867 2443/74 (1/10/02)	131/08-64 MOORE FAMILY REV. TRUST 21 RIDGEWOOD ROAD ELIOT, MAINE 03903 4923/182 (8/22/21)	131/08-65 LYNNE PARADIS 11C CEDARBROOK AVE ROCHESTER, NH 03867 3120/280 (12/21/04)	131/08-66 GRANT REALTY TRUST ATTN: DAVID PAULIN 242 CENTRAL AVE DOVER, NH 03820 4178/531 (11/9/13)	131/08-67 LISA KIMBALL 11E CEDARBROOK AVE ROCHESTER, NH 03867 4589/936 (8/2/18)	131/08-68 CHARLIE WHITEHOUSE 11F CEDARBROOK AVE ROCHESTER, NH 03867 2417/55 (11/25/01)	131/08-69 CHRISTINE SENECHAL 12A CEDARBROOK AVE ROCHESTER, NH 03867 4428/130 (10/25/16)	131/08-70 STEPHEN SMALL 12B CEDARBROOK AVE ROCHESTER, NH 03867 2543/142 (7/11/02)	131/08-71 SARAH BENTON 12C CEDARBROOK AVE ROCHESTER, NH 03867 4573/310 (6/5/18)	131/08-72 ROBERT THOMAS 12D CEDARBROOK AVE ROCHESTER, NH 03867 4680/875 (8/14/19)	131/08-73 SUSAN WELSH 12E CEDARBROOK AVE ROCHESTER, NH 03867 3032/39 (7/2/04)	131/08-74 MELINDA RIGGER REV. TRUST 12F CEDARBROOK AVE ROCHESTER, NH 03867 4304/153 (6/25/15)	131/08-75 CITY OF ROCHESTER 31 WAKEFIELD ST ROCHESTER, NH 03867 3371/144 (4/10/06)	131/08-76 SUSS LLC 120 WASHINGTON ST SUITE 302 ROCHESTER, NH 03867 4605/408 (8/27/18)
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PLAN REFERENCES:

- "CEDARBROOK VILLAGE CONDOMINIUM DEVELOPMENT BOUNDARY SURVEY FOR ROUNHOUSE REALTY TRUST ROCHESTER, NH"; PREPARED BY BERRY CONIST, CO., INC.; DATED APRIL 23, 1986; RECORDED AT THE STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN P23-058.
- "PLAN OF LAND PARCEL NO. 5 TAX ASSESSOR'S MAP NO 8 NEW HAMPSHIRE ROUTE 125 PREPARED FOR JEN-SCOTT REALTY, INC.; PREPARED BY GYLWORKS ENGINEERS AND SURVEYORS; DATED NOVEMBER 8, 1988 RECORDED AT THE STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN P37A-028.
- "PROPOSED SUBDIVISION AND LOT LINE REVISION FOR ROCHESTER HOUSING AUTHORITY COLD SPRING MANOR BROOK STREET ROCHESTER, NH"; PREPARED BY BERRY SURVEYING & ENGINEERING; DATED FEBRUARY 13, 2001; RECORDED AT THE STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN P61-056.
- "PROPOSED SUBDIVISION LAND OF THOMAS & JODI REMINGTON 15 OLD GONIC ROAD ROCHESTER, NH"; PREPARED BY BERRY SURVEYING & ENGINEERING; DATED AUGUST 17, 2005; RECORDED AT THE STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN P81-0036.
- "SUBDIVISION PLAN TAX MAP 131, LOT 26 WAVERLY ST./ OLD GONIC RD. ROCHESTER NH FOR BAYONNE CONSTRUCTION COMPANY, INC.; PREPARED BY NORWAY PLAINS ASSOCIATES, INC.; DATED JULY 25, 2006; RECORDED AT THE STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN P86-0100.
- "SUBDIVISION PLAN TAX MAP 131, LOT 57 STATE STREET & EMERSON COURT ROCHESTER NH FOR RUNNING WITH HAMMERS, LLC; PREPARED BY NORWAY PLAINS ASSOCIATES, INC.; DATED OCTOBER 17, 2007; RECORDED AT THE STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN P92-014.
- "ROCHESTER HEIGHTS ROCHESTER, NH A.H. CHAPMAN LAND CO"; PREPARED BY E.H. SHEFFIELD; DATED JULY 1920; RECORDED AT THE STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN #19 POCKET #10 FOLDER #3.

CERTIFICATION:

I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEEDS BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 903.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

THIS SURVEY CONFORMS TO A CATEGORY 1 CONDITION 1 SURVEY AS DEFINED IN SECTION 4.1 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

I CERTIFY THAT THIS SURVEY PLAN 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.



DAVID M. COLLIER, LLS 892
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

DATE: 4/12/2022

SOIL NOTES:

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP.

THE SITE SPECIFIC SOIL SURVEY (SSSS) WAS PRODUCED JULY 21, 2021, AND WAS PREPARED BY JAMES P. GOVE, CSS # 004, GOVE ENVIRONMENTAL SERVICES, INC. THE SURVEY AREA IS LOCATED AT 19 OLD GONIC ROAD, ROCHESTER, NH.

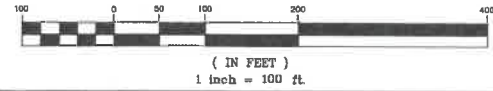
SOILS WERE IDENTIFIED WITH THE NEW HAMPSHIRE STATE-WIDE NUMERICAL SOILS LEGEND, USDA NRCS, DURHAM, NH. ISSUE # 10, JANUARY 2011. THE NUMERIC LEGEND WAS AMENDED TO IDENTIFY THE CORRECT SOIL COMPONENTS OF THE COMPLEX.

HYDROLOGIC SOIL GROUP FROM KSAT VALUES FOR NEW HAMPSHIRE SOILS, SOCIETY OF SOIL SCIENTISTS OF NEW ENGLAND, SPECIAL PUBLICATION NO. 5, SEPTEMBER, 2009.

SSSS SYM.	SSSS MAP NAME	HISS SYM.	HYDRO. SOIL GRP.
953	BOXFORD (SOMEWHAT POORLY DRAINED)	453	C
38	ELDRIDGE LOAMY SAND	343	C
141	HOLLIS-ROCK OUTCROP-CHATHFIELD	238	D
448	SOUTWATE FINE SANDY LOAM	323	C
5	OLDORIENTS, LOAMY	762	N/A
538	SQUAMSCOTT LOAMY SAND	543	C

SLOPE PHASE:
0-8% B
8-15% C
15-25% D
25%+ E

GRAPHIC SCALE



Design: JAC Draft: LAZ Date: 04/29/21
Checked: JAC Scale: AS NOTED Project No.: 21090
Drawing Name: 21090-PLAN.dwg

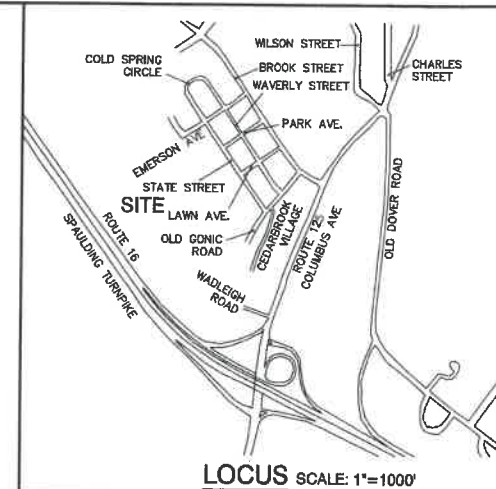
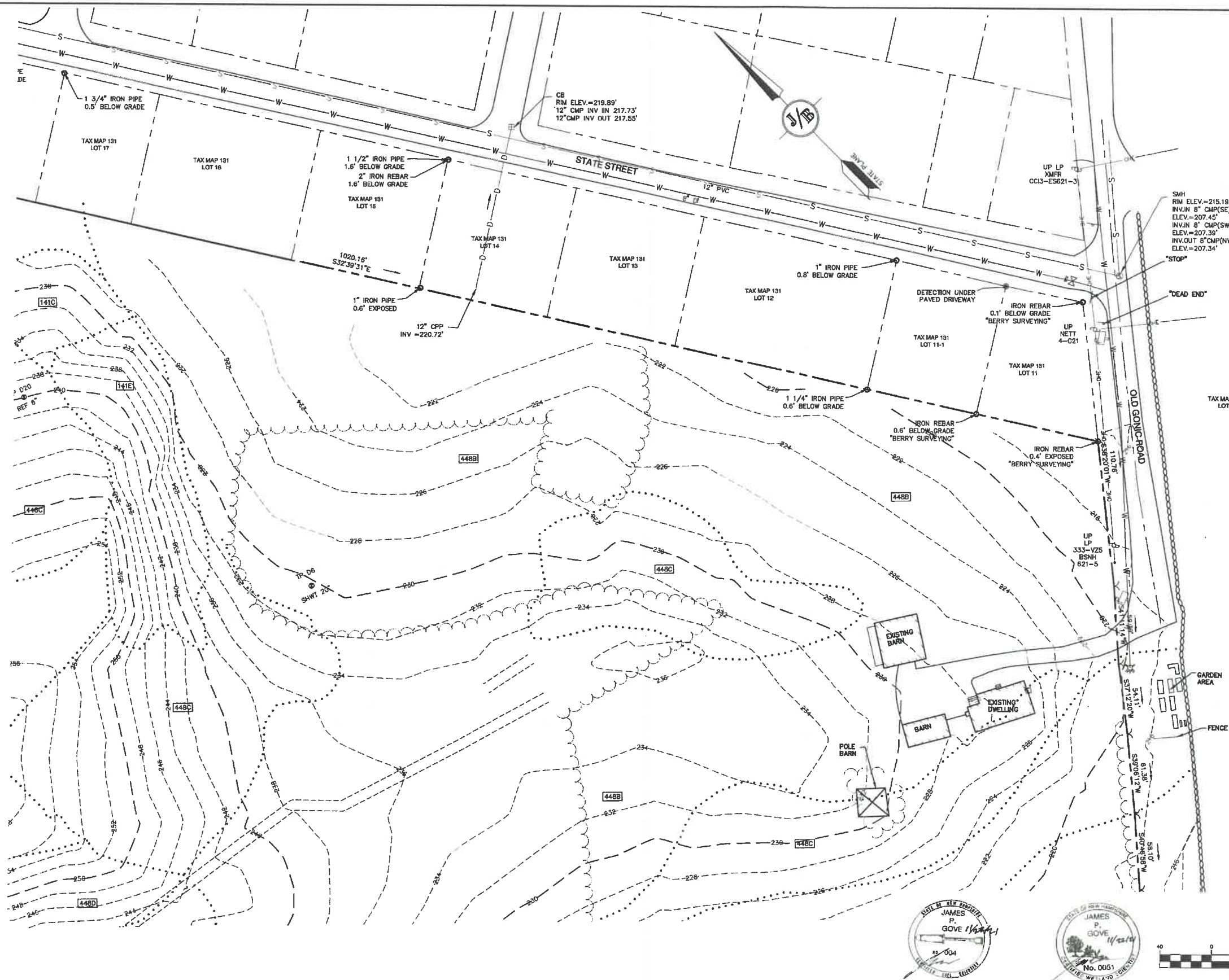
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. Civil Engineering Services 603-772-4746
PO Box 219 FAX: 603-772-0227
Stratham, NH 03885 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: EXISTING CONDITIONS PLAN
Project: BAYBERRY COMMONS
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.
OVR
SHEET 2 OF 48
JBE PROJECT NO. 21090



SOIL NOTES:

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP. THE SITE SPECIFIC SOIL SURVEY (SSSS) WAS PRODUCED JULY 21, 2021, AND WAS PREPARED BY JAMES P. GOVE, CSS # 004, GOVE ENVIRONMENTAL SERVICES, INC. THE SURVEY AREA IS LOCATED AT 19 OLD GONIC ROAD, ROCHESTER, NH.

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HYDROLOGIC SOIL GROUP FROM KSAT VALUES FOR NEW HAMPSHIRE SOILS, SOCIETY OF SOIL SCIENTISTS OF NEW ENGLAND, SPECIAL PUBLICATION NO. 5, SEPTEMBER, 2009.

SSSS SYM.	SSSS MAP NAME	HISS SYM.	HYDRO. SOIL-GRP.
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38	ELDRIDGE LOAMY SAND	343	C
141	HOLLIS-ROCK OUTCROP-CHATFIELD	228	D
448	SORTUATE FINE SANDY LOAM	323	C
5	QUODORTHEIS, LOAMY	782	N/A
538	SQUAMSCOTT LOAMY SAND	543	C

SLOPE PHASE:
0-8% B 8-15% C 15-25% D
25%+ E

CERTIFICATION:

I CERTIFY THAT THIS PLAT WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEEDS BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 503.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

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DAVID M. COLLIER, LLS 892
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

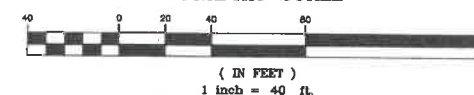
DATE: 4/16/22

PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,309,695 SQ. FT. ±
30.07 ACRES ±

GRAPHIC SCALE



Design: JAC Draft: LAZ Date: 04/29/21
Checked: JAC Scale: AS NOTED Project No.: 21090
Drawing Name: 21090-PLAN.dwg

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REV.	DATE	REVISION	BY
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3	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

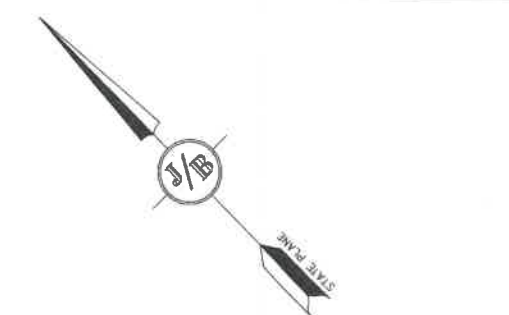
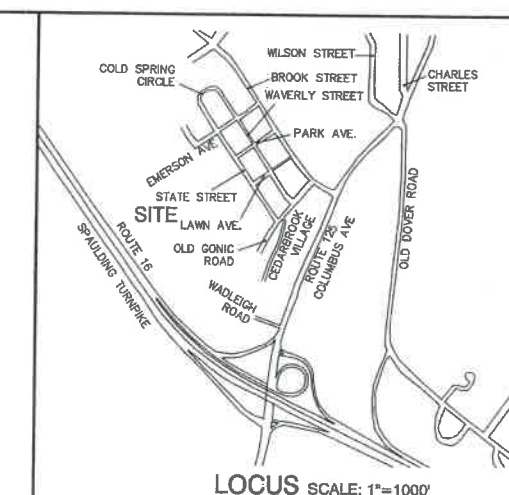
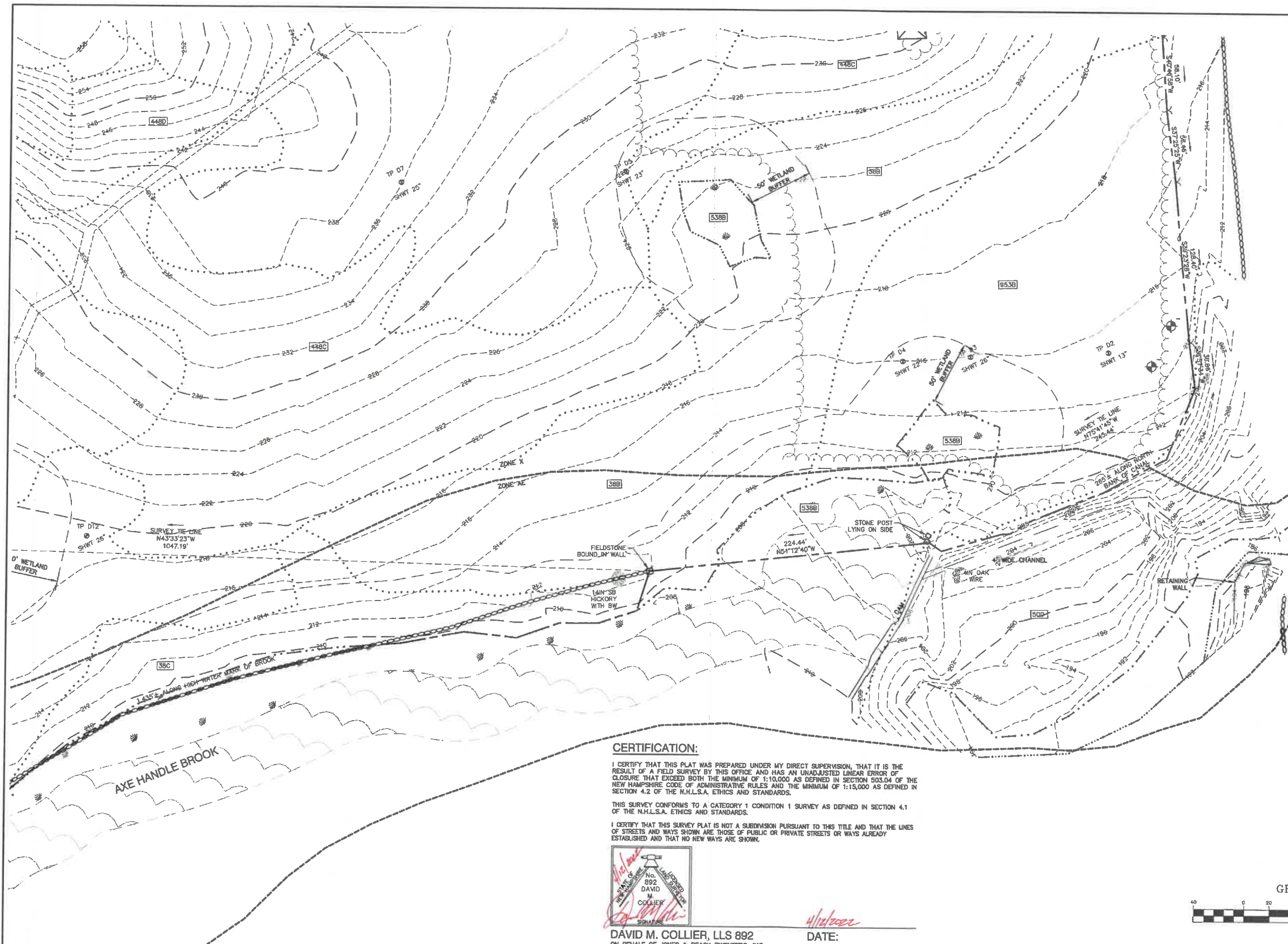
J/B Jones & Beach Engineers, Inc.
Designed and Produced in NH
85 Portsmouth Ave. Civil Engineering Services 603-772-4746
PO Box 219 FAX: 603-772-0227
Stratham, NH 03865 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **EXISTING CONDITIONS PLAN**
Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.

C1

SHEET 8 OF 45
JBE PROJECT NO. 21090



SOIL NOTES:

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5	OLDORIENTS, LOAMY	762	N/A
538	SQUAMSCOTT LOAMY SAND	543	C

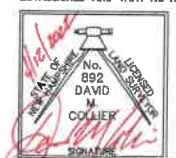
SLOPE PHASE:
0-8% B 8-15% C 15-25% D
25%+ E

CERTIFICATION:

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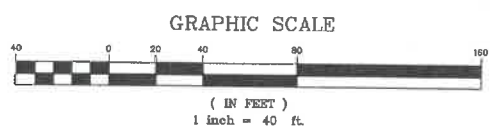
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DAVID M. COLLIER, LLS 892
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

DATE: 4/16/2022



PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,309,696 SQ. FT. ±
30.07 ACRES ±

Design: JAC Draft: LAZ Date: 04/29/21
Checked: JAC Scale: AS NOTED Project No.: 21090
Drawing Name: 21090-PLAN.dwg
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REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

Designed and Produced in NH

J/B Jones & Beach Engineers, Inc.

85 Portsmouth Ave. PO Box 219 Stratham, NH 03885

603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **EXISTING CONDITIONS PLAN**

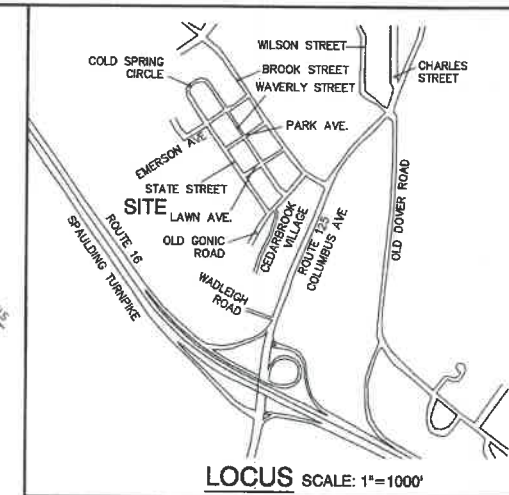
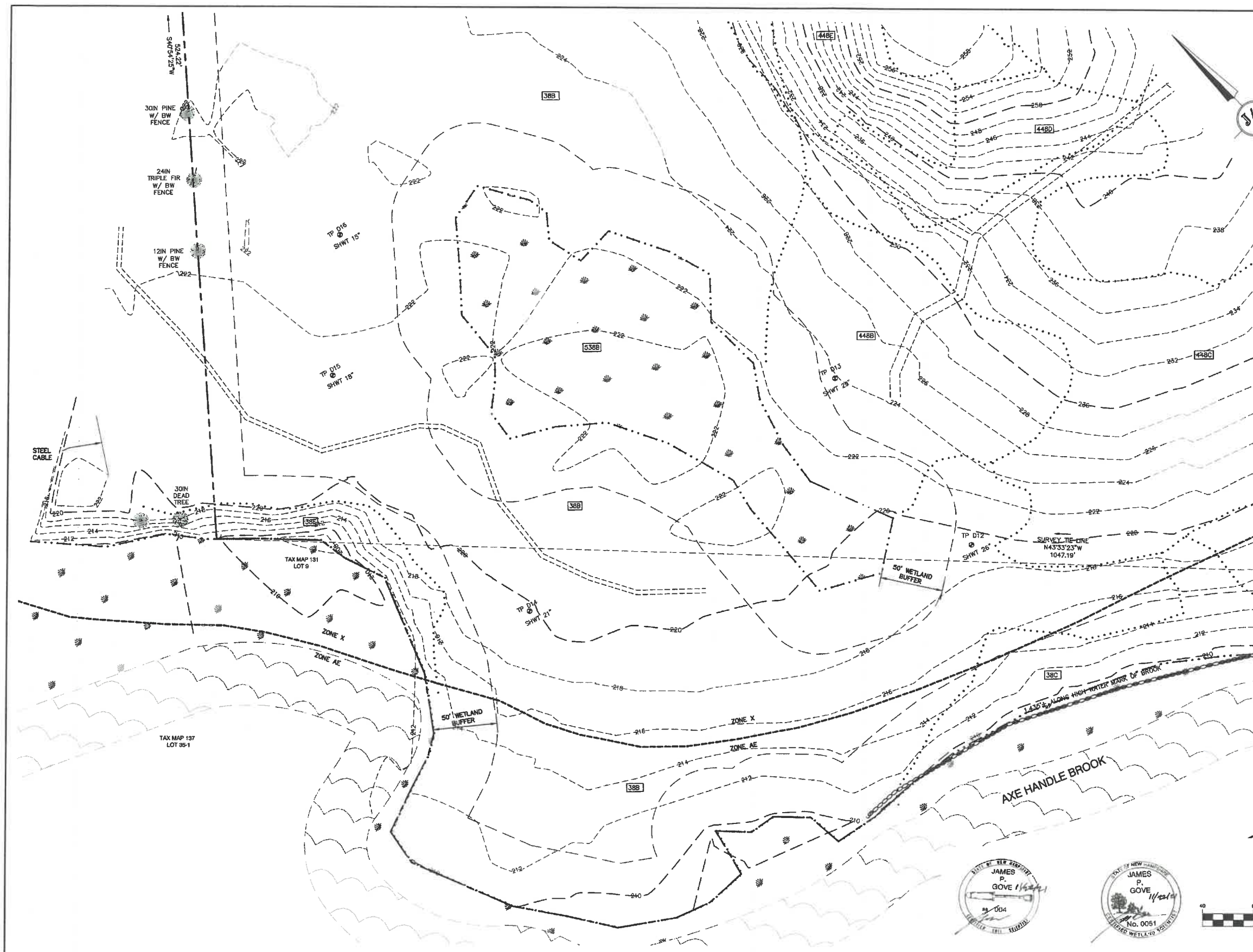
Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH

Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.

C2

SHEET 4 OF 45
JBE PROJECT NO. 21090



SOIL NOTES:

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP.

THE SITE SPECIFIC SOIL SURVEY (SSSS) WAS PRODUCED JULY 21, 2021, AND WAS PREPARED BY JAMES P. GOVE, CSS # 004, GOVE ENVIRONMENTAL SERVICES, INC. THE SURVEY AREA IS LOCATED AT 19 OLD GONIC ROAD, ROCHESTER, NH.

SOILS WERE IDENTIFIED WITH THE NEW HAMPSHIRE STATE-WIDE NUMERICAL SOILS LEGEND, USDA NRCS, DURHAM, NH, ISSUE # 10, JANUARY 2011. THE NUMERIC LEGEND WAS AMENDED TO IDENTIFY THE CORRECT SOIL COMPONENTS OF THE COMPLEX.

HYDROLOGIC SOIL GROUP FROM KSAT VALUES FOR NEW HAMPSHIRE SOILS, SOCIETY OF SOIL SCIENTISTS OF NEW ENGLAND, SPECIAL PUBLICATION NO. 5, SEPTEMBER, 2009.

SSSS SYM.	SSSS MAP NAME	HISS SYM.	HYDRO. SOIL GRP.
953	BOXFORD (SOMEWHAT POORLY DRAINED)	453	C
38	ELDRIDGE LOAMY SAND	343	C
141	HOLLIS-ROCK OUTCROP-CHATFIELD	228	D
448	SITUATE FINE SANDY LOAM	323	C
5	OUDDORTHEMETS, LOAMY	762	N/A
538	SQUAMSCOTT LOAMY SAND	543	C

SLOPE PHASE:
0-8% B 8-15% C 15-25% D
25%+ E

CERTIFICATION:

I CERTIFY THAT THIS PLAT WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEEDS BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 503.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

THIS SURVEY CONFORMS TO A CATEGORY 1 CONDITION 1 SURVEY AS DEFINED IN SECTION 4.1 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

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.



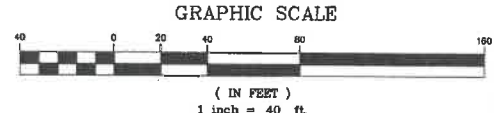
DAVID M. COLLIER, LLS 892
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

DATE:

PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03882

TOTAL LOT AREA
1,309,695 SQ. FT. ±
30.07 ACRES ±



Design: JAC Draft: LAZ Date: 04/29/21
Checked: JAC Scale: AS NOTED Project No.: 21090
Drawing Name: 21090-PLAN.dwg

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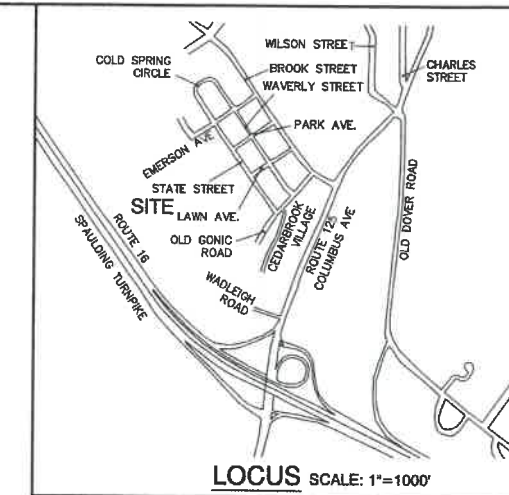
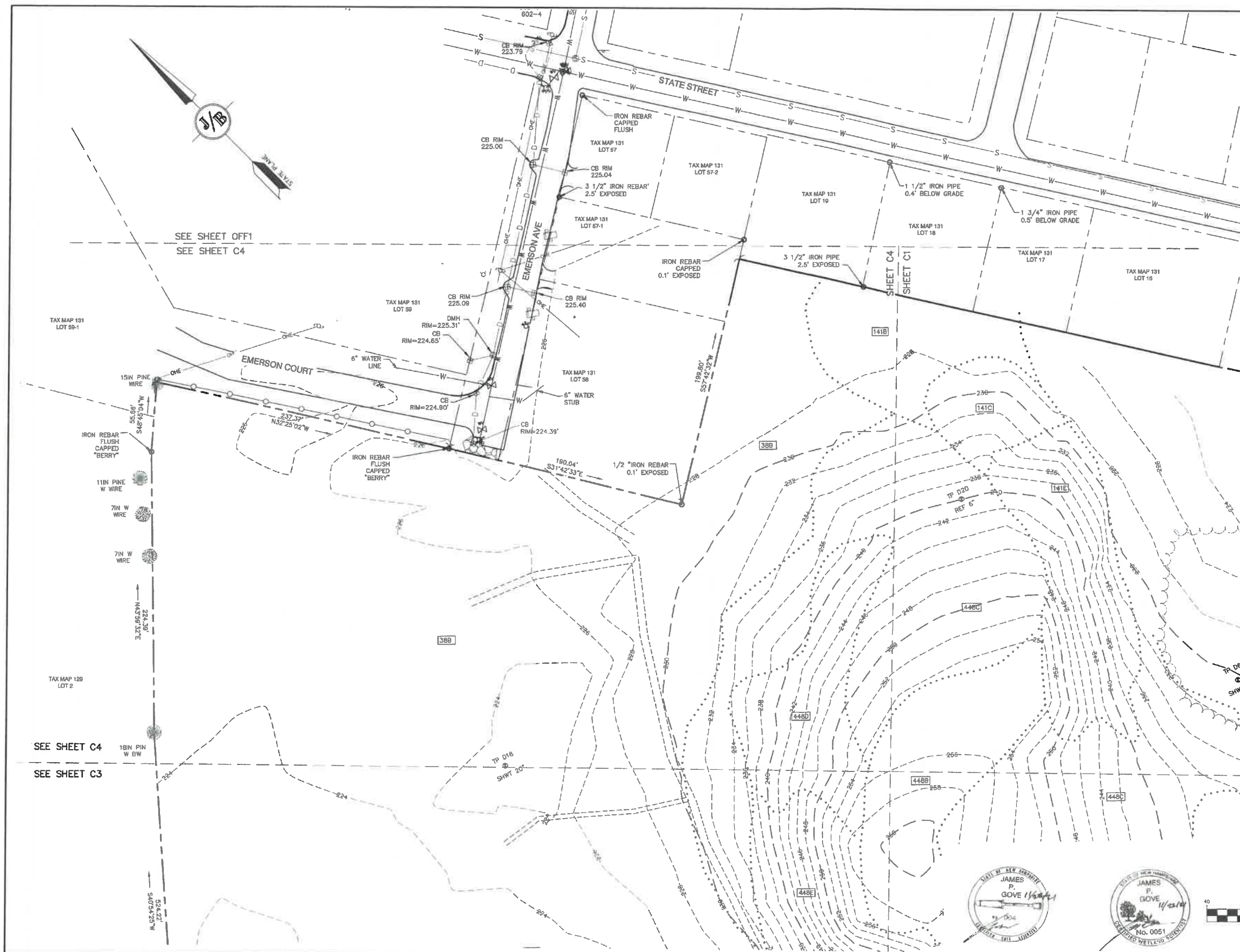
Project: **BAYBERRY COMMONS
19 OLD GONIC ROAD, ROCHESTER, NH**

Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148**

DRAWING No.

C3

SHEET 6 OF 46
JBE PROJECT NO. 21090



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ON BEHALF OF JONES & BEACH ENGINEERS, INC.

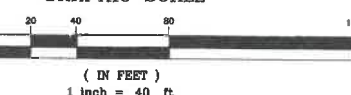
DATE: 4/12/2022

PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,309,696 SQ. FT. ±
30.07 ACRES ±

GRAPHIC SCALE



Design: JAC Draft: LAZ Date: 04/29/21
Checked: JAC Scale: AS NOTED Project No: 21090
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Civil Engineering Services
603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **EXISTING CONDITIONS PLAN**
Project: **BAYBERRY COMMONS
19 OLD GONIC ROAD, ROCHESTER, NH**
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148**

DRAWING No.
C4
SHEET 6 OF 45
JBE PROJECT NO. 21090



DEMOLITION NOTES:

1. THIS PLAN IS INTENDED TO PROVIDE MINIMUM GUIDELINES FOR SITE DEMOLITION. IT SHOULD BE NOTED THAT ALL MANMADE FEATURES, PAVEMENT, SIGNS, POLES, CURBING, CONCRETE WALKS, UTILITIES, ETC., SHALL BE REMOVED AS NECESSARY TO CONSTRUCT WORK, UNLESS OTHERWISE NOTED TO REMAIN. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCIES FROM DATA AS SHOWN ON DESIGN PLANS. THIS INCLUDES ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS OF THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.
2. A TEMPORARY CULVERT AND ROADBED SHALL BE IN PLACE PRIOR TO ANY USE OF A WETLAND CROSSING.
3. WETLAND IMPACTS SHALL NOT OCCUR UNTIL ALL PERMITS HAVE BEEN ACQUIRED AND IMPACT MITIGATION REQUIREMENTS HAVE BEEN SATISFIED.
4. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO HAVE THE PROJECT LAND SURVEYOR STAKE OR FLAG CLEARING LIMITS. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED. CLEARING LIMITS ARE THE EDGE OF THE PROPERTY AND THE LIMITS OF WORK.
5. ALL EXISTING STRUCTURES WITHIN THE CONSTRUCTION AREA, UNLESS OTHERWISE NOTED TO REMAIN, SHALL BE REMOVED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL GUIDELINES. ANY BURNING ON-SITE SHALL BE SUBJECT TO LOCAL ORDINANCES.
6. ALL EXISTING PAVED SURFACES WITHIN THE LIMITS OF WORK THAT ARE TO REMAIN SHALL BE RECLAIMED TO MINIMUM DEPTH OF 12" AND REGRADED AS SHOWN ON THE GRADING AND DRAINAGE PLAN. RECLAIMED ASPHALT SHALL CONFORM TO STATE SPECIFICATIONS. PRIOR TO REMOVAL, PAVEMENT SHALL BE SAWCUT AT ALL ENTRANCES AND LIMITS OF REMOVAL.
7. ALL EXISTING GRANITE CURBING TO BE REMOVED SHALL BE STOCKPILED IN AN AREA TO BE DESIGNATED BY THE OWNER OR OWNER'S REPRESENTATIVE. THE OWNER SHALL INSPECT GRANITE CURBING TO BE RESET AND APPROVE LOCATION OF RESET CURBING. THE CONTRACTOR SHALL NOT INSTALL USED CURBING AT ANY ENTRANCE LOCATIONS.
8. ALL EXISTING UTILITIES SHALL BE TERMINATED AT THE PROPERTY LINE, UNLESS OTHERWISE NOTED ON THE PLANS, IN CONFORMANCE WITH LOCAL, STATE AND UTILITY COMPANY STANDARDS. SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES PRIOR TO THE START OF WORK.
9. EXISTING WATERLINES AND HYDRANTS TO BE REMOVED SHALL BE CAPPED AT EXISTING WATERMAIN.
10. EXISTING GAS SERVICE LINES ARE TO BE REMOVED ON-SITE UP TO EXISTING GASMAIN LINES OR VALVES.
11. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL CONTAMINATED MATERIAL LOCATED IN THE AREA OF EXISTING LEACHFIELDS IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS.
12. ALL CURBING, CONCRETE, PAVEMENT, BUILDINGS AND SUBBASE MATERIALS LOCATED WITHIN PROPOSED LANDSCAPED AREAS SHALL BE REMOVED AND REPLACED WITH LOAM MATERIALS SUITABLE FOR LANDSCAPING IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS. (SEE ALSO LANDSCAPE PLAN).
13. SEE LANDSCAPE PLAN FOR "TREES TO BE SAVED" AND DETAILS ASSOCIATED WITH LANDSCAPED AREAS.
14. THE CONTRACTOR SHALL OBTAIN TREE CLEARING PERMIT FROM LOCAL AND STATE AUTHORITIES PRIOR TO START OF CONSTRUCTION (IF REQUIRED).
15. CONTRACTOR SHALL HAVE THE OPTION TO REMOVE DRAINAGE/SEWER STRUCTURES, OR REMOVE MANHOLE FRAME AND GRATE/COVER TO A MINIMUM OF 36" BELOW FINISH GRADE, FRACTURE BOTTOM AND FILL WITH COMPACTED BORROW.
16. IN AREAS WHERE CONSTRUCTION IS PROPOSED ADJACENT TO ADJUTING PROPERTIES, THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCING ALONG PROPERTY LINES IN ALL AREAS WHERE SILT FENCING IS NOT REQUIRED.
17. EXISTING SANITARY SEWER LINE AND STRUCTURES LOCATED WITHIN THE EXISTING SEWER EASEMENTS SHALL BE MAINTAINED OR MODIFIED AS NOTED ON PLANS. SEWER LINES SHALL BE DISCONNECTED IN ACCORDANCE WITH LOCAL STANDARDS AND REGULATIONS.
18. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND ANY EARTH MOVING OPERATIONS. SILT FENCE SHALL BE INSTALLED AT THE LIMITS OF IMPACT AREAS ACCORDING TO THE DETAILS SHOWN ON SHEET E1.
19. EXCAVATED MATERIALS WILL BE PLACED WITHIN UPLAND AREAS AS FILL MATERIAL OR HAULED OFF-SITE FOR DISPOSAL IN AN APPROPRIATE UPLAND LOCATION.

PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,309,695 SQ. FT. ±
30.07 ACRES ±

Design: JAC | Draft: LAZ | Date: 04/29/21
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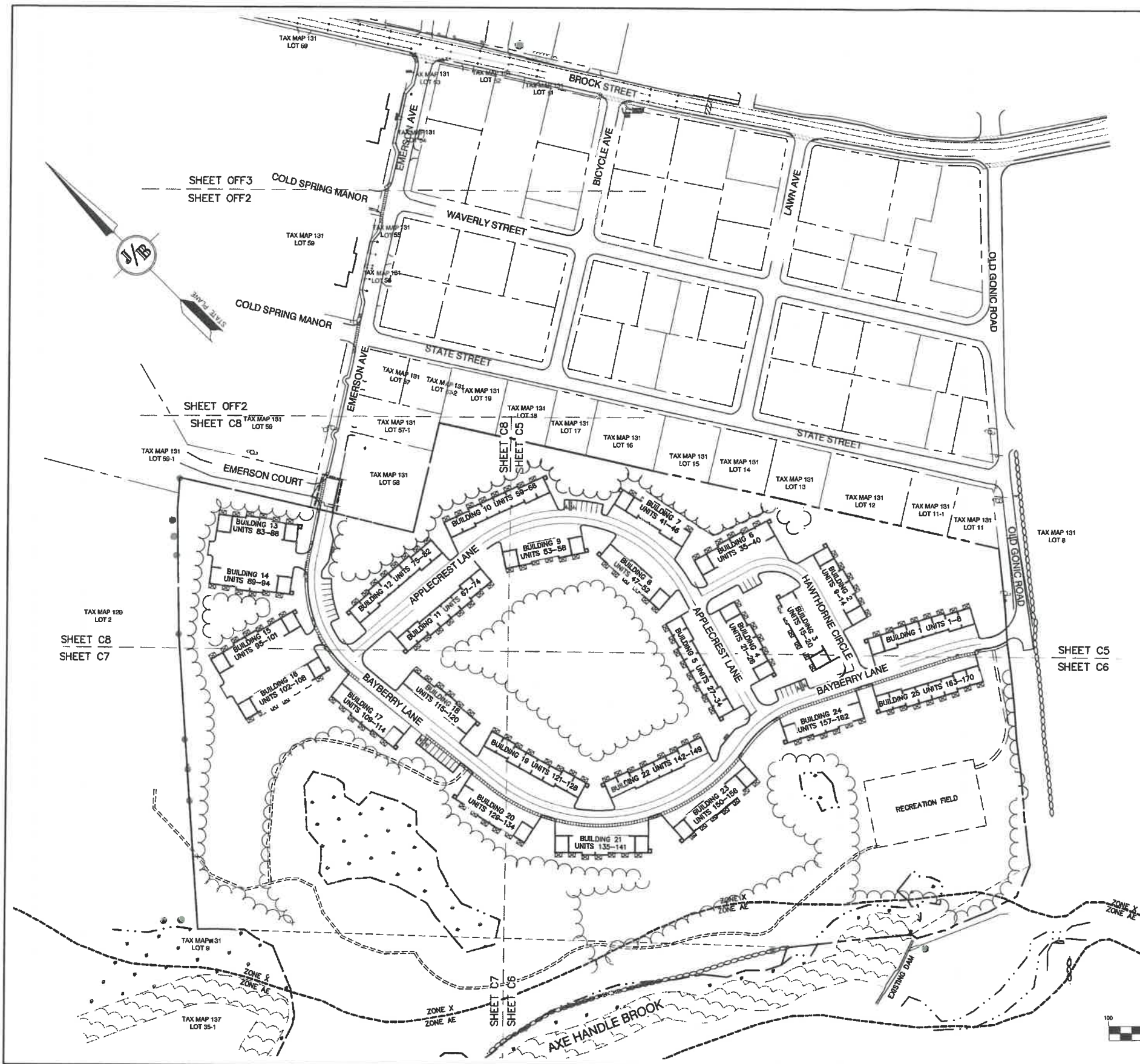
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Plan Name: **DEMOLITION PLAN**
Project: **BAYBERRY COMMONS
19 OLD GONIC ROAD, ROCHESTER, NH**
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148**

DRAWING No.

DM-1

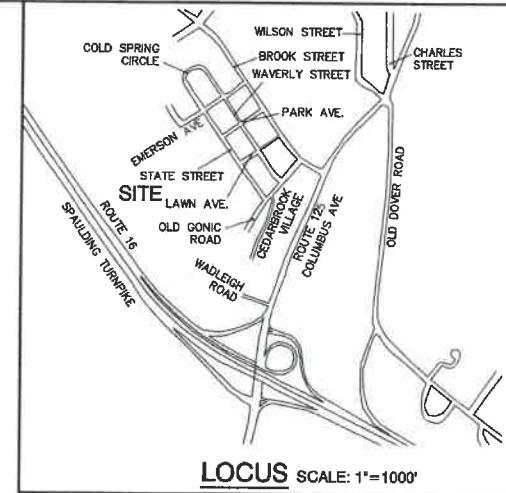
SHEET 7 OF 45
JBE PROJECT NO. 21090



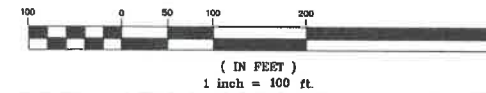
SITE NOTES:

- THE INTENT OF THIS PLAN IS TO SHOW A 170-UNIT TOWNHOUSE DEVELOPMENT ON THE SUBJECT PARCEL. ALL UNITS TO HAVE 3 BEDROOMS. PROJECT TO BE SERVED BY CITY WATER AND SEWER AND UNDERGROUND UTILITIES.
- ZONING DISTRICT: RESIDENTIAL-2. USE: FIVE-OR MORE FAMILY.
LOT AREA MINIMUM = 30,000 SF
LOT FRONTAGE MINIMUM = 100'
BUILDING SETBACKS (MINIMUM):
FRONT SETBACK = 15'
SIDE SETBACK = 10'
REAR SETBACK = 25'
WETLAND SETBACK = 50'
MAX BUILDING HEIGHT = 35'
MAX BUILDING FOOTPRINT = 30%
MAX LOT COVERAGE = 60%
MIN. LOT AREA / DWELLING UNIT = 7,500 S.F.
BUILDING FOOTPRINT PROPOSED = 122,400 S.F. = 8.3% OF SITE
TOTAL LOT COVERAGE PROPOSED = 310,478 S.F. = 23.7% OF SITE
- DENSITY CALCULATION:
TOTAL LOT AREA = 1,309,895 S.F. / 7,500 S.F. = 175 UNITS ALLOWED
170 UNITS PROVIDED
- LOT COVERAGE CALCULATIONS

	AREA (SF)	AREA (AC)	PERCENT OF SITE
TOTAL AREA	1,309,895 SF	30.07 AC	
BUILDING W/ OVERHANG AND DECKS	148,840 SF	3.4 AC	11.2%
PAVEMENT	188,078 SF	4.3 AC	14.4%
TOTAL LOT COVERAGE	344,918 SF	7.7 AC	25.6%
LANDSCAPING OR GRASS	332,884 SF	7.6 AC	25.4%
POND AREA	42,215 SF	1.0 AC	3.2%
TOTAL DISTURBED AREA	710,117 SF	16.3 AC	54.2%
WETLAND	58,284 SF	1.3 AC	4.5%
UNDISTURBED UPLAND	541,284 SF	12.4 AC	41.3%
TOTAL UNDISTURBED AREA	599,578 SF	13.8 AC	45.6%
- PARKING CALCULATIONS
ALL UNITS TO HAVE 2 GARAGE SPACES AND 2 SPACES IN FRONT OF UNIT PLUS
34 VISITOR SPACES INCLUDING 6 HANDICAP SPACES.
TOTAL PARKING ON SITE = 730 SPACES
- ALL CONSTRUCTION SHALL CONFORM TO CITY STANDARDS AND REGULATIONS, AND NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
- THE SUBJECT PARCEL IS PARTIALLY LOCATED WITHIN AN AREA HAVING A ZONE AE DESIGNATION BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON FLOOD INSURANCE RATE MAP NO. 33017C0210, WITH EFFECTIVE DATE OF MAY 17, 2005 FOR COMMUNITY PANEL NO. 211 OF 405, IN ROCKINGHAM COUNTY, STATE OF NEW HAMPSHIRE, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
- LANDOWNERS ARE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING PERMITTING REQUIRED UNDER THESE REGULATIONS.
- ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN (S.W.P.P.P.), THIS DOCUMENT IS TO BE KEPT ONSITE AT ALL TIMES AND UPDATED AS REQUIRED.
- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES AND BONDS.
- ALL PROPOSED SIGNAGE SHALL CONFORM WITH THE CITY ZONING REGULATIONS, UNLESS A VARIANCE IS OTHERWISE REQUESTED.
- ALL SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AND NHDOT STANDARDS AND SPECIFICATIONS (NON-REFLECTORIZED PAVEMENT MARKINGS), UNLESS OTHERWISE NOTED.
- ALL PARKING STALLS SHALL BE SEPARATED USING 4" WIDE SOLID STRIPES. STRIPING SHALL HAVE TWO COATS OF PAINT, ALKID BASIN SYNTHETIC RESIN, FEDERAL SPECIFICATION TTP-115 TYPE 1, IN A COLOR OF WHITE.
- ALL STOP BARS SHALL BE 18" IN WIDTH IN A COLOR OF WHITE; ALL TRAFFIC ARROWS SHALL BE PAINTED IN A COLOR OF WHITE.
- ALL BUILDING DIMENSIONS SHALL BE VERIFIED WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PROVIDED BY THE OWNER. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND OWNER PRIOR TO THE START OF CONSTRUCTION. BUILDING DIMENSIONS AND AREAS TO BE TO OUTSIDE OF MASONRY, UNLESS OTHERWISE NOTED.
- SNOW TO BE STORED AT EDGE OF PAVEMENT AND IN AREAS SHOWN ON THE PLANS, OR TRUCKED OFFSITE TO AN APPROVED SNOW DUMPING LOCATION.
- ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
- TRASH TO BE HANDLED WITH TOTES AT EACH UNIT. TRASH TO BE PICKED UP BY A PRIVATE HAULER.
- STATE PERMITS REQUIRED:
NHDES ALTERATION OF TERRAIN PERMIT
NHDES SEWER EXTENSION PERMIT
NHDES DRINKING WATER PERMIT
- EXCAVATION PERMITS ARE REQUIRED FOR ANY WORK PERFORMED WITHIN THE CITY RIGHT-OF-WAY.



GRAPHIC SCALE



PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,309,895 SQ. FT. ±
30.07 ACRES ±

APPROVED - ROCHESTER, NH
PLANNING BOARD

DATE:

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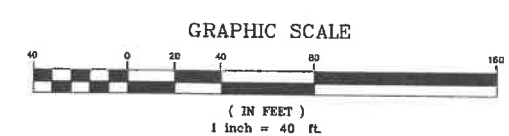
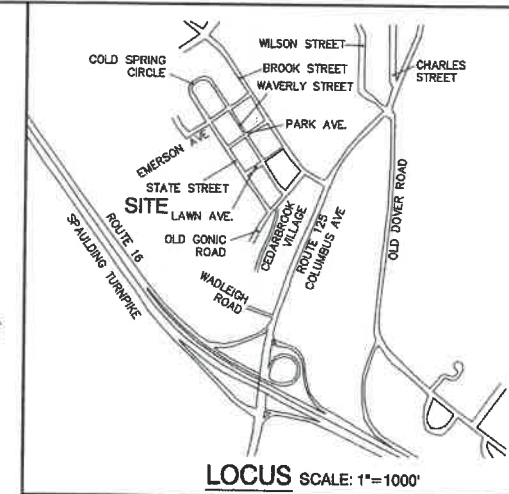
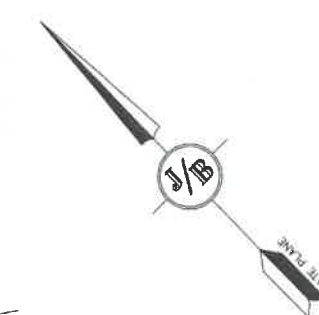
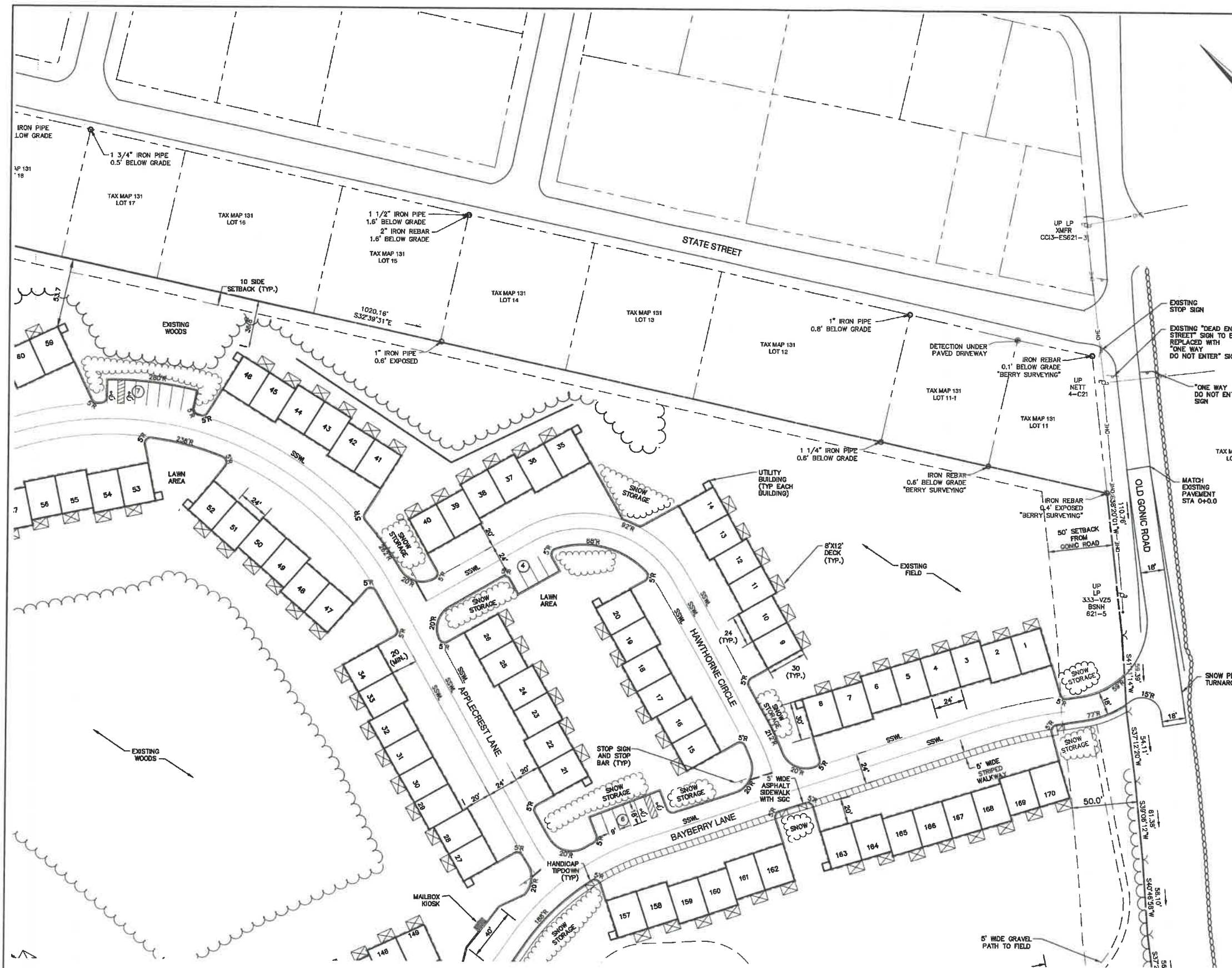
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603-772-4746 FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **OVERVIEW SITE PLAN**
Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.

OVRS

SHEET 8 OF 45
JBE PROJECT NO. 21090



APPROVED - ROCHESTER, NH PLANNING BOARD		PROJECT PARCEL CITY OF ROCHESTER TAX MAP 131, LOT 10
DATE: _____		APPLICANT GREEN AND COMPANY 11 LAFAYETTE ROAD NORTH HAMPTON, NH 03862
		TOTAL LOT AREA 1,309,685 SQ. FT. ± 30.07 ACRES ±

Design: JAC Draft: LAZ Date: 04/29/21
 Checked: JAC Scale: AS NOTED Project No.: 21090
 Drawing Name: 21090-PLAN.dwg
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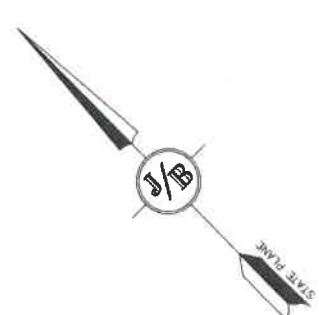
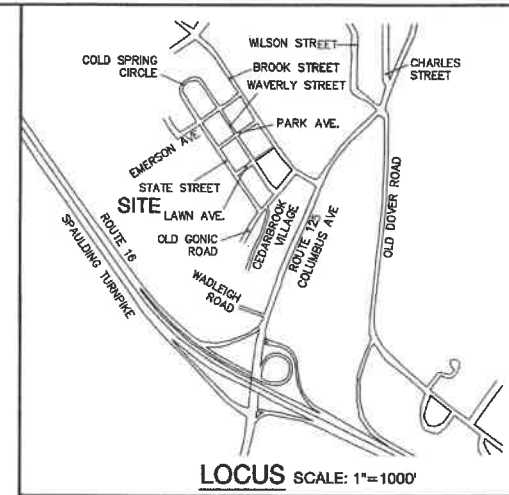
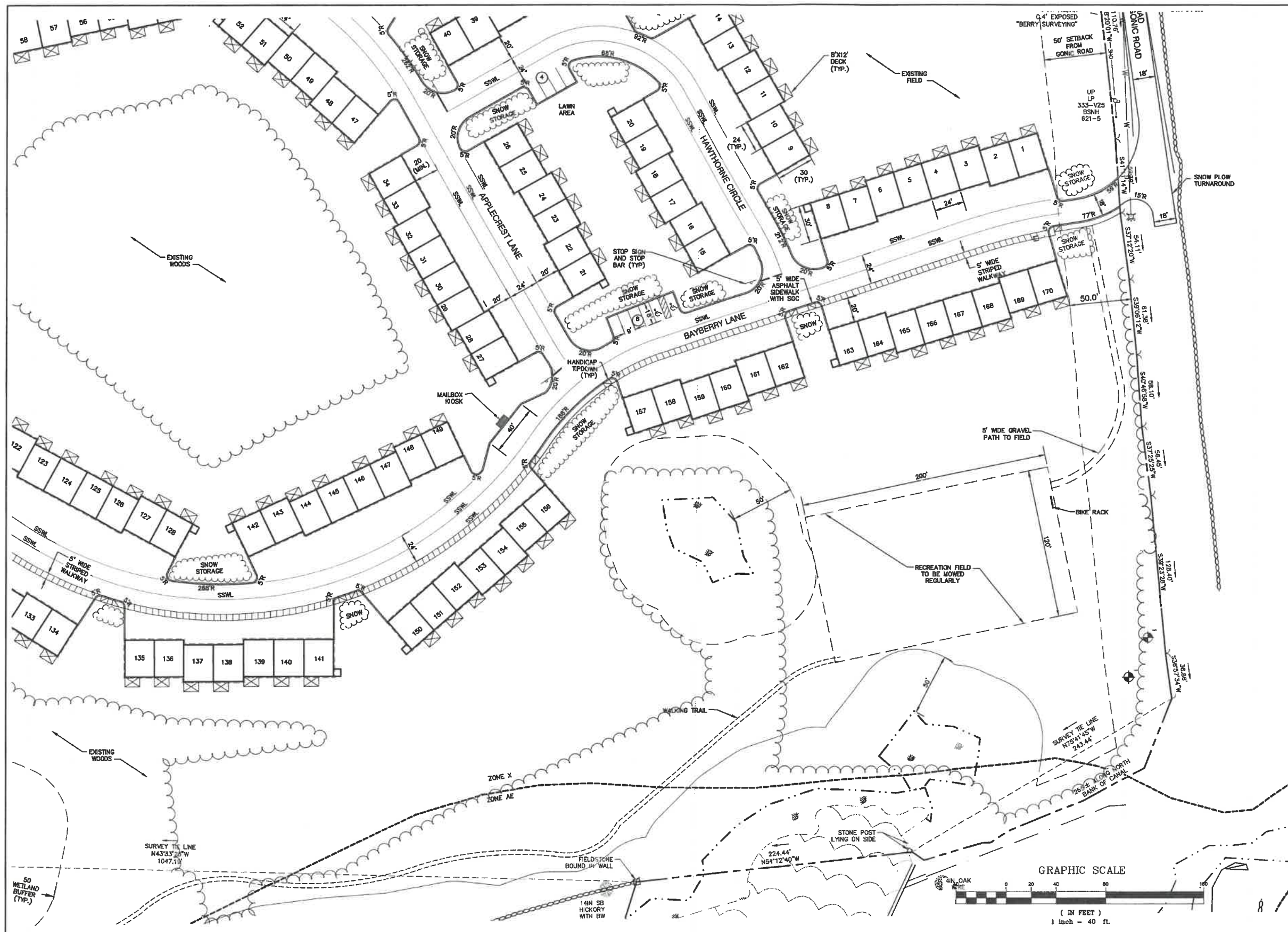


REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

J/B Jones & Beach Engineers, Inc.
 65 Portsmouth Ave. PO Box 219 Stratham, NH 03885
 603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	SITE PLAN
Project:	BAYBERRY COMMONS 19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record:	LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE 19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.	C5
SHEET 9 OF 45 JBE PROJECT NO. 21090	



PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,309,695 SQ. FT. ±
30.07 ACRES ±

APPROVED - ROCHESTER, NH
PLANNING BOARD

DATE: _____

Design: JAC Draft: LAZ Date: 04/29/21
Checked: JAC Scale: AS NOTED Project No.: 21090
Drawing Name: 21090-PLAN.dwg

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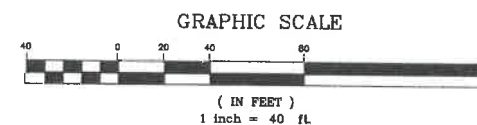
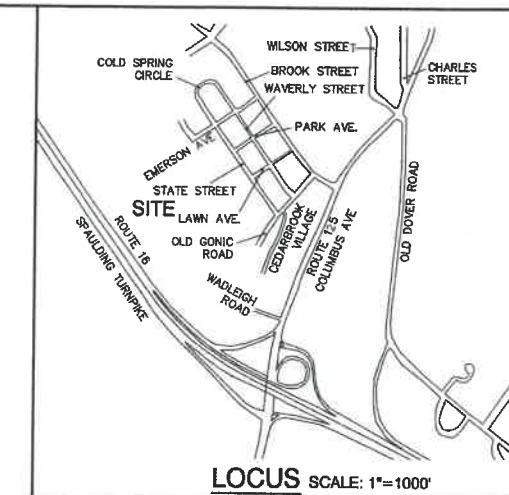
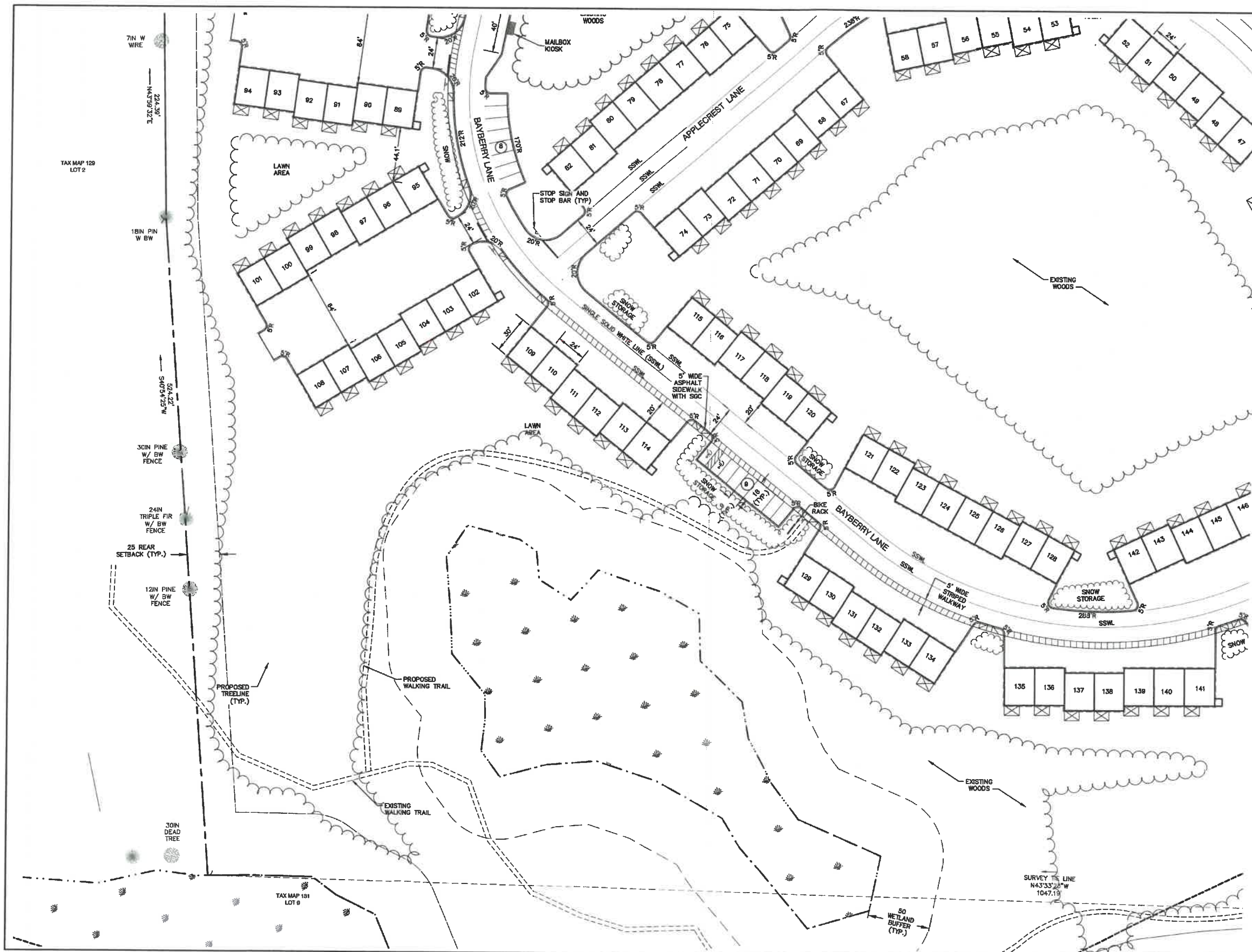


REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ
		REVISION	BY

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Civil Engineering Services
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: SITE PLAN
Project: BAYBERRY COMMONS
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.
C6
SHEET 10 OF 45
JBE PROJECT NO. 21090



APPROVED - ROCHESTER, NH PLANNING BOARD	
PROJECT PARCEL CITY OF ROCHESTER TAX MAP 131, LOT 10	
APPLICANT GREEN AND COMPANY 11 LAFAYETTE ROAD NORTH HAMPTON, NH 03862	
TOTAL LOT AREA 1,309,896 SQ. FT. ± 30.07 ACRES ±	
DATE: _____	

Design: JAC Draft: LAZ Date: 04/29/21
Checked: JAC Scale: AS NOTED Project No.: 21090
Drawing Name: 21090-PLAN.dwg
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4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ
REV.	DATE	REVISION	BY

Designed and Produced in NH

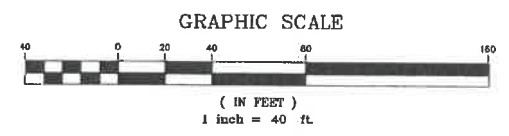
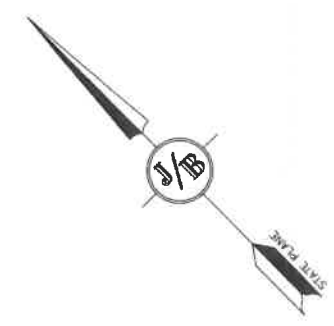
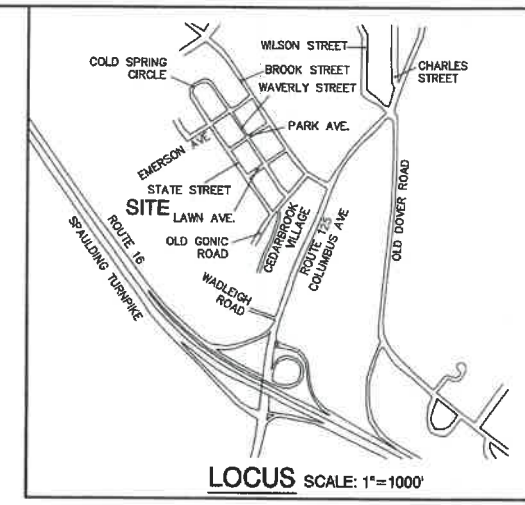
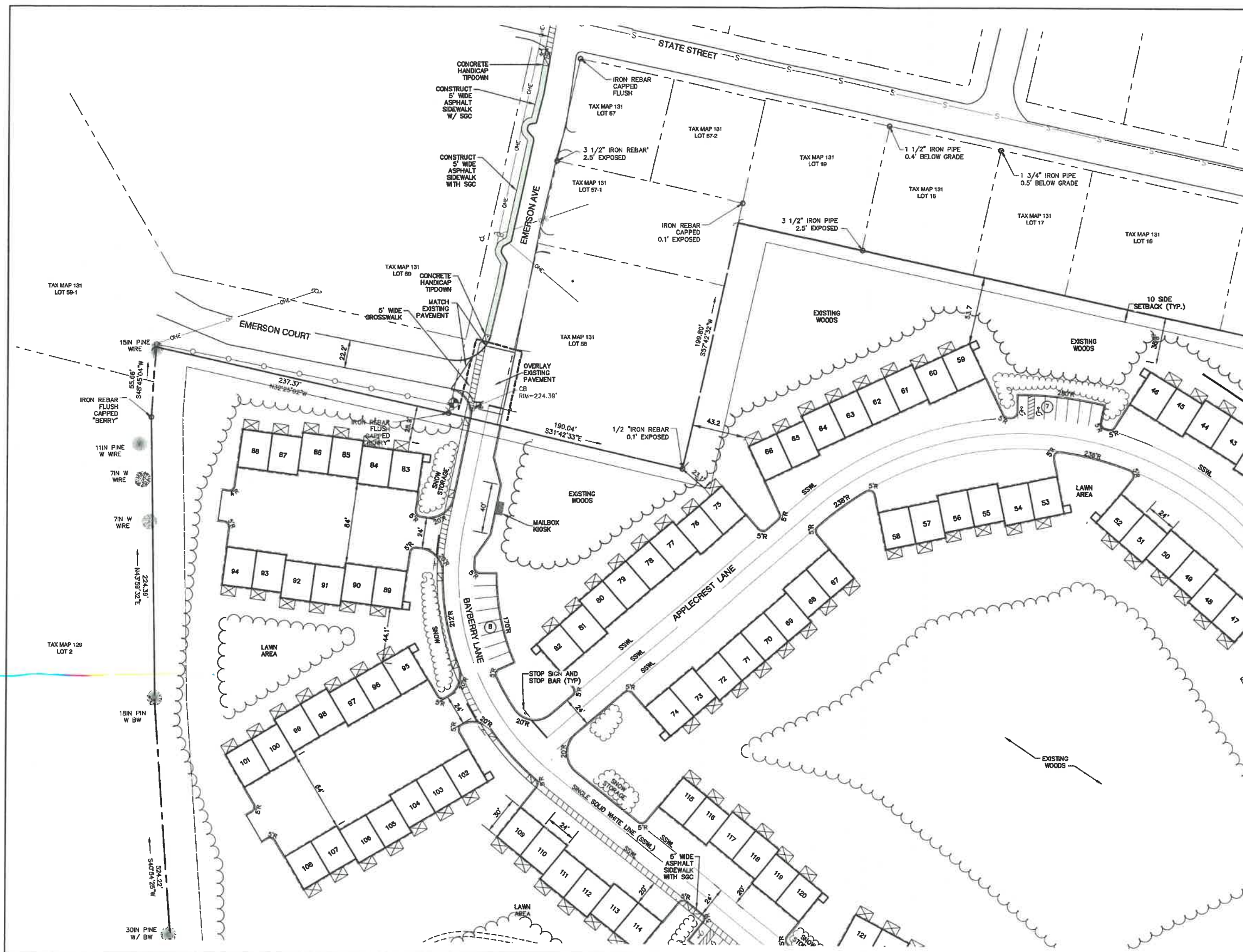
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85 Portsmouth Ave. PO Box 219 Stratham, NH 03885

603-772-4748 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	SITE PLAN
Project:	BAYBERRY COMMONS
Owner of Record:	19 OLD GONIC ROAD, ROCHESTER, NH

DRAWING No.
C7
SHEET 11 OF 45 JBE PROJECT NO. 21090



APPROVED - ROCHESTER, NH PLANNING BOARD		PROJECT PARCEL CITY OF ROCHESTER TAX MAP 131, LOT 10
DATE: _____		APPLICANT GREEN AND COMPANY 11 LAFAYETTE ROAD NORTH HAMPTON, NH 03862
		TOTAL LOT AREA 1,309,685 SQ. FT. ± 30.07 ACRES ±

Design: JAC Draft: LAZ Date: 04/29/21
 Checked: JAC Scale: AS NOTED Project No: 21090
 Drawing Name: 21090-PLAN.dwg
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REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
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1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

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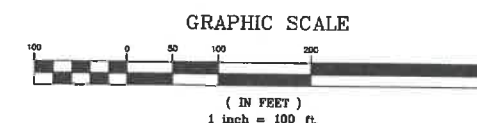
Plan Name:	SITE PLAN
Project:	BAYBERRY COMMONS 19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record:	LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE 19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4083 PG 148

DRAWING No.	C8
SHEET 12 OF 45 JBE PROJECT NO. 21090	

GRADING AND DRAINAGE NOTES:

- THIS SITE WILL REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE CONSTRUCTION SITE. THE CONSTRUCTION SITE OPERATOR SHALL DEVELOP AND IMPLEMENT A CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN (SWPPP), WHICH SHALL REMAIN ON SITE AND BE MADE ACCESSIBLE TO THE PUBLIC. THE CONSTRUCTION SITE OPERATOR SHALL SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA REGIONAL OFFICE SEVEN DAYS PRIOR TO COMMENCEMENT OF ANY WORK ON SITE. EPA WILL POST THE NOI AT: [HTTP://CFPUB.EPA.GOV/NPDES/STORMWATER/NOI/NOISEARCH.CFM](http://cfpub.epa.gov/npdes/stormwater/noi/noisearch.cfm). AUTHORIZATION IS GRANTED UNDER THE PERMIT ONCE THE NOI IS SHOWN IN "ACTIVE" STATUS ON THIS WEBSITE. A COMPLETED NOTICE OF TERMINATION SHALL BE SUBMITTED TO THE NPDES PERMITTING AUTHORITY WITHIN 30 DAYS AFTER EITHER OF THE FOLLOWING CONDITIONS HAVE BEEN MET:
 - FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE; OR
 - ANOTHER OPERATOR/PERMITTEE HAS ASSUMED CONTROL OVER ALL AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED. PROVIDE DPW WITH A COPY OF THE NOTICE OF TERMINATION (NOT).
- IF THIS CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 85 % MATURE VEGETATION COVER, OR RIPRAP BY OCTOBER 15, THEN THE SITE MUST BE PROTECTED WITH OVER-WINTER STABILIZATION. THE WINTER CONSTRUCTION PERIOD IS FROM OCTOBER 15 THROUGH MAY 15. WINTER EXCAVATION AND EARTHWORK ACTIVITIES SHALL BE LIMITED IN EXTENT AND DURATION, TO MINIMIZE POTENTIAL EROSION AND SEDIMENTATION IMPACTS.
- UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM FIELD OBSERVATION AND THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. NEITHER JONES & BEACH ENGINEERS, INC., NOR ANY OF THEIR EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES AND/OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 888-DIG-SAFE (888-344-7233).
- ALL BENCHMARKS AND TOPOGRAPHY SHOULD BE FIELD VERIFIED BY THE CONTRACTOR.
- SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED. SEE CONSTRUCTION SEQUENCE ON SHEET E1.
- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO HAVE THE PROJECT'S LAND SURVEYOR STAKE OR FLAG CLEARING LIMITS. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED.
- ALL SWALES AND DETENTION PONDS ARE TO BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- PROPOSED RM ELEVATIONS OF DRAINAGE STRUCTURES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES.
- ALL SWALES AND ANY SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH NORTH AMERICAN GREEN S75 EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED IN WRITING BY THE ENGINEER), UNLESS OTHERWISE SPECIFIED.
- ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4" MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS. CATCH BASINS SHALL HAVE 3" DEEP SLUMPS WITH GREASE HOODS, UNLESS OTHERWISE NOTED.
- ALL DRAINAGE STRUCTURES SHALL BE PRECAST, UNLESS OTHERWISE SPECIFIED.
- ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC H20 LOADING AND SHALL BE INSTALLED ACCORDINGLY.
- THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCING ALONG PROPERTY LINES AND ALONG WETLAND BUFFERS.
- ALL DRAINAGE PIPE SHALL BE NON-PERFORATED ADS N-12 OR APPROVED EQUAL.
- STONE INLET PROTECTION SHALL BE PLACED AT ALL CATCH BASINS. SEE DETAIL WITHIN THE DETAIL SHEETS.
- LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY ALL GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE EPA SWPPP DURING CONSTRUCTION OPERATIONS.
- ALL EXPOSED AREAS SHALL BE SEEDDED AS SPECIFIED WITHIN 3 DAYS OF FINAL GRADING AND ANYTIME CONSTRUCTION STOPS FOR LONGER THAN 3 DAYS.
- MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN EVENT OF 0.5" OR GREATER IN A 24 HOUR PERIOD AND AT LEAST ONCE A WEEK.
- THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE, AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT FROM LEAVING THE SITE.
- CONSTRUCTION VEHICLES SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE TO THE EXTENT POSSIBLE THROUGHOUT CONSTRUCTION.
- IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OR NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
- SEDIMENT SHALL BE REMOVED FROM ALL SEDIMENT BASINS BEFORE THEY ARE 25% FULL.
- ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.
- ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED, IF DEEMED NECESSARY BY ON-SITE INSPECTION BY ENGINEER AND/OR REGULATORY OFFICIALS.
- SEE ALSO EROSION AND SEDIMENT CONTROL SPECIFICATIONS ON SHEET E1.
- PRIOR TO CLEARING OR GRADING DISTURBANCE, THE CONTRACTOR SHALL IDENTIFY ALL AREAS OF TYPE 2 INVASIVE SPECIES AS DEFINED BY NH00T AND ADHERE TO THE PRACTICES OUTLINED IN BEST-MANAGEMENT PRACTICES FOR THE CONTROL OF INVASIVE AND NOXIOUS PLANT SPECIES NH00T 2018. THESE PRACTICES SHALL BE FOLLOWED FOR THE ENTIRE CONSTRUCTION TERM INCLUDING ESTABLISHMENT OF LANDSCAPING. AS THE SITE RE-VEGETATES AFTER CONSTRUCTION, LANDSCAPING CONTRACTOR TO INFORM THE OWNER IF ANY INVASIVE SPECIES START TO GROW. OWNER SHALL CONTACT A QUALIFIED REMOVAL COMPANY AND FOLLOW NPDES BEST MANAGEMENT PRACTICES.

SEE SHEET C9
SEE SHEET C10



PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,308,695 SQ. FT. ±
30.07 ACRES ±

DRAWING No.

OVRG

SHEET 13 OF 45
JBE PROJECT NO. 21090

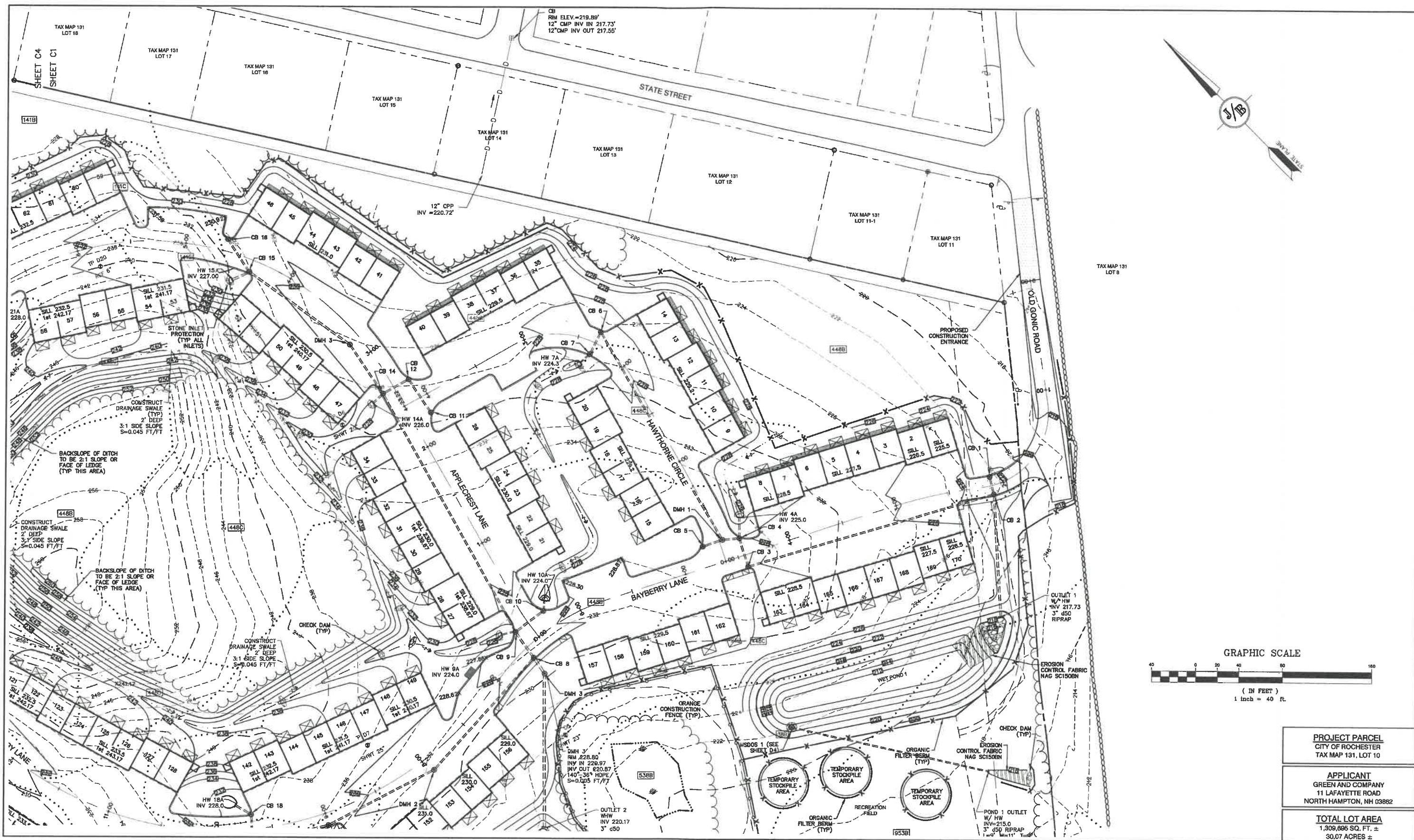
Plan Name: **OVERVIEW GRADING PLAN**
Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
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REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
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1	1/18/22	REVISED PER CITY COMMENTS	LAZ
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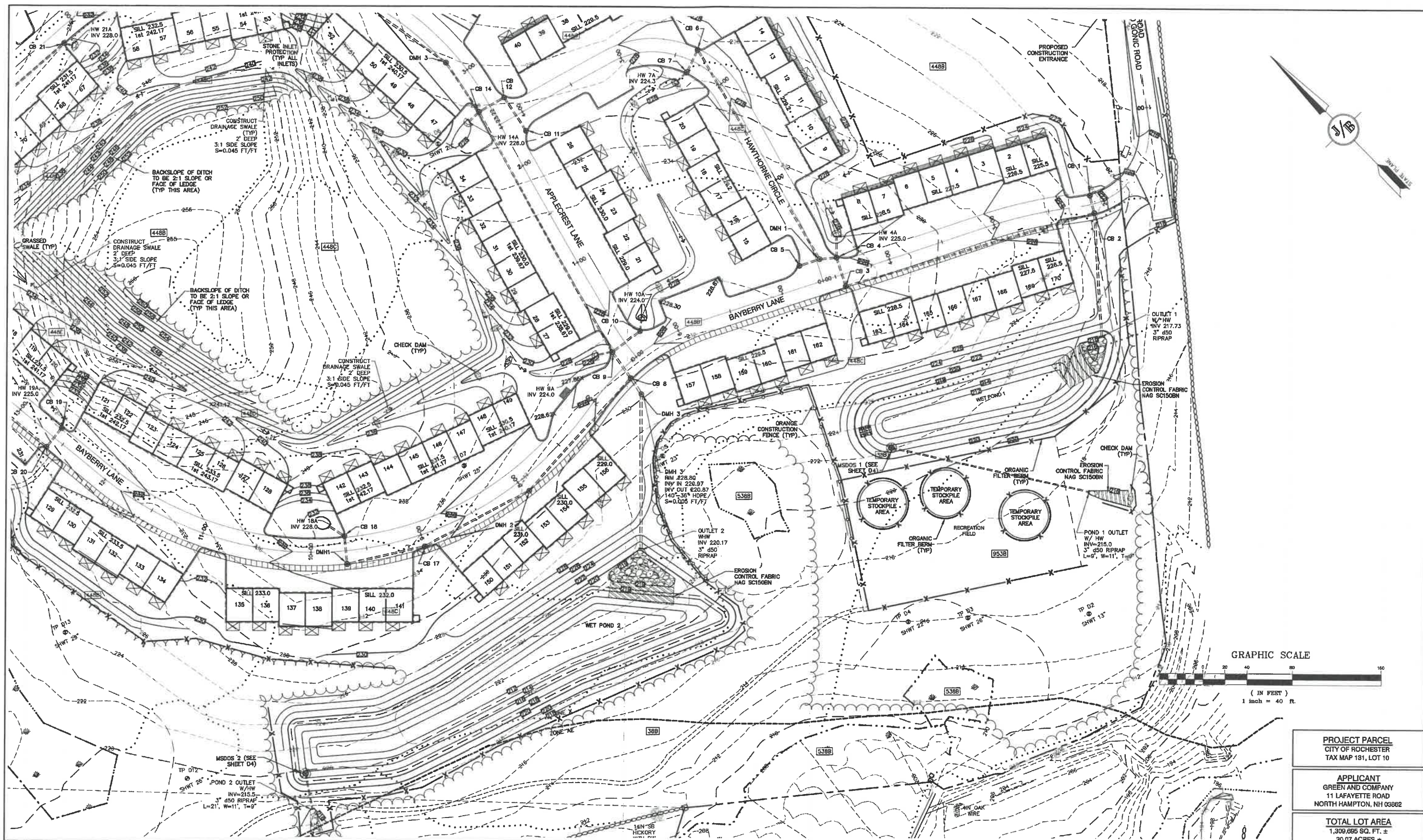


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 Civil Engineering Services
 65 Portsmouth Ave. PO Box 219 Stratham, NH 03885
 603-772-4746 FAX: 603-772-0227
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **GRADING & DRAINAGE PLAN**
 Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
 Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.
C9
 SHEET 14 OF 46
 JBE PROJECT NO. 21090



GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 181, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,309,695 SQ. FT. ±
30.07 ACRES ±

Design: JAC Draft: LAZ Date: 04/29/21
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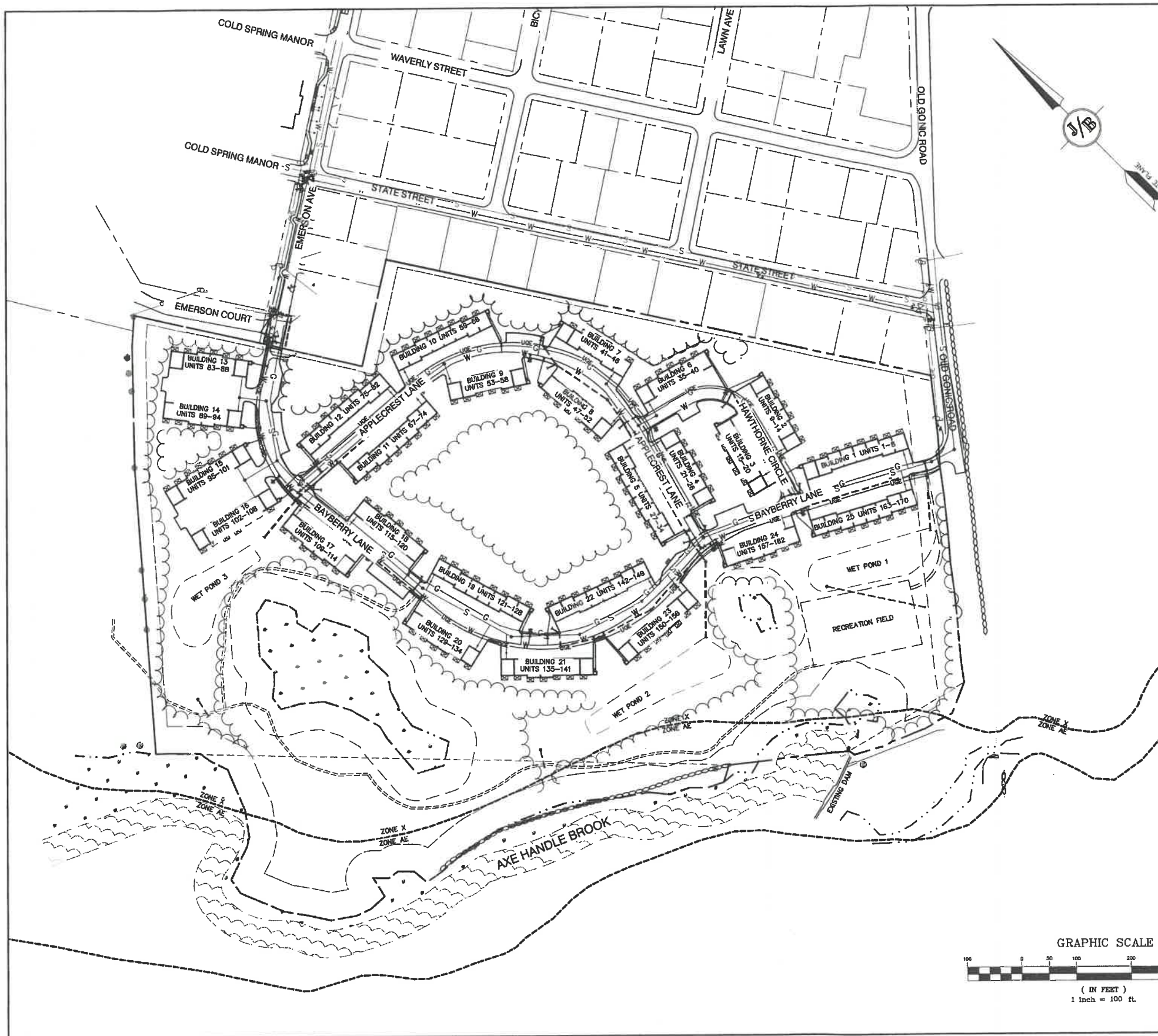


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Plan Name: **GRADING & DRAINAGE PLAN**
Project: **BAYBERRY COMMONS
19 OLD GONIC ROAD, ROCHESTER, NH**
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4083 PG 148**

DRAWING NO.
C10
SHEET 15 OF 45
JBE PROJECT NO. 21090



UTILITY NOTES:

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, CONNECTION FEES AND BONDS.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM NOTICE OF FOURTEEN (14) DAYS TO ALL CORPORATIONS, COMPANIES AND/OR LOCAL AUTHORITIES OWNING OR HAVING A JURISDICTION OVER UTILITIES RUNNING TO, THROUGH OR ACROSS PROJECT AREAS PRIOR TO DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
3. THE LOCATION, SIZE, DEPTH AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE TO THE STANDARDS AND REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY (ELECTRIC, TELEPHONE, CABLE TELEVISION, FIRE ALARM, GAS, WATER, AND SEWER).
4. A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE OWNER, ENGINEER, ARCHITECT, CONTRACTOR, LOCAL OFFICIALS, AND ALL PROJECT-RELATED UTILITY COMPANIES (PUBLIC AND PRIVATE) PRIOR TO START OF CONSTRUCTION.
5. ALL CONSTRUCTION SHALL CONFORM TO THE CITY STANDARDS AND REGULATIONS, AND NHDES STANDARDS AND SPECIFICATIONS, WHICHEVER ARE MORE STRINGENT, UNLESS OTHERWISE SPECIFIED.
6. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
7. BUILDING TO BE SERVICED BY UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED.
8. THE CONTRACTOR IS TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITY STUBS PRIOR TO CONSTRUCTION AND DISCONNECT ALL EXISTING SERVICE CONNECTIONS AT THEIR RESPECTIVE MAINS IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANY'S STANDARDS AND SPECIFICATIONS. ENGINEER TO BE NOTIFIED.
9. AS-BUILT PLANS SHALL BE SUBMITTED TO DEPARTMENT OF PUBLIC WORKS.
10. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION. THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE THROUGH CHANNEL UNDERLAYMENT OF AN INVERT, AND SHELF SHALL CONSIST OF BRICK MASONRY.
11. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30 INCH DIA. CLEAR OPENING. THE WORD "SEWER" OR "DRAIN" SHALL BE CAST INTO THE CENTER OF THE UPPER FACE OF EACH COVER WITH RAISED, 3" LETTERS.
12. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H2O LOADS.
13. CONTRACTOR SHALL PLACE 2" WIDE METAL WIRE IMPREGNATED RED PLASTIC WARNING TAPE OVER ENTIRE LENGTH OF ALL GRAVITY SEWERS, SERVICES, AND FORCE MAINS.
14. SANITARY SEWER FLOW CALCULATIONS:
174 - THREE BEDROOM UNITS @ 150 GPD/BEDROOM = 78,300 GPD
15. ALL SANITARY STRUCTURE INTERIOR DIAMETERS (4" MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS.
16. PROPOSED RIM ELEVATIONS OF DRAINAGE AND SANITARY MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES. ADJUST ALL OTHER RIM ELEVATIONS OF MANHOLES, WATER GATES, GAS GATES AND OTHER UTILITIES TO FINISH GRADE AS SHOWN ON THE GRADING AND DRAINAGE PLAN.
17. ALL WATER MAINS AND SERVICE PIPES SHALL HAVE A MINIMUM 12" VERTICAL AND 24" HORIZONTAL SEPARATION TO MANHOLES, OR CONTRACTOR SHALL INSTALL BOARD INSULATION FOR FREEZING PROTECTION.
18. WATER MAINS SHALL BE HYDROSTATICALLY PRESSURE TESTED FOR LEAKAGE PRIOR TO ACCEPTANCE. WATERMAINS SHALL BE TESTED AT 1.5 TIMES THE WORKING PRESSURE OR 150 PSI, WHICHEVER IS GREATER. TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH SECTION 4 OF AWWA STANDARD C 600. WATERMAINS SHALL BE DISINFECTED AFTER THE ACCEPTANCE OF THE PRESSURE AND LEAKAGE TESTS ACCORDING TO AWWA STANDARD C 651.
19. ALL WATER AND SANITARY LEADS TO BUILDING(S) SHALL END 5' OUTSIDE THE BUILDING LIMITS AS SHOWN ON PLANS AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT END.
20. IF THE BUILDING IS REQUIRED TO HAVE A SPRINKLER SYSTEM, A PRECONSTRUCTION MEETING SHALL BE HELD BETWEEN THE CONTRACTOR, OWNER, ARCHITECT AND THE LOCAL FIRE DEPARTMENT PRIOR TO THE INSTALLATION.
21. THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS, TEES, MECHANICAL JOINTS AND FIRE HYDRANTS.
22. DIMENSIONS ARE SHOWN TO CENTERLINE OF PIPE OR FITTING.
23. REFER TO FIRE PROTECTION SHEETS FOR LOCATION AND DETAIL OF FIRE LINE LEAD IN TO BUILDING. FIRE LINE SHALL BE STUBBED UP 1' ABOVE FINISH FLOOR ELEVATION IN SPRINKLER ROOM. AN APPROVED AUTOMATIC SPRINKLER SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH 101 LIFE SAFETY CODE/IFPA 1 AND LOCAL REGULATIONS. FIRE DEPARTMENT CONNECTION SHALL BE FIELD VERIFIED BY LOCAL FIRE DEPARTMENT TO ENSURE OPTIMUM PLACEMENT.
24. THE CONTRACTOR SHALL HAVE THE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER FIRE PROTECTION SYSTEM PRIOR TO INSTALLATION.
25. CONTRACTOR TO FURNISH SHOP DRAWINGS FOR UTILITY RELATED ITEMS TO ENSURE CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. SHOP DRAWINGS SHOULD BE SENT IN TRIPLICATE TO THE DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
26. EXISTING UTILITIES SHALL BE DIGSAFED BEFORE CONSTRUCTION.
27. ALL WATER LINES SHOULD HAVE TESTABLE BACKFLOW PREVENTERS AT THE ENTRANCE TO EACH BUILDING.
28. ALL GRAVITY SEWER PIPE, MANHOLES, AND FORCE MAINS SHALL BE TESTED ACCORDING TO NHDES STANDARDS OF DESIGN AND CONSTRUCTION FOR SEWAGE AND WASTEWATER TREATMENT FACILITIES, CHAPTER ENV-WQ 700, ADOPTED ON 10-15-14.
29. ENV-WQ 704.06 GRAVITY SEWER PIPE TESTING: GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY USE OF LOW-PRESSURE AIR TESTS CONFORMING WITH ASTM F1417-82(2005) OR UNI-BELL PVC PIPE ASSOCIATION UNI-B-6. LINES SHALL BE CLEANED AND VISUALLY INSPECTED AND TRUE TO LINE AND GRADE. DEFLECTION TESTS SHALL TAKE PLACE AFTER 30 DAYS FOLLOWING INSTALLATION AND THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5% OF AVERAGE INSIDE DIAMETER. A RIGID BALL OR MANDEL WITH A DIAMETER OF AT LEAST 65% OF THE AVERAGE INSIDE PIPE DIAMETER SHALL BE USED FOR TESTING PIPE DEFLECTION. THE DEFLECTION TEST SHALL BE CONDUCTED WITHOUT MECHANICAL PULLING DEVICES.
30. ENV-WQ 704.17 SEWER MANHOLE TESTING: SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST PRIOR TO BACKFILLING AND PLACEMENT OF SHELVES AND INVERTS.
31. SANITARY SEWER LINES SHALL BE LOCATED AT LEAST TEN (10) FEET HORIZONTALLY FROM AN EXISTING OR PROPOSED WATER LINE. WHEN A SEWER LINE CROSSES UNDER A WATER LINE, THE SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM THE WATERMAIN. THE SEWER LINE SHALL ALSO MAINTAIN A VERTICAL SEPARATION OF NOT LESS THAN 18 INCHES.
32. SEWERS SHALL BE BURIED TO A MINIMUM DEPTH OF 6 FEET BELOW GRADE IN ALL ROADWAY LOCATIONS, AND TO A MINIMUM DEPTH OF 4 FEET BELOW GRADE IN ALL CROSS-COUNTRY LOCATIONS. PROVIDE TWO-INCHES OF R-10 FOM BOARD INSULATION 2-FOOT WIDE TO BE INSTALLED 6-INCHES OVER SEWER PIPE IN AREAS WHERE DEPTH IS NOT ACHIEVED. A WAIVER FROM THE DEPARTMENT OF ENVIRONMENTAL SERVICES WASTEWATER ENGINEERING BUREAU IS REQUIRED PRIOR TO INSTALLING SEWER AT LESS THAN MINIMUM COVER.
33. ALL WATER AND SANITARY LEADS TO BUILDING(S) SHALL END AT RIGHT OF WAY AS SHOWN ON PLANS AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT END.
34. THE CONTRACTOR SHALL MINIMIZE THE DISRUPTIONS TO THE EXISTING SEWER FLOWS AND THOSE INTERRUPTIONS SHALL BE LIMITED TO FOUR (4) HOURS OR LESS AS DESIGNATED BY THE CITY SEWER DEPARTMENT.
35. LIGHTING CONDUIT SHALL BE SCHEDULE 40 PVC, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRIC CODE. CONTRACTOR SHALL PROVIDE EXCAVATION AND BACKFILL.
36. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
37. DISINFECTION OF WATER MAINS SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH AWWA STANDARD C651, LATEST EDITION. THE BASIC PROCEDURE TO BE FOLLOWED FOR DISINFECTION OF WATER MAINS IS AS FOLLOWS:
 - a. PREVENT CONTAMINATING MATERIALS FROM ENTERING THE WATER MAIN DURING STORAGE, CONSTRUCTION, OR REPAIR.
 - b. REMOVE, BY FLUSHING OR OTHER MEANS, THOSE MATERIALS THAT MAY HAVE ENTERED THE WATER MAINS.
 - c. CHLORINATE ANY RESIDUAL CONTAMINATION THAT MAY REMAIN, AND FLUSH THE CHLORINATED WATER FROM THE MAIN.
 - d. PROTECT THE EXISTING DISTRIBUTION SYSTEM FROM BACKFLOW DUE TO HYDROSTATIC PRESSURE TEST AND DISINFECTION PROCEDURES.
 - e. DETERMINE THE BACTERIOLOGICAL QUALITY BY LABORATORY TEST AFTER DISINFECTION.
 - f. MAKE FINAL CONNECTION OF THE APPROVED NEW WATER MAIN TO THE ACTIVE DISTRIBUTION SYSTEM

GRAPHIC SCALE



Design: JAC Draft: LAZ Date: 04/29/21
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Drawing Name: 21090-PLAN.dwg
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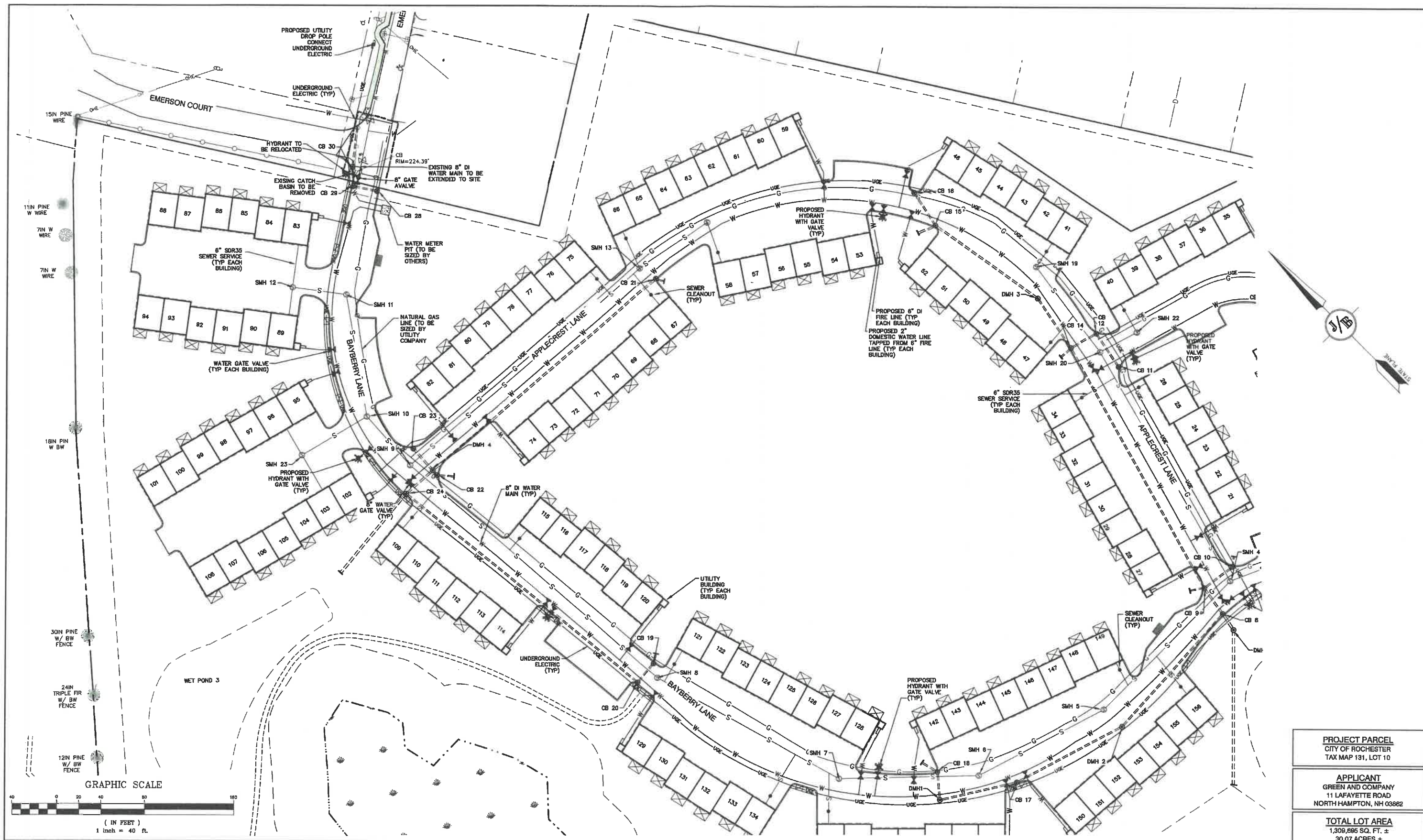


REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

J/B Jones & Beach Engineers, Inc.
55 Portsmouth Ave. PO Box 219 Strafford, NH 03885
Designed and Produced in NH
Civil Engineering Services
603-772-4746 FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **OVERVIEW UTILITY PLAN**
Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No. **OVRU**
SHEET 17 OF 45
JBE PROJECT NO. 21090



Design: JAC Draft: LAZ Date: 04/29/21
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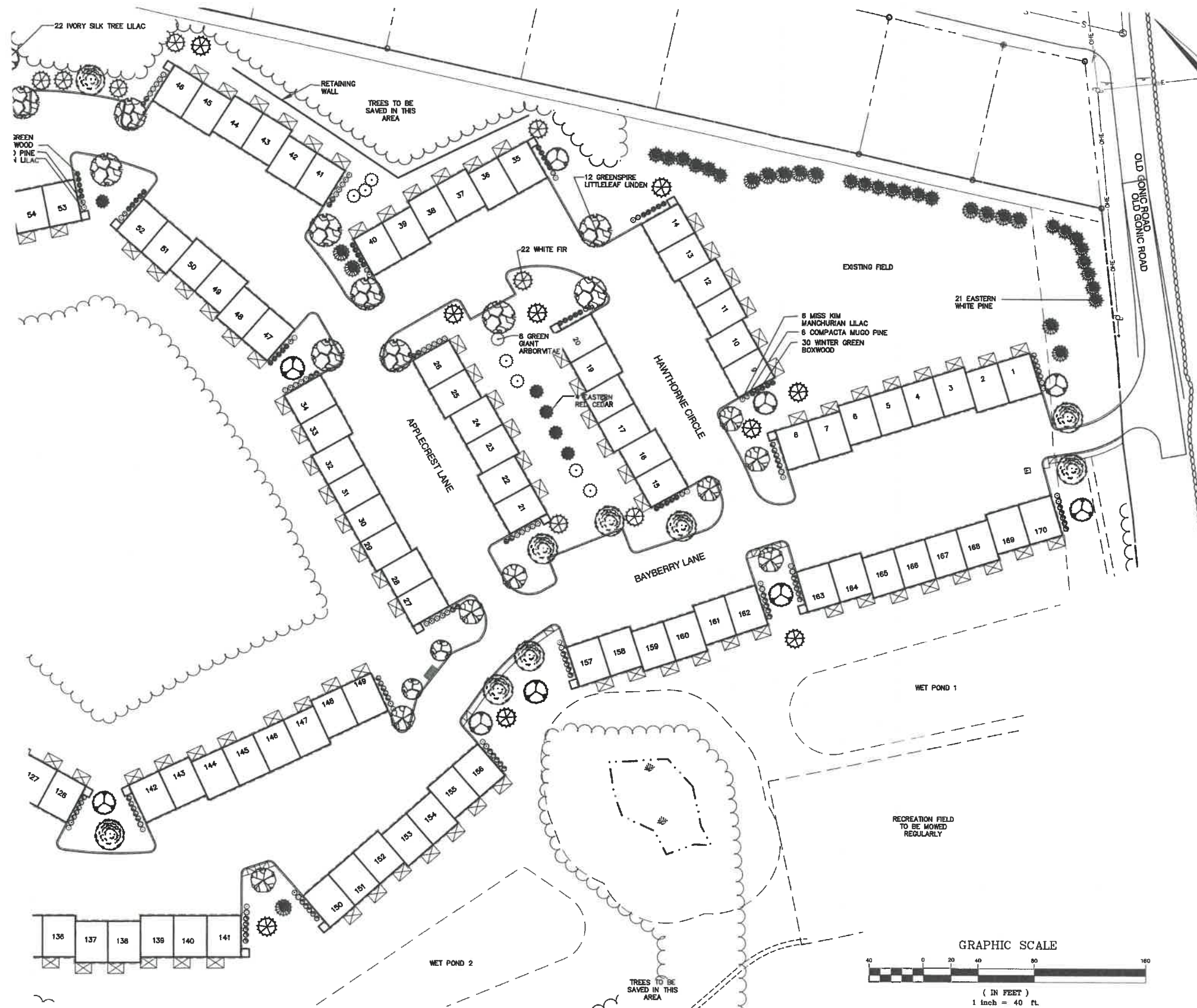
REV.	DATE	REVISION	BY
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Plan Name: **UTILITY PLAN**
Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10
APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862
TOTAL LOT AREA
1,309,696 SQ. FT. ±
30.07 ACRES ±

DRAWING No.
U2
SHEET 19 OF 45
JBE PROJECT NO. 21090



LANDSCAPE NOTES:

1. THE CONTRACTOR SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK.
2. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THE DRAWINGS.
3. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSEYMEN.
4. PLANTS FURNISHED IN CONTAINERS SHALL HAVE THE ROOTS WELL ESTABLISHED IN THE SOIL MASS AND SHALL HAVE AT LEAST ONE (1) GROWING SEASON. ROOT-BOUND PLANTS OR INADEQUATELY SIZED CONTAINERS TO SUPPORT THE PLANT MAY BE DEEMED UNACCEPTABLE.
5. NO PLANT SHALL BE PUT IN THE GROUND BEFORE GRADING HAS BEEN FINISHED AND APPROVED BY THE LANDSCAPE ARCHITECT.
6. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL BE WATERED WEEKLY, OR MORE OFTEN IF NECESSARY, DURING THE FIRST GROWING SEASON.
7. ALL PLANTS SHALL BE GUARANTEED BY THE CONTRACTOR FOR NOT LESS THAN ONE FULL YEAR FROM THE TIME OF PROVISIONAL ACCEPTANCE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE PLANTS TO ENSURE PROPER CARE.
8. BY THE END OF THE GUARANTEE PERIOD, THE CONTRACTOR SHALL HAVE REPLACED ANY PLANT MATERIAL THAT IS MISSING, NOT TRUE TO SIZE AS SPECIFIED, THAT HAS DIED, LOST NATURAL SHAPE DUE TO DEAD BRANCHES, EXCESSIVE PRUNING OR INADEQUATE OR IMPROPER CARE, OR THAT IS, IN THE OPINION OF THE LANDSCAPE ARCHITECT, IN UNHEALTHY OR UNSIGHTLY CONDITION.
9. ALL LANDSCAPE AREAS TO BE GRASS COMMON TO REGION, EXCEPT FOR INTERIOR LANDSCAPED ISLANDS OR WHERE OTHER PLANT MATERIAL IS SPECIFIED.
10. ALL TREES AND SHRUBS SHALL BE PLANTED IN MULCH BEDS WITH EDGE STRIPS TO SEPARATE TURF GRASS AREAS.
11. THE CONTRACTOR SHALL REMOVE WEEDS, ROCKS, CONSTRUCTION ITEMS, ETC. FROM ANY LANDSCAPE AREA SO DESIGNATED TO REMAIN, WHETHER ON OR OFF-SITE. GRASS SEED OR PINE BARK MULCH SHALL BE APPLIED AS DEPICTED ON PLANS.
12. FINISHED GRADES IN LANDSCAPED ISLANDS SHALL BE INSTALLED SO THAT THEY ARE 1" HIGHER THAN THE TOP OF THE SURROUNDING CURB.
13. ALL LANDSCAPING SHALL MEET THE CITY STANDARDS AND REGULATIONS.
14. EXISTING TREES TO REMAIN SHALL BE CLEARLY MARKED PRIOR TO LAND CLEARING ACTIVITIES AND SHALL BE PROTECTED WITH TEMPORARY SNOW FENCING AT THE DRILLING OF THE TREE. THE CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS WITHIN THE LANDSCAPED AREAS. ANY DAMAGE TO EXISTING TREES, SHRUBS OR LAWN SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
15. ALL MULCH AREAS SHALL RECEIVE A 3" LAYER OF SHREDDED PINE BARK MULCH OVER A 10 MIL WEED MAT EQUAL TO "WEEDBLOCK" BY EASY GARDENER OR DEWITT WEED BARRIER.
16. ALL LANDSCAPED AREAS SHALL HAVE SELECT MATERIALS REMOVED TO A DEPTH OF AT LEAST 6" BELOW FINISH GRADE. THE RESULTING VOID IS TO BE FILLED WITH A MINIMUM OF 6" HIGH-QUALITY SCREENED LOAM AMENDED WITH 3" OF AGED ORGANIC COMPOST.
17. THIS PLAN IS INTENDED FOR LANDSCAPING PURPOSES ONLY. REFER TO CIVIL/SITE DRAWINGS FOR OTHER SITE CONSTRUCTION INFORMATION.

JBE 21090 - OLD GONIC RD TOWNHOUSES

TREES - EVERGREEN & DECIDUOUS

Quantity	Botanical Name	Common Name	Size
22	Abies concolor	WHITE FIR	9-10 FT. HT.
25	Acer saccharum 'Green Mountain'	GREEN MOUNTAIN SUGAR MAPLE	3" Caliper
4	Juniperus virginiana	EASTERN RED CEDAR	7-8 FT. HT.
19	Liquidambar styraciflua	SWEETGUM	3" Caliper
25	Picea abies	NORWAY SPRUCE	9-10 FT. HT.
21	Pinus strobus	EASTERN WHITE PINE	9-10 FT. HT.
4	Prunus serrulata 'Kwanzan'	KWANZAN ORIENTAL CHERRY	2.5" Caliper
22	Syringa reticulata 'Ivory Silk'	IVORY SILK TREE LILAC	2.5" Caliper
8	Thuja plicata 'Green Giant'	GREEN GIANT ARBORVITAE	7-8 FT. HT.
12	Tilia cordata 'Greenspire'	GREENSPIRE LITTLELEAF LINDEN	3" Caliper

SHRUBS - EVERGREEN & DECIDUOUS

88	Buxus microphylla var. 'koreana 'Winter Green'	WINTER GREEN BOXWOOD	5 Gallon
20	Chamaecyparis pfitzeri 'Aurea'	GOLDEN THREAD CYPRESS	5 Gallon
12	Hydrangea arborescens 'Annabelle'	ANNABELLE HYDRANGEA	5 Gallon
100	Ilex glabra 'Shamrock'	SHAMROCK INKERRY HOLLY	5 Gallon
12	Juniperus chinensis 'Sea Green'	SEA GREEN JUNIPER	5 Gallon
18	Pinus mugo 'Compacta'	COMPACTA MUGO PINE	5 Gallon
60	Rhododendron 'PJM'	PJM RHODODENDRON	5 Gallon
18	Syringa patula 'Miss Kim'	MISS KIM MANCHURIAN LILAC	5 Gallon
20	Weigela florida 'Alexandra'	WINE & ROSES WEIGELA	5 Gallon

Design: JAC Draft: LAZ Date: 04/28/21
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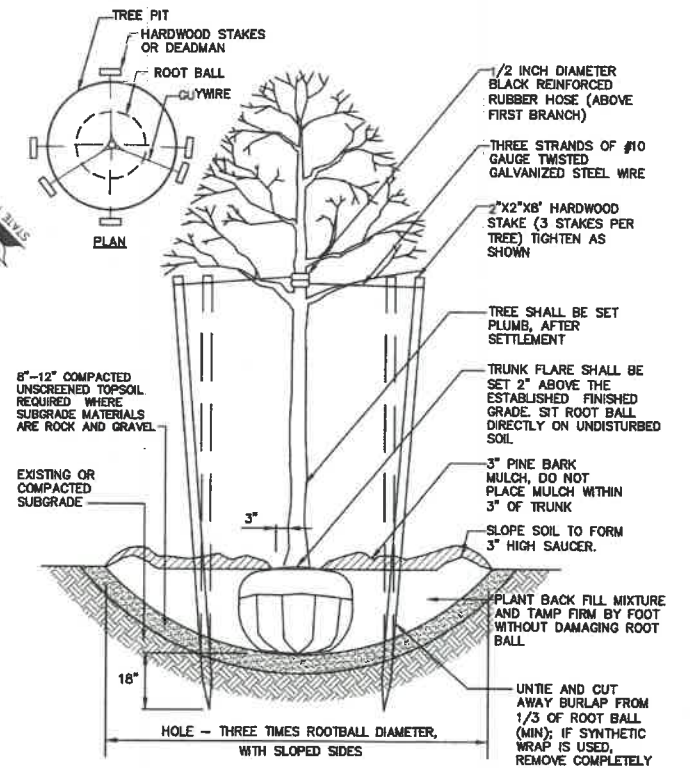
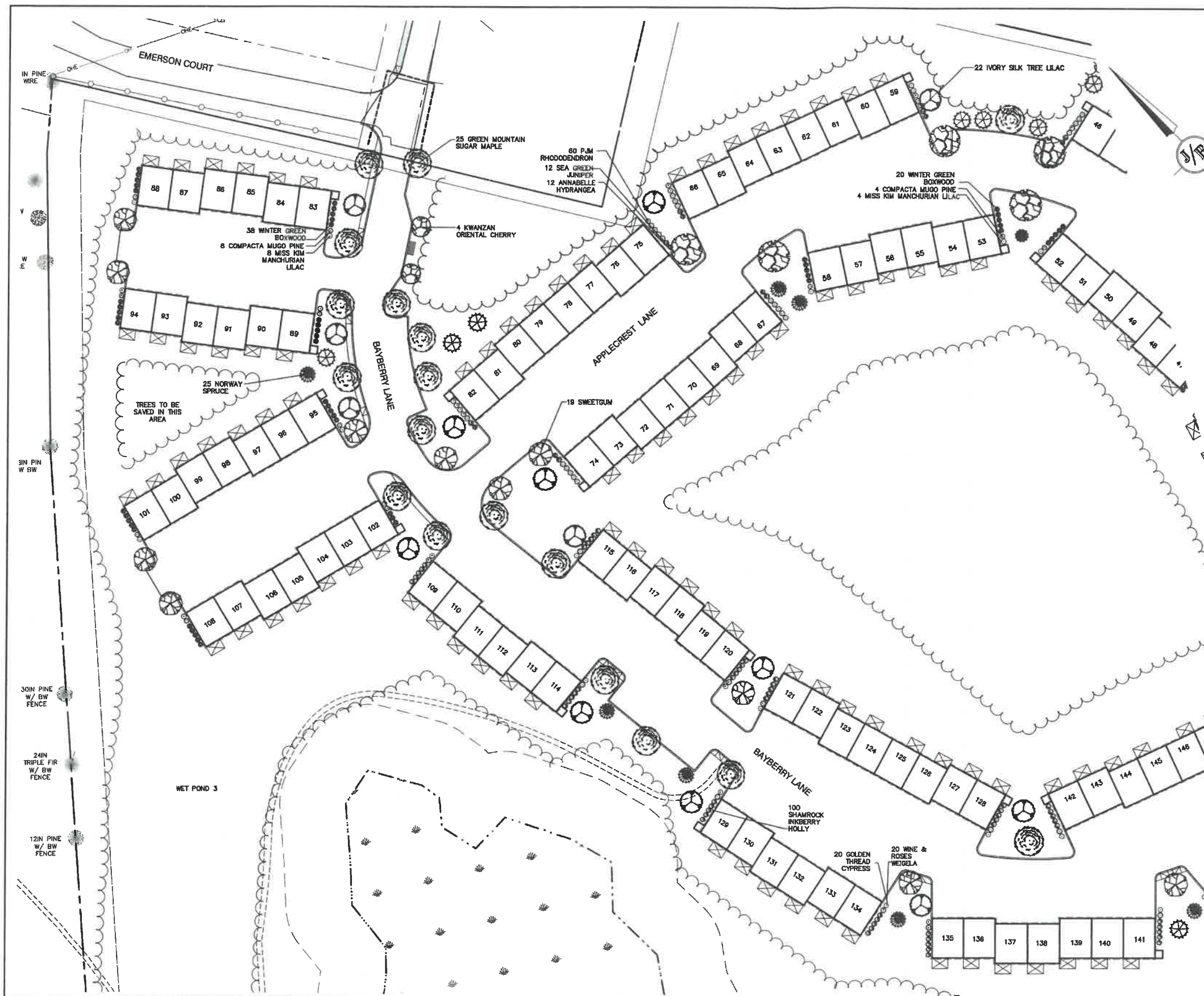


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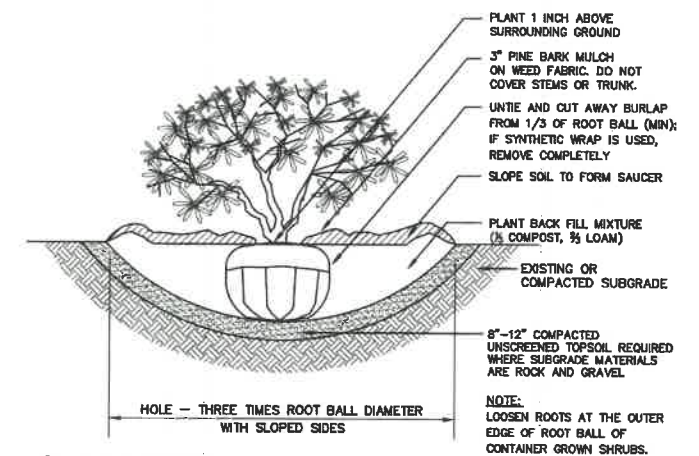
J/B Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **LANDSCAPE PLAN**
Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

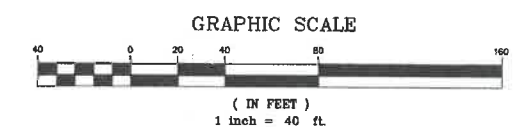
DRAWING No.
L1
SHEET 20 OF 45
JBE PROJECT NO. 21090



TREE PLANTING (FOR TREES UNDER 4" CALIPER)
NOT TO SCALE



SHRUB PLANTING
NOT TO SCALE



PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,809,895 SQ. FT. ±
30.07 ACRES ±

DRAWING No.

L2

SHEET 21 OF 45
JBE PROJECT NO. 21090

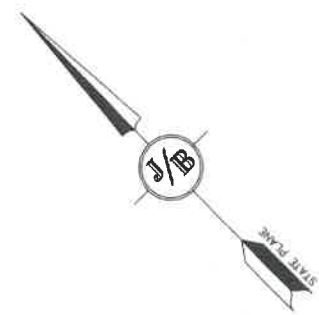
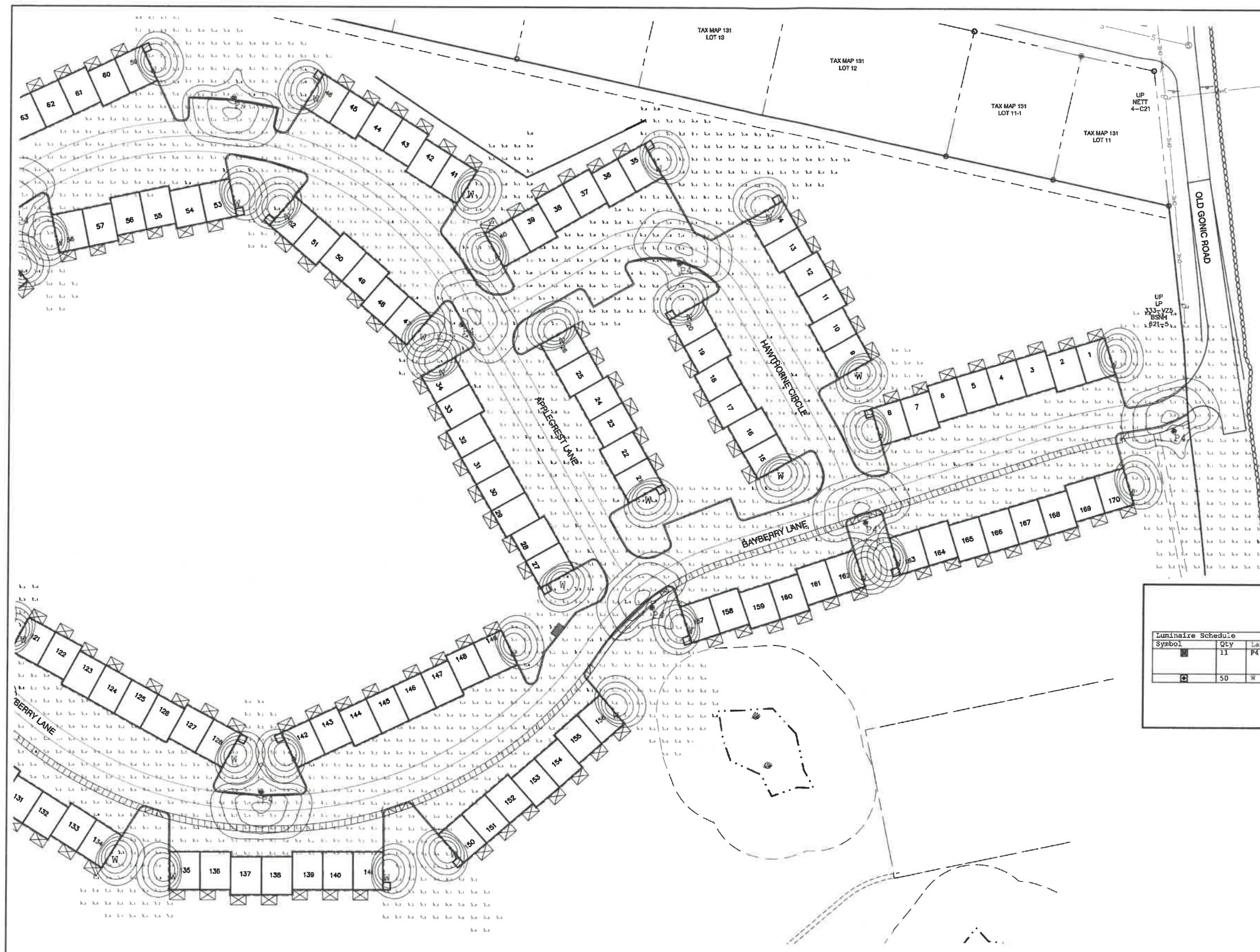
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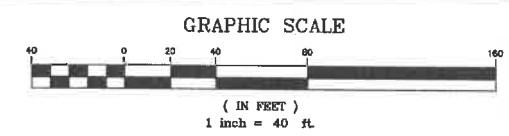
Plan Name: **LANDSCAPE PLAN**
Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148



LIGHTING AND ELECTRICAL NOTES:

1. SITE ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATION OF EASEMENTS, UNDERGROUND UTILITIES AND DRAINAGE BEFORE DRILLING POLE BASES.
2. CONTRACTOR SHALL INSTALL PROPOSED LIGHT POLES ACCORDING TO CITY REGULATIONS.
3. ALL OUTDOOR LIGHTING SYSTEMS SHALL BE EQUIPPED WITH TIMERS TO REDUCE ILLUMINATION LEVELS TO NON-OPERATIONAL VALUES PER CITY REGULATIONS.
4. LIGHTING CONDUIT SHALL BE SCHEDULE 40 PVC, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL PROVIDE EXCAVATION AND BACKFILL.
5. ILLUMINATION READINGS SHOWN ARE BASED ON A TOTAL LLF OF 0.75 AT GRADE. ILLUMINATION READINGS SHOWN ARE IN UNITS OF FOOT-CANDELES.
6. LIGHTING CALCULATIONS SHOWN ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM AND SAFETY.
7. ALL LIGHTING FIXTURES SHALL BE FULL CUT-OFF DARK-SKY COMPLIANT.
8. THE PROPOSED LIGHTING CALCULATIONS AND DESIGN WAS PERFORMED BY CHARRON, INC., P.O. BOX 4550, MANCHESTER, NH 03109, ATTENTION KEN SWENEY. ALL LIGHTS SHOULD BE PURCHASED FROM THIS COMPANY, OR AN EQUAL LIGHTING DESIGN SHOULD BE SUBMITTED FOR REVIEW IF EQUAL SUBSTITUTIONS ARE PROPOSED BY THE CONTRACTOR OR OWNER.

Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
W	11	P4	Single	HER1-FA-40W3K-U-4-N-N-BK / PLB412-4-10-S-125-T300-N-BK (10' POLE)
W	50	W	Single	AXCSIAWT-PC1 / WALL MTD 12' AFG



PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03882

TOTAL LOT AREA
1,309,695 SQ. FT. ±
30.07 ACRES ±

Design: JAC Draft: LAZ Date: 04/29/21
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Drawing Name: 21090-PLAN.dwg

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Stratham, NH 03885

Designed and Produced in NH
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **LIGHTING PLAN**
Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.
L3
SHEET 22 OF 45
JBE PROJECT NO. 21090



Lumark Accent
Well Mount Luminaire

Product Features:

- Ordering Information sheet
- Mounting Details sheet
- Product Replacement sheet
- Energy and Performance Data sheet
- Control Options sheet

Product Certifications:

• **Dimmable Systems**
• Wireless Dim
• ZigBee

Quick Facts:

- Available in 14W - 132W (1,800 - 17,000 lumens)
- Full color and warm white models available
- Energy and maintenance savings up to 90% compared to HPS
- Energy efficient illumination results in up to 144 LPM
- Replaces 20W up to 400W HPS equivalents

Dimensional Details:

• **Mounting Options:** Wall Mount, Pole Mount, Deck Mount

COOPER

PENCO LIGHTING PRODUCTS
A GSI COMPANY

RADIANT™ LED POST TOPS

Specifications and Features:

- Radiant™ LED
- Conformal Coated LED light engine
- CCT: Warm White (2700K), 3000K, 3500K, 4000K, 5000K
- Beam Angle: 120°
- Distribution: 7' & 8' V Type (available in 7' & 8' only)
- Full Color (No Lens) option
- Electrical: 120V/277V, 50/60Hz or 347/480V, 50/60Hz
- 5-10' Standard Drive
- Standard Surge Protection included (50V line-to-line)
- Controls: (Adder)
- 1 per luminaire (optional PC)
- 1 per luminaire (optional PC)
- 1 per luminaire (optional PC)
- Housing: Cast aluminum, 100% recycled 3" die cast
- Finish: Super durable polyester powder coat finish. Custom finishes available, including anodized and all RAL colors.
- ETL listed to UL 1581 standard for wet locations
- LED is IP68 Rated
- Warranty: 5 year limited warranty

HERITAGE

GRAPHIC SCALE
0 20 40 60 80 100
(IN FEET)
1 inch = 40 ft.

Design: JAC Draft: LAZ Date: 04/26/21
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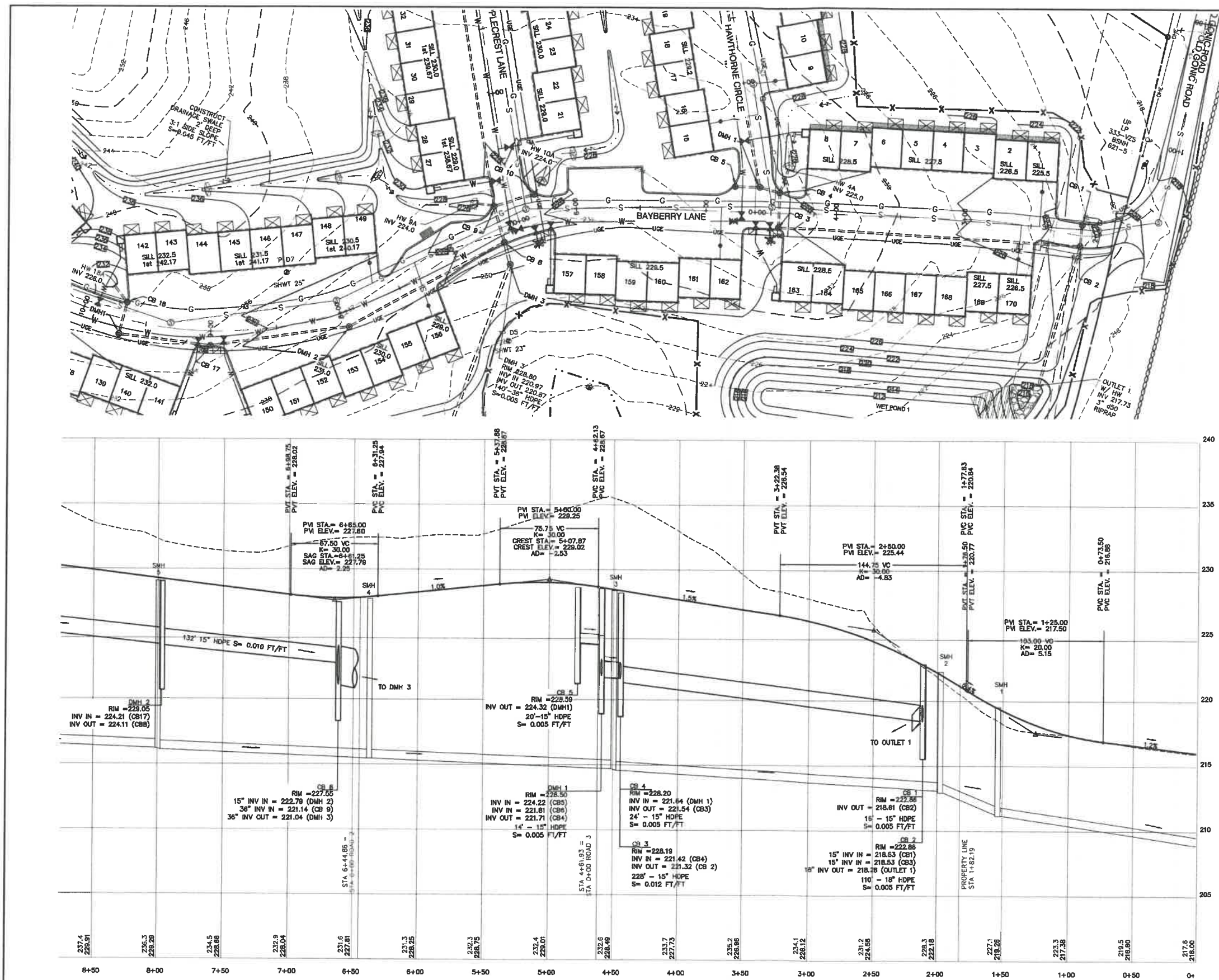
Plan Name: **LIGHTING PLAN**
Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03882

TOTAL LOT AREA
1,309,695 SQ. FT. ±
30.07 ACRES ±

DRAWING No.
L4
SHEET 23 OF 45
JBE PROJECT NO. 21090



NOTES:

- ALL ROAD AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR THE CITY, AND NHDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
- AS-BUILT PLANS TO BE SUBMITTED TO THE CITY PRIOR TO ACCEPTANCE OF THE ROADWAY.
- DEVELOPER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING ANY PERMITTING AND SETBACK REQUIREMENTS REQUIRED UNDER THESE REGULATIONS.
- CONTRACTOR TO COORDINATE AND COMPLETE ALL WORK REQUIRED FOR THE RELOCATION AND/OR INSTALLATION OF ELECTRIC, CABLE, TELEPHONE, AND FIRE ALARM PER UTILITY DESIGN AND STANDARDS. LOCATIONS SHOWN ARE APPROXIMATE. LOW PROFILE STRUCTURES SHALL BE USED TO THE GREATEST EXTENT POSSIBLE.
- THIS PLAN HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC. FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA SHOWN ON THE DESIGN PLANS. THIS INCLUDES ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS OF THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.
- SILTATION AND EROSION CONTROLS SHALL BE INSTALLED PRIOR TO CONSTRUCTION, SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN UNTIL SITE HAS BEEN STABILIZED WITH PERMANENT VEGETATION. SEE DETAIL SHEET E1 FOR ADDITIONAL NOTES ON EROSION CONTROL.
- ALL DISTURBED AREAS NOT STABILIZED BY NOVEMBER 1st SHALL BE COVERED WITH AN EROSION CONTROL BLANKET. PRODUCT TO BE SPECIFIED BY THE ENGINEER.
- FINAL DRAINAGE, GRADING AND EROSION PROTECTION MEASURES SHALL CONFORM TO REGULATIONS OF THE PUBLIC WORKS DEPARTMENT.
- CONTRACTOR TO VERIFY EXISTING UTILITIES AND TO NOTIFY ENGINEER OF ANY DISCREPANCY IMMEDIATELY.
- ROADWAY INTERSECTIONS WITH SLOPE GRANITE CURB SHALL EXTEND AROUND RADIUS WITH 6' STRAIGHT PIECE ALONG TANGENT.
- RETAINING WALLS SHALL BE DESIGNED AND STAMPED BY A LICENSED PROFESSIONAL ENGINEER. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER PRIOR TO INSTALLATION.
- 6" PERFORATED ADS UNDER DRAIN PLACEMENT TO BE DETERMINED BY THE ENGINEER DURING TIME OF SUBGRADE INSPECTION. CONTRACTOR TO ADJUST LOCATION IN THE FIELD ONLY WITH PRIOR APPROVAL OF PROJECT ENGINEER OR PUBLIC WORKS DEPARTMENT.
- ALL DRIVEWAYS TO BE CONSTRUCTED MAXIMUM 10% SLOPE. SEE DETAIL SHEET.
- SIDEWALK TO BE INSTALLED AT TIME OF TOP COURSE PAVING ALONG WITH DRIVEWAY APRONS.
- DRAINAGE INSPECTION AND MAINTENANCE SCHEDULE: SILT FENCING WILL BE INSPECTED DURING AND AFTER STORM EVENTS TO ENSURE THAT THE FENCE STILL HAS INTEGRITY AND IS NOT ALLOWING SEDIMENT TO PASS. SEDIMENT BUILD UP IN SWALES WILL BE REMOVED IF IT IS DEEPER THAN SIX INCHES, AND IS TO BE REMOVED FROM SLOPES BELOW THE INLET OF CULVERTS SEMIANNUALLY, AS WELL AS FROM CATCH BASINS. FOLLOWING MAJOR STORM EVENTS, THE STAGE DISCHARGE OUTLET STRUCTURES ARE TO BE INSPECTED AND ANY DEBRIS REMOVED FROM THE ORIFICE, TRASH TRACK AND EMERGENCY SPILL WAY. INFREQUENTLY, SEDIMENT MAY ALSO HAVE TO BE REMOVED FROM THE SUMP OF THE STRUCTURE.
- ALL DRAINAGE INFRASTRUCTURE SHALL BE INSTALLED AND STABILIZED PRIOR TO DIRECTING ANY RUNOFF TO IT.
- DETENTION PONDS REQUIRE TIMELY MAINTENANCE AND SHOULD BE INSPECTED AFTER EVERY MAJOR STORM EVENT, AS WELL AS FREQUENTLY DURING THE FIRST YEAR OF OPERATION, AND ANNUALLY THEREAFTER. EVERY FIVE YEARS, THE SERVICES OF A PROFESSIONAL ENGINEER SHOULD BE RETAINED TO PERFORM A THOROUGH INSPECTION OF THE DETENTION POND AND ITS INFRASTRUCTURE. ANY DEBRIS AND SEDIMENT ACCUMULATIONS SHOULD BE REMOVED FROM THE OUTLET STRUCTURE(S) AND EMERGENCY SPILLWAY(S) AND DISPOSED OF PROPERLY. DETENTION POND BERMS SHOULD BE MAINTAINED AT LEAST ONCE ANNUALLY SO AS TO PREVENT THE ESTABLISHMENT OF WOODY VEGETATION. TREES SHOULD NEVER BE ALLOWED TO GROW ON A DETENTION POND BERM, AS THEY MAY DESTABILIZE THE STRUCTURE AND INCREASE THE POTENTIAL FOR FAILURE. AREAS SHOWING SIGNS OF EROSION OR THIN OR DYING VEGETATION SHOULD BE REPAIRED IMMEDIATELY BY WHATEVER MEANS NECESSARY, WITH THE EXCEPTION OF FERTILIZER, RODENT BORROWS SHOULD BE REPAIRED IMMEDIATELY AND THE ANIMALS SHOULD BE TRAPPED AND RELOCATED IF THE PROBLEM PERSISTS.
- THE DETENTION PONDS ARE TO BE CONSTRUCTED PRIMARILY THROUGH EXCAVATION. IN THOSE AREAS WHERE THE BERMS MUST BE CONSTRUCTED BY THE PLACEMENT OF FILL, THE ENTIRE EMBANKMENT AREA OF THE DETENTION PONDS SHALL BE EXCAVATED TO PROPOSED GRADE, STRIPPED OF ALL ORGANIC MATERIALS, COMPACTED TO AT LEAST 95% AND SCARIFIED PRIOR TO THE PLACEMENT OF THE EMBANKMENT MATERIAL. IN THE EVENT THE FOUNDATION MATERIAL EXPOSED DOES NOT ALLOW THE SPECIFIED COMPACTION, AN ADDITIONAL ONE FOOT (1') OF EXCAVATION AND THE PLACEMENT OF A ONE FOOT (1') THICK, TWELVE FOOT (12') WIDE PAD OF THE MATERIAL DESCRIBED IN THE NOTE BELOW, COMPACTED TO 95% OF ASTM D-1557 MAY BE NECESSARY. PLACEMENT AND COMPACTION SHOULD OCCUR AT A MOISTURE CONTENT OF OPTIMUM PLUS OR MINUS 3%, AND NO FROZEN OR ORGANIC MATERIAL SHOULD BE PLACED WITHIN FOR ANY REASON.
- EMBANKMENT MATERIAL FOR THE BERMS SHALL BE CLEAN MINERAL SOIL WITH A CLAY COMPONENT FREE OF ROOTS, ORGANIC MATTER, AND OTHER DELETERIOUS SUBSTANCES, AND SHALL CONTAIN NO ROCKS OR LUMPS OVER FOUR INCHES (4") IN DIAMETER. THIS MATERIAL SHOULD BE INSTALLED IN 6" LIFTS AND COMPACTED TO 95% OF ASTM D-1557, AND SHOULD MEET THE FOLLOWING SPECIFICATIONS: 4" PASSING 100%, #4 SIEVE 25-70%, #200 SIEVE 10-25% (IN TOTAL SAMPLE).
- EMBANKMENT IS TO HAVE 3:1 SIDE SLOPES (MAX.) AND IS TO BE BROUGHT TO SPECIFIED GRADES PRIOR TO THE ADDITION OF LOAM (4" MINIMUM) SO AS TO ALLOW FOR THE COMPACTION OF THE STRUCTURE OVER TIME WHILE MAINTAINING THE PROPER BERM ELEVATION.
- COMPACTION TESTING SERVICES (I.E. NUCLEAR DENSITY TESTS) ARE TO BE PERFORMED BY AN INDEPENDENT GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR FOR ROADWAY CONSTRUCTION, AND ON THE FOUNDATION OF THE BERM AND ON EVERY LIFT OF NEWLY PLACED MATERIAL.
- SLOPED GRANITE CURB TO BE TIPPED DOWN AT ALL DRIVEWAY ENTRANCES BY THE CONTRACTOR.

GRAPHIC SCALE

(IN FEET)

1 inch = 40 ft Horiz.

1 inch = 4 ft Vert.

BAYBERRY LANE

Design: JAC Draft: LAZ Date: 04/29/21
 Checked: JAC Scale: AS NOTED Project No.: 21090
 Drawing Name: 21090-PLAN.dwg
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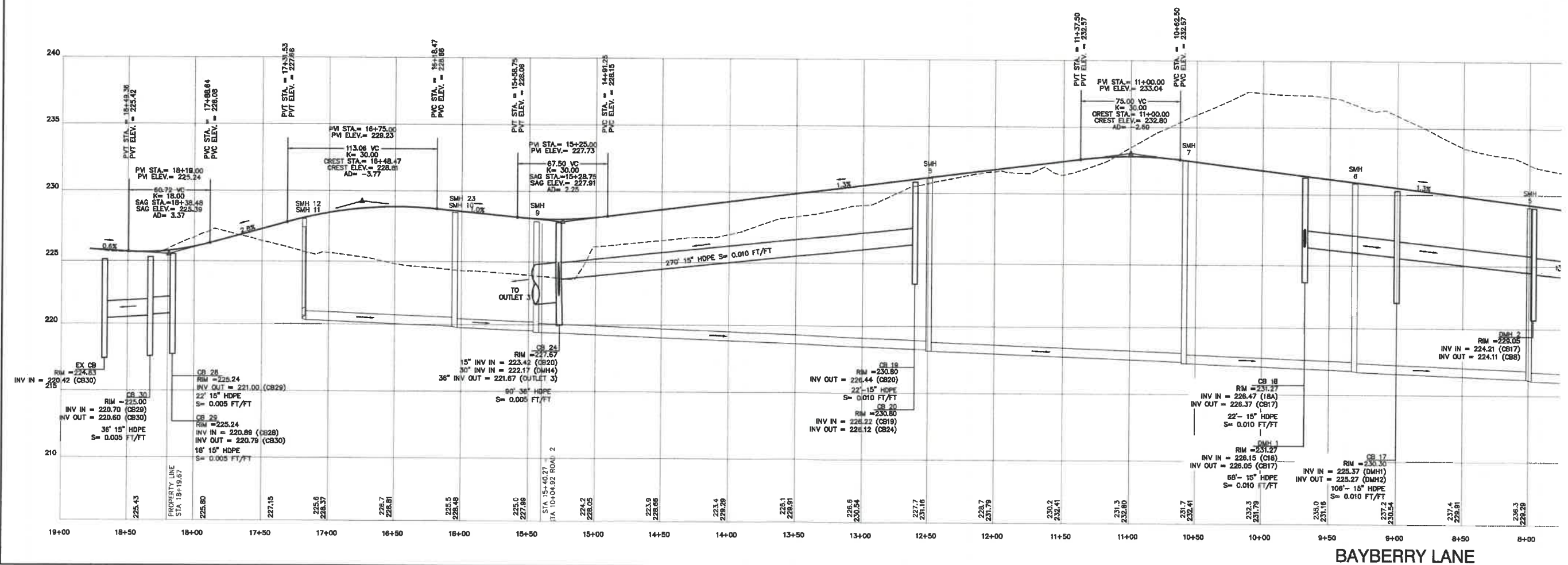
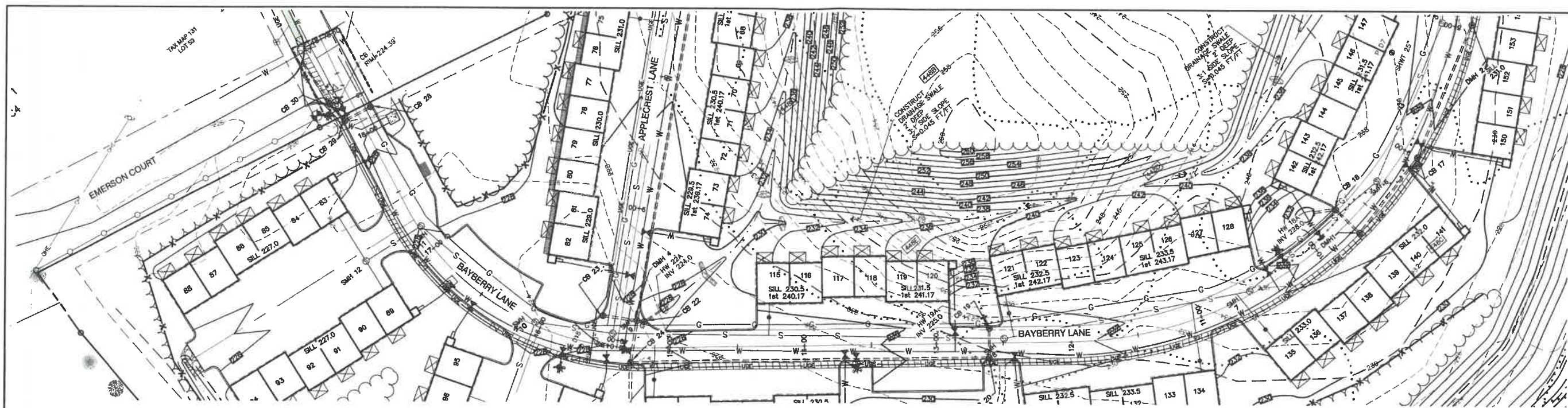


REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
 Civil Engineering Services
 85 Portsmouth Ave.
 PO Box 219
 Stratham, NH 03885
 603-772-4746
 FAX: 603-772-0227
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **PLAN AND PROFILE**
 Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
 Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.
P1
 SHEET 24 OF 45
 JBE PROJECT NO. 21090



Design: JAC Draft: LAZ Date: 04/20/21
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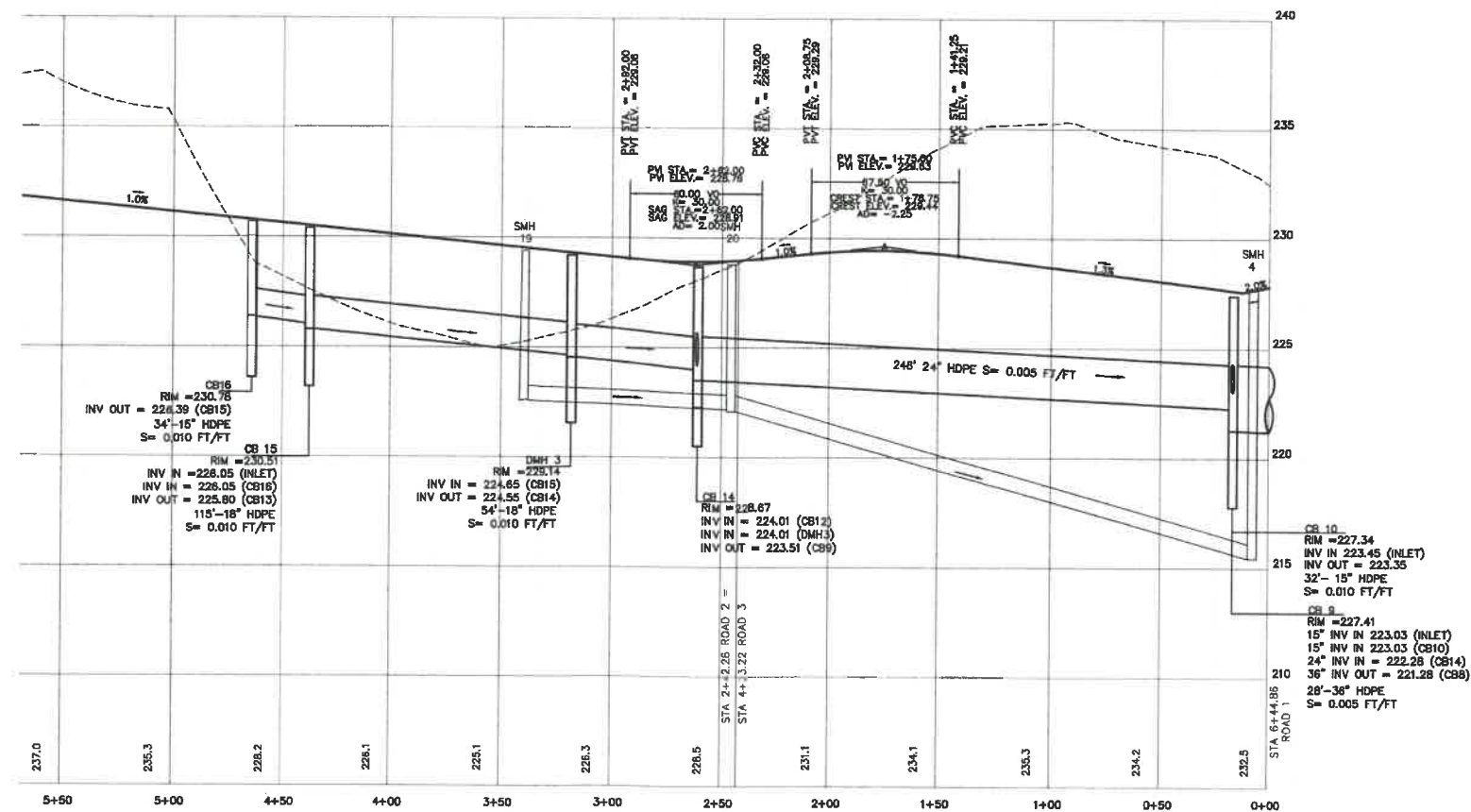
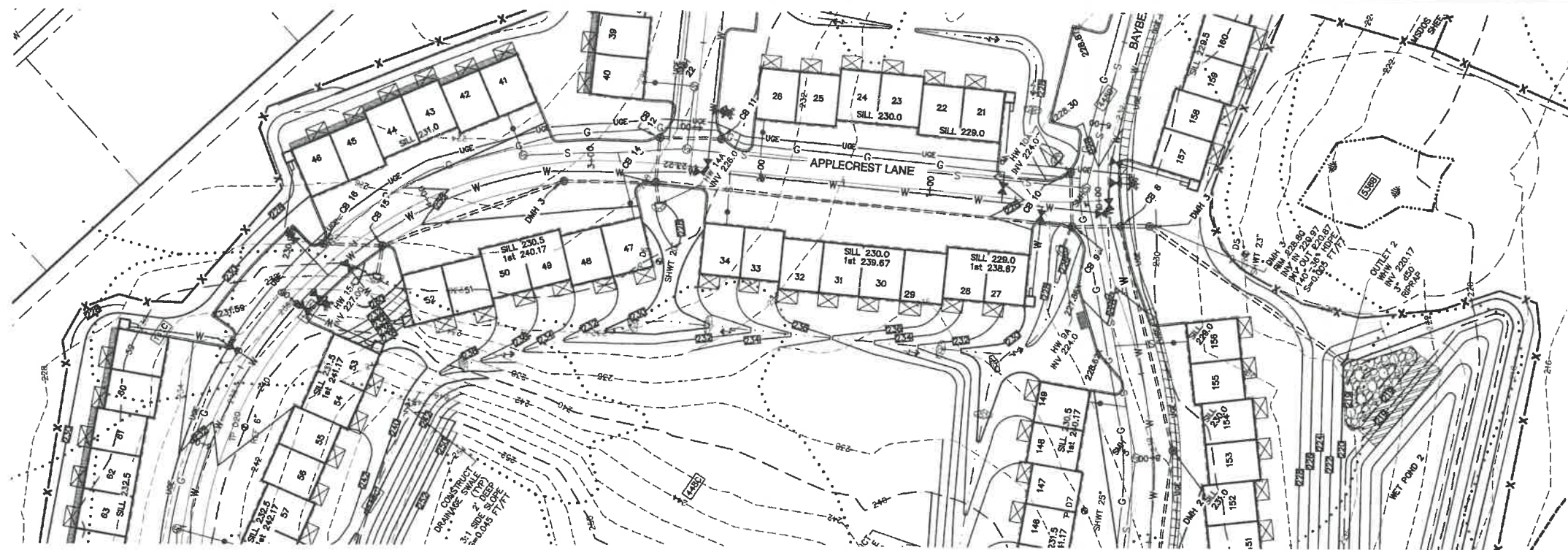


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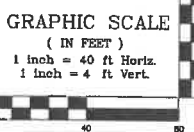
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DRAWING No. **P2**
 SHEET 25 OF 45
 JBE PROJECT NO. 21090



APPLECREST LANE



Design: JAC Draft: LAZ Date: 04/29/21
 Checked: JAC Scale: AS NOTED Project No.: 21090
 Drawing Name: 21090-PLAN.dwg
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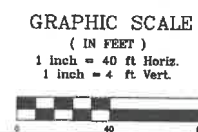
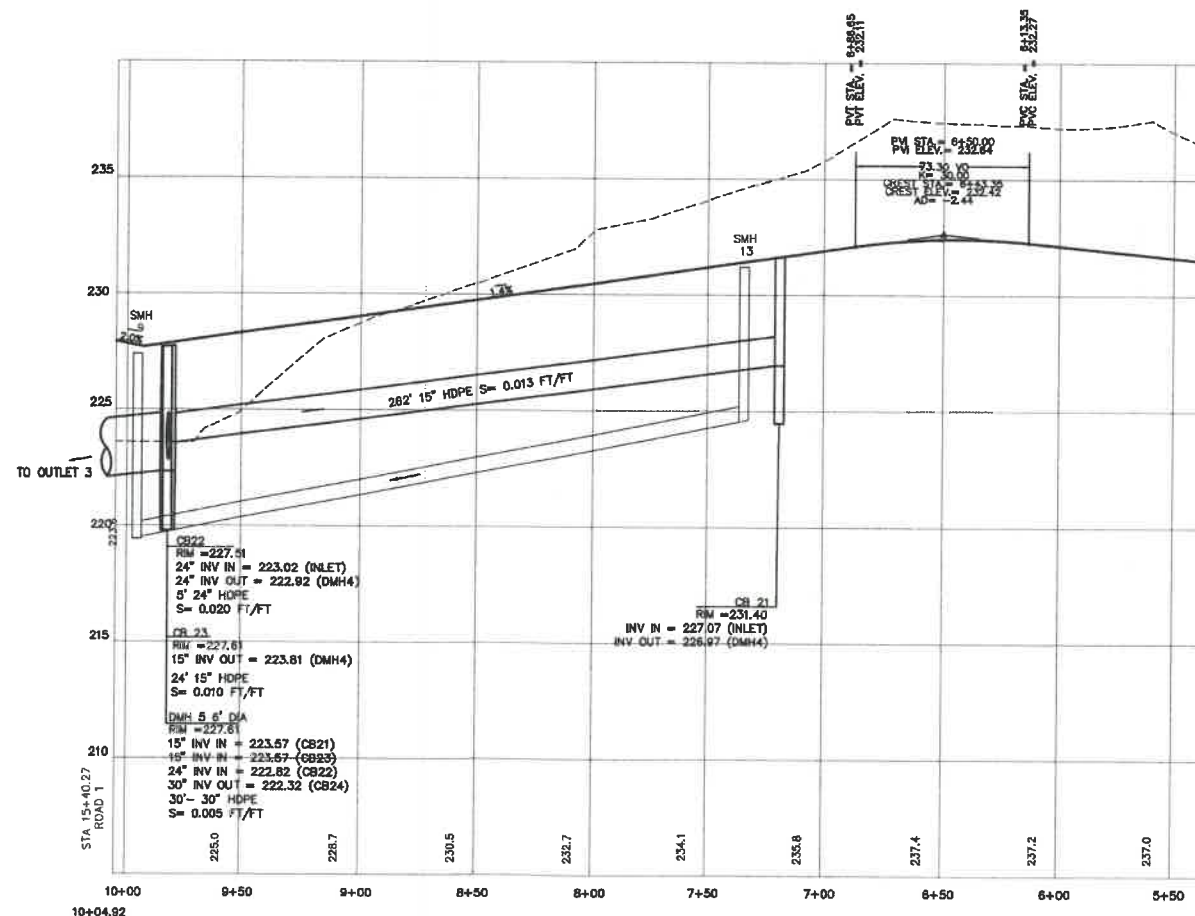
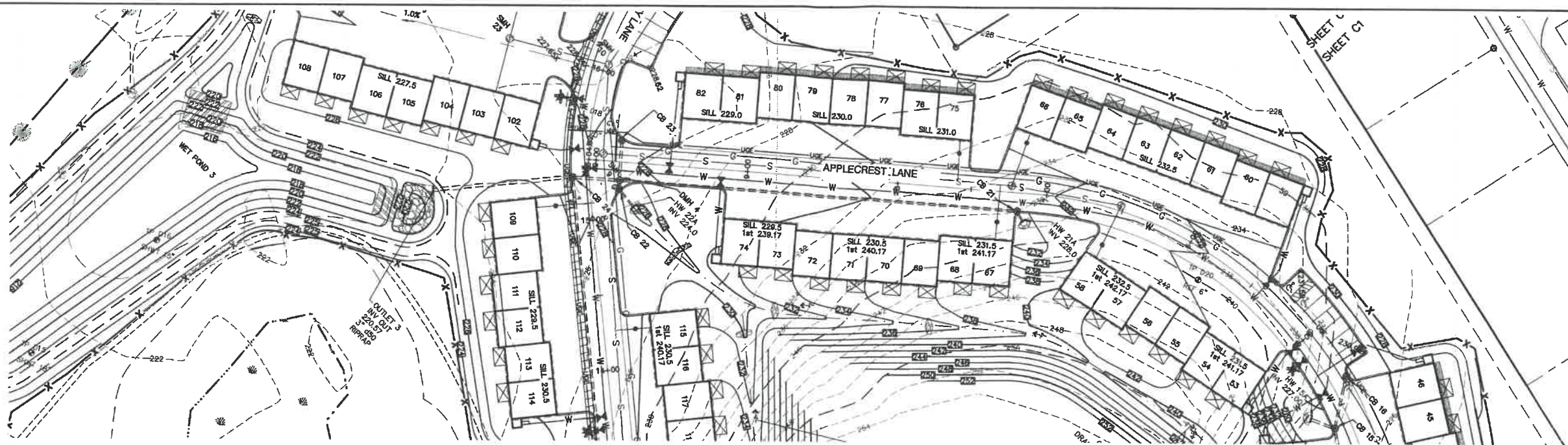


REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
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0	11/23/21	ISSUED FOR REVIEW	LAZ

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Plan Name:	PLAN AND PROFILE
Project:	BAYBERRY COMMONS 19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record:	LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE 19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.
P3
 SHEET 26 OF 45
 JBE PROJECT NO. 21090



APPLECREST LANE

Design: JAC Draft: LAZ Date: 04/29/21
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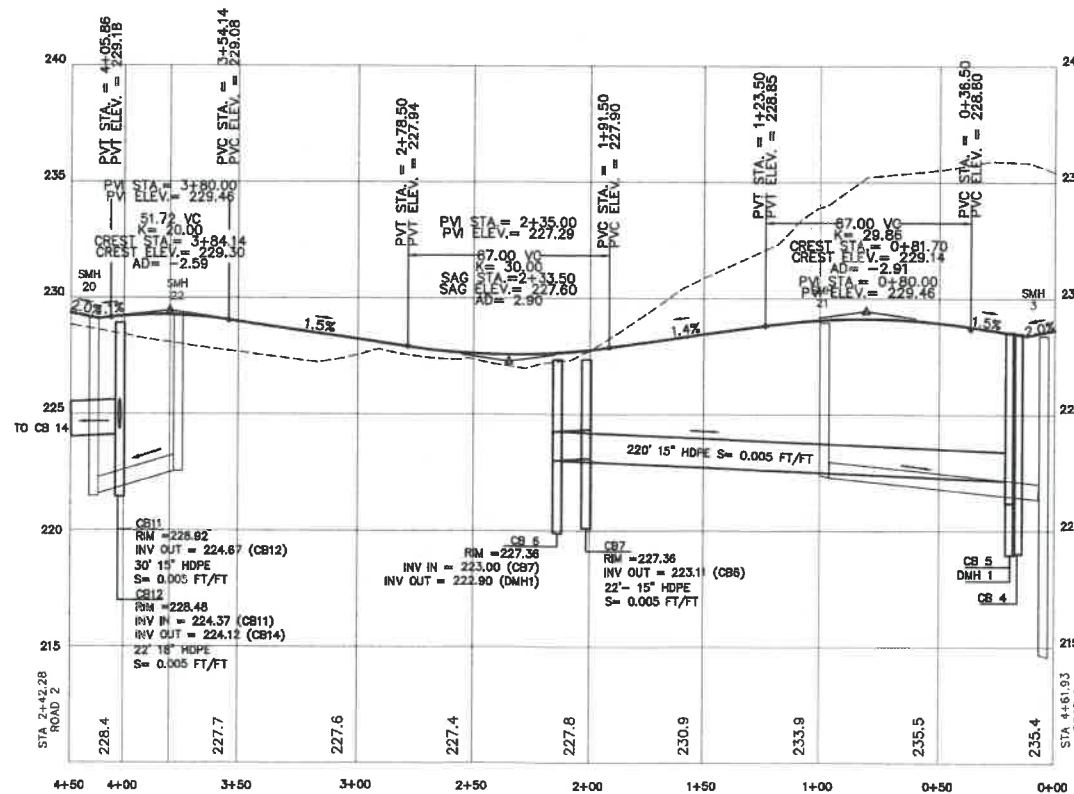
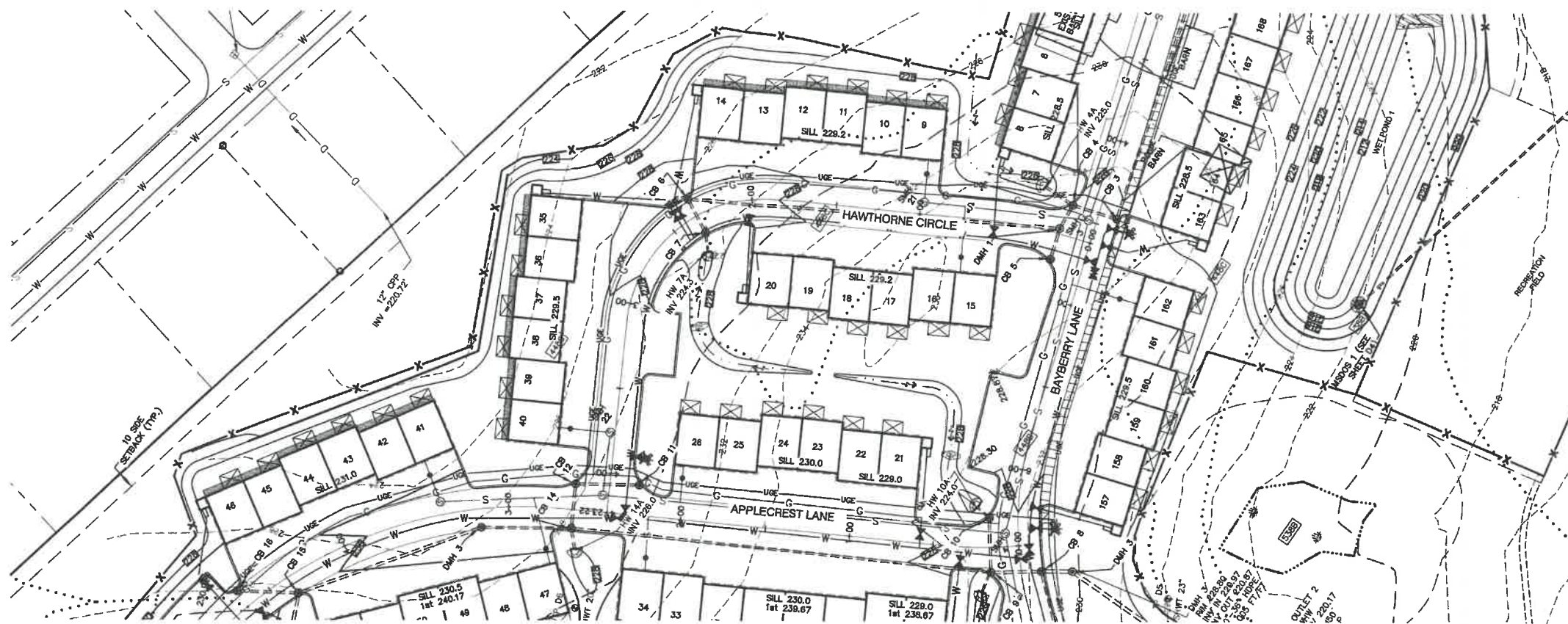
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Plan Name: **PLAN AND PROFILE**
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19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

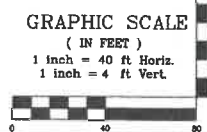
DRAWING No.

P4

SHEET 27 OF 45
 JBE PROJECT NO. 21090



HAWTHORNE CIRCLE



Design: JAC Draft: LAZ Date: 04/29/21
 Checked: JAC Scale: AS NOTED Project No.: 21090
 Drawing Name: 21090-PLAN.dwg
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19 OLD GONIC ROAD, ROCHESTER, NH
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DRAWING No.
P5
 SHEET 28 OF 45
 JBE PROJECT NO. 21090



GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft Horiz.
1 inch = 4 ft Vert.

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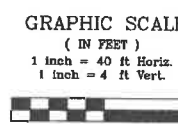
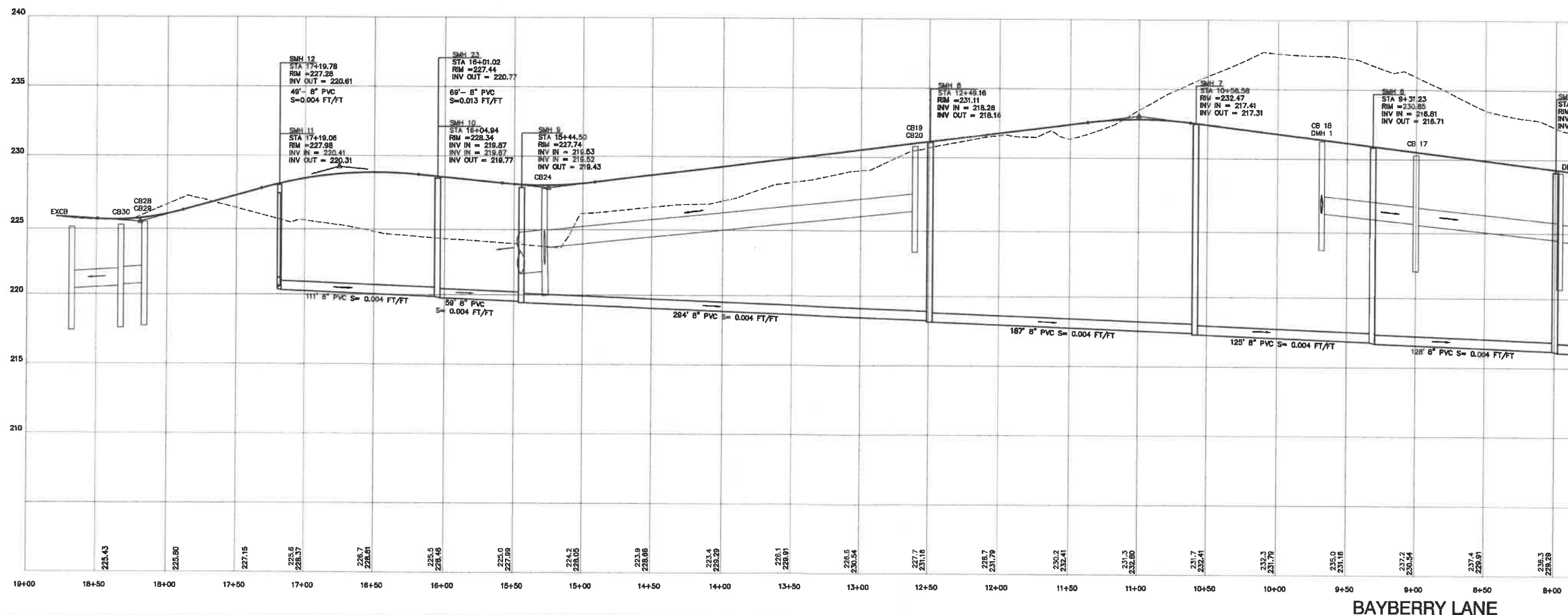
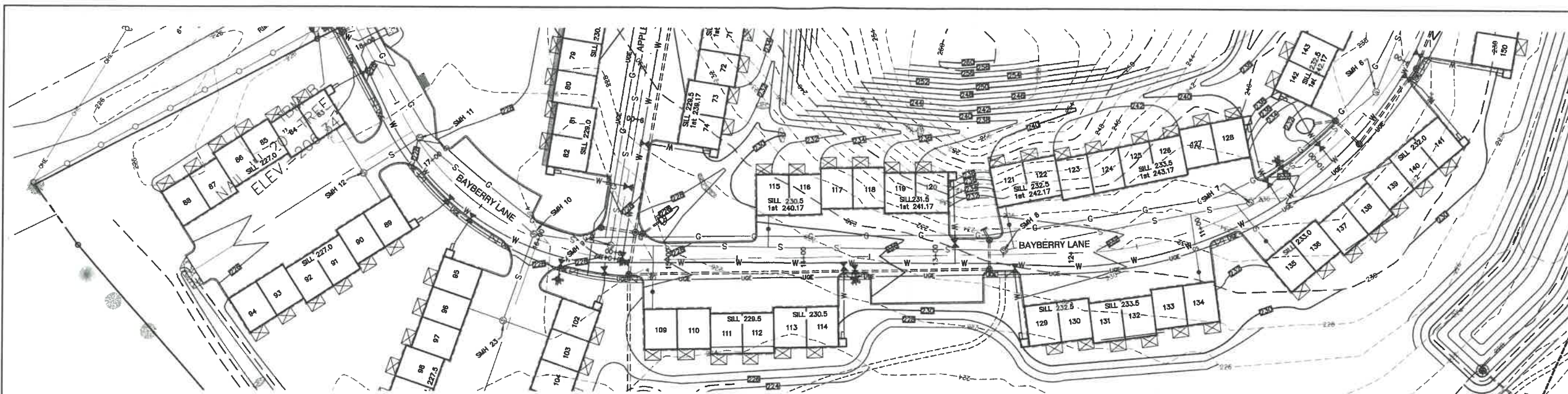


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4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
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0	11/23/21	ISSUED FOR REVIEW	LAZ

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Plan Name: **SEWER PLAN AND PROFILE**
Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.
P6
SHEET 28 OF 45
JBE PROJECT NO. 21090



Design: JAC Draft: LAZ Date: 04/29/21
 Checked: JAC Scale: AS NOTED Project No.: 21090
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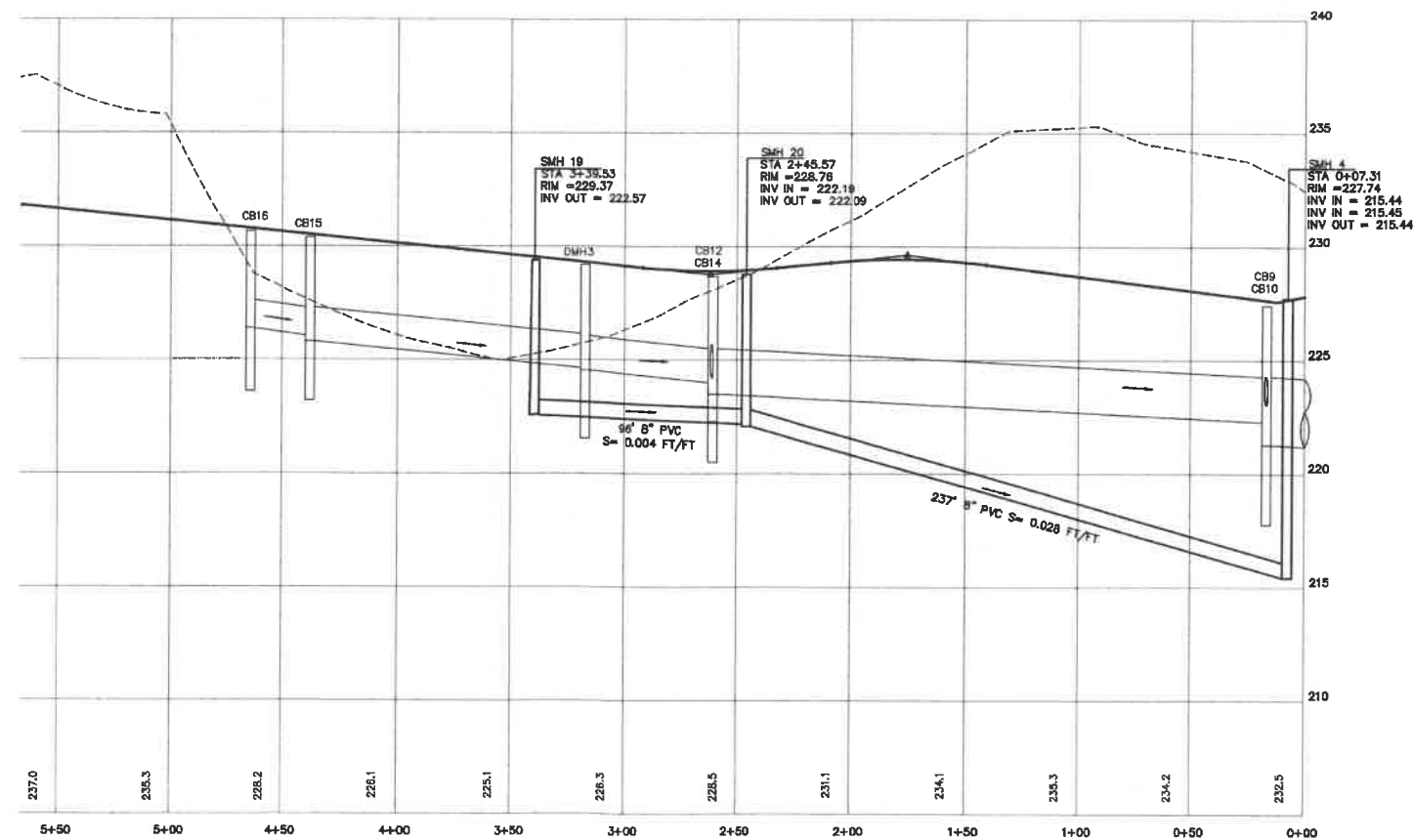
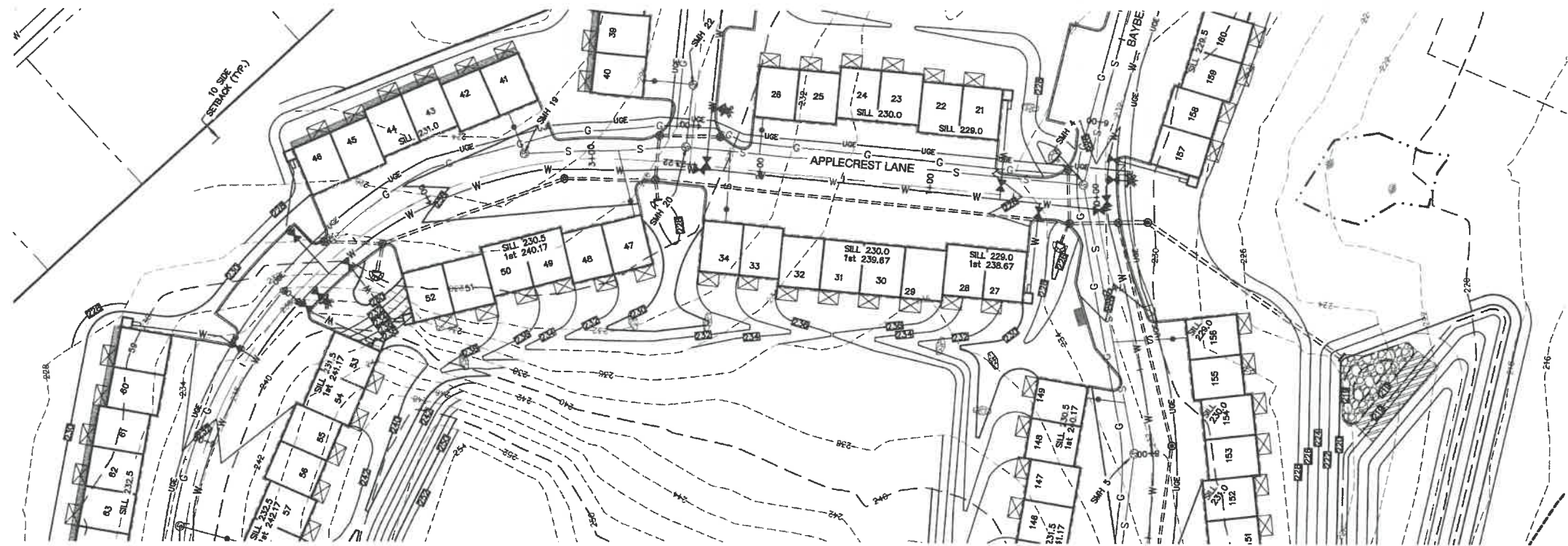


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Plan Name: **SEWER PLAN AND PROFILE**
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19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No. **P7**
 SHEET 30 OF 45
 JBE PROJECT NO. 21090



APPLECREST LANE

GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft Horiz.
1 inch = 4 ft Vert.

Design: JAC Draft: LAZ Date: 04/29/21
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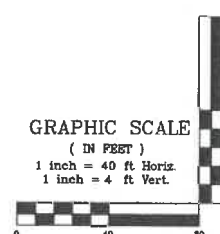
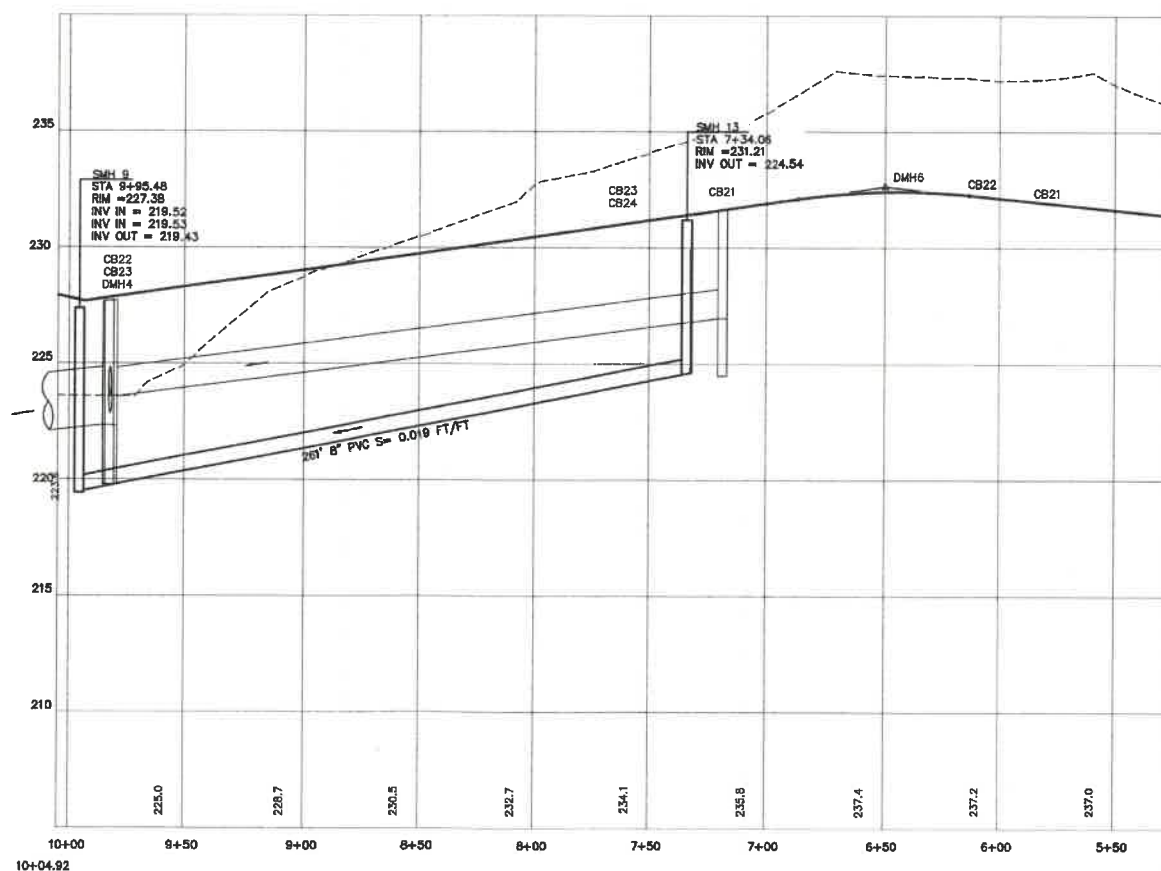
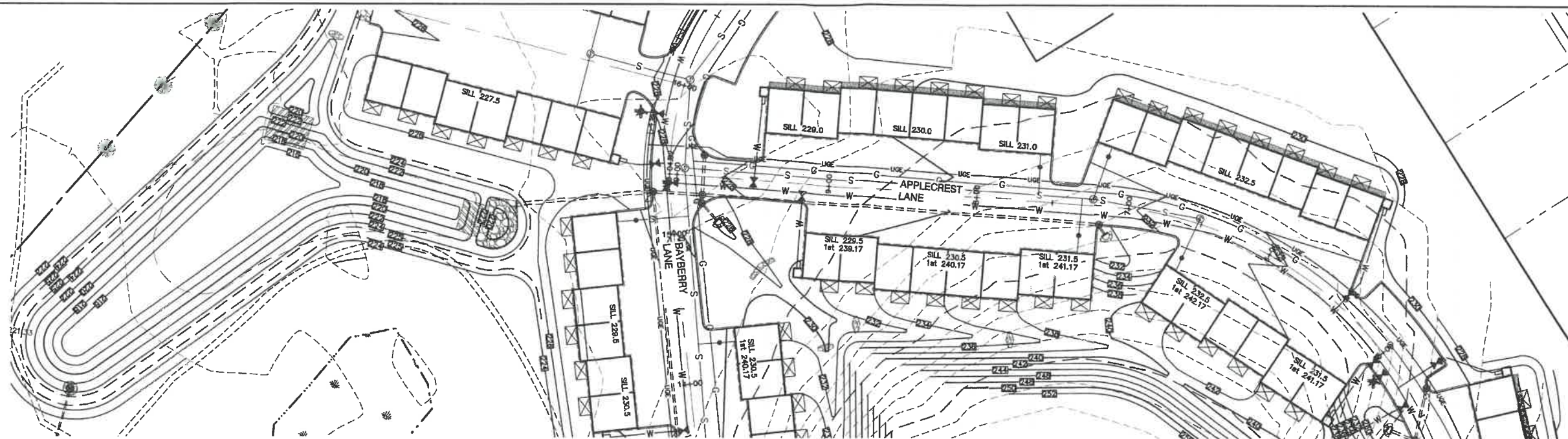


REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
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Plan Name: **SEWER PLAN AND PROFILE**
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19 OLD GONIC ROAD, ROCHESTER, NH**
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148**

DRAWING No.
P8
SHEET 31 OF 45
JBE PROJECT NO. 21090



APPLECREST LANE

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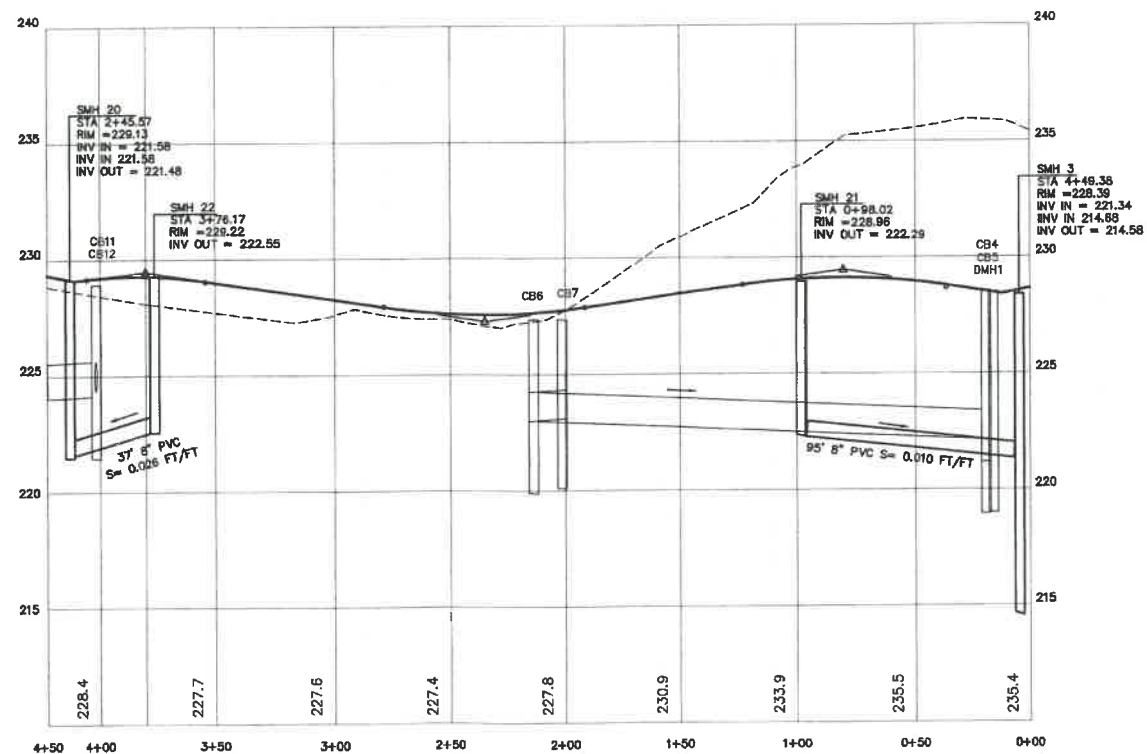
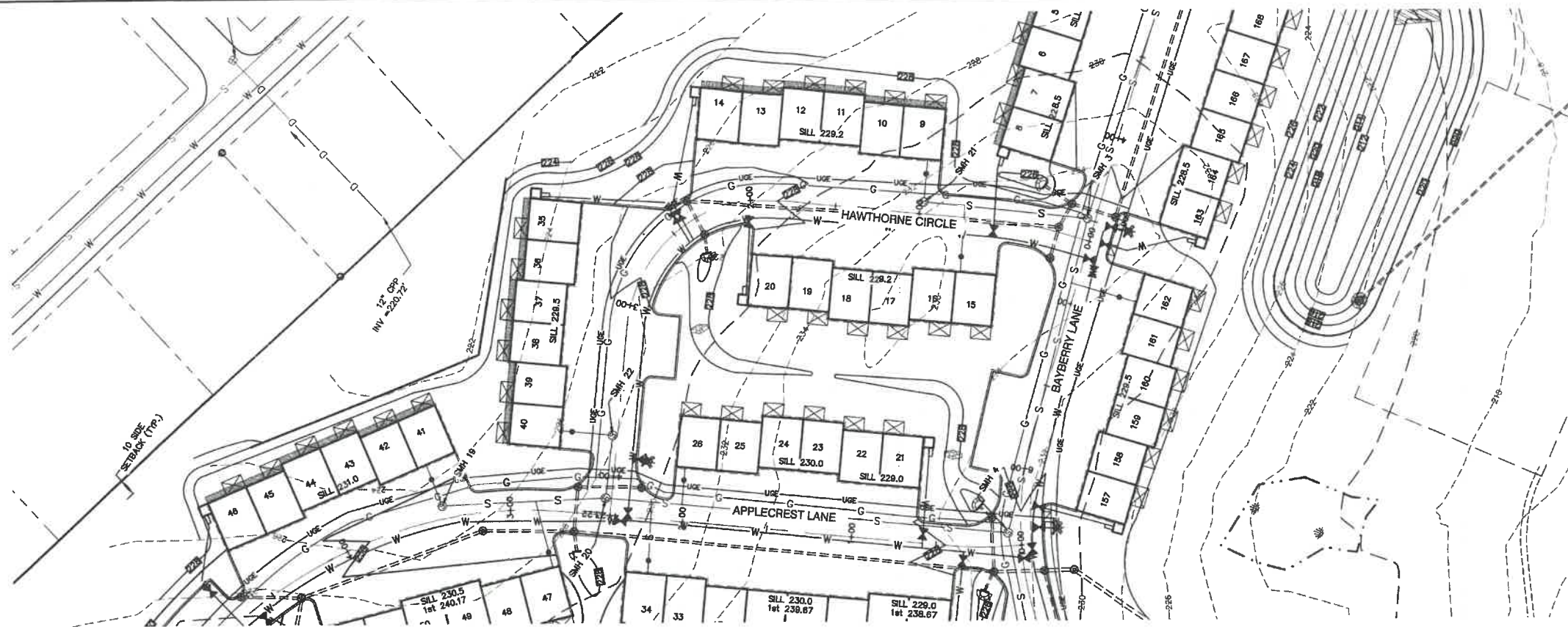


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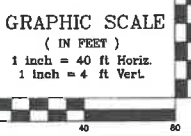
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19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No. **P9**
 SHEET 32 OF 48
 JBE PROJECT NO. 21090



HAWTHORNE CIRCLE



Design: JAC Draft: LAZ Date: 04/29/21
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 Drawing Name: 21090-PLAN.dwg
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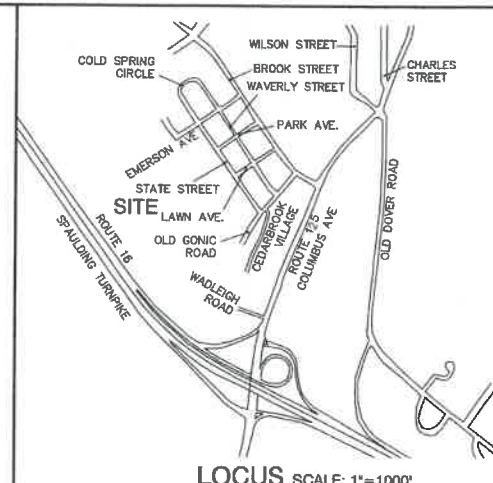
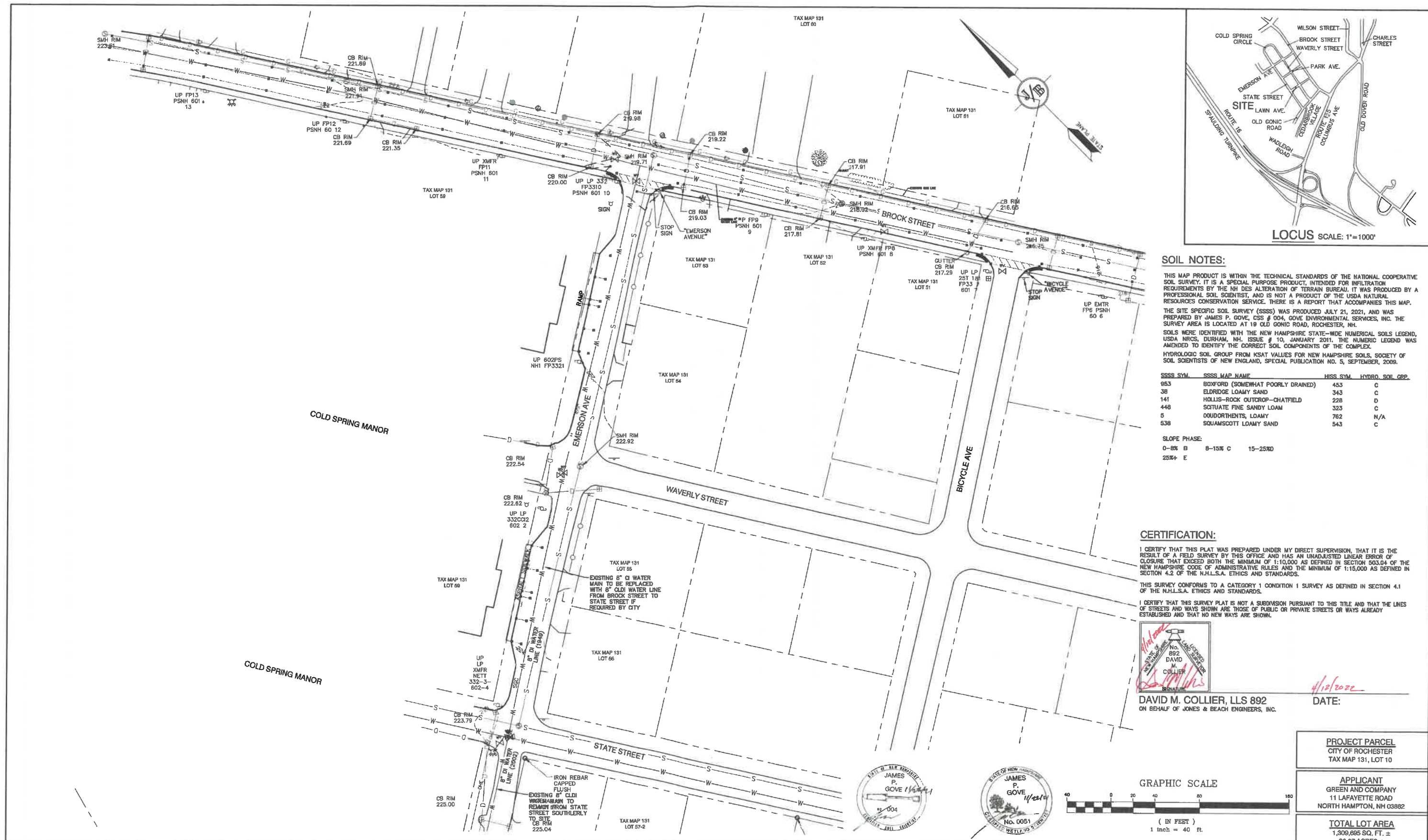


REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
 Civil Engineering Services
 85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
 603-772-4746 FAX: 603-772-0227
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **SEWER PLAN AND PROFILE**
 Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
 Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.
P10
 SHEET 38 OF 45
 JBE PROJECT NO. 21090



SOIL NOTES:

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP.

THE SITE SPECIFIC SOIL SURVEY (SSSS) WAS PRODUCED JULY 21, 2021, AND WAS PREPARED BY JAMES P. GOVE, CSS # 004, GOVE ENVIRONMENTAL SERVICES, INC. THE SURVEY AREA IS LOCATED AT 19 OLD GONIC ROAD, ROCHESTER, NH.

SOILS WERE IDENTIFIED WITH THE NEW HAMPSHIRE STATE-WIDE NUMERICAL SOILS LEGEND, USDA NRCS, DURHAM, NH, ISSUE # 10, JANUARY 2011. THE NUMERIC LEGEND WAS AMENDED TO IDENTIFY THE CORRECT SOIL COMPONENTS OF THE COMPLEX.

HYDROLOGIC SOIL GROUP FROM KSTAT VALUES FOR NEW HAMPSHIRE SOILS, SOCIETY OF SOIL SCIENTISTS OF NEW ENGLAND, SPECIAL PUBLICATION NO. 5, SEPTEMBER, 2009.

SSSS SYM.	SSSS MAP NAME	HISS SYM.	HYDRO. SOIL GRP.
953	BOXFORD (SOMEWHAT POORLY DRAINED)	453	C
38	ELDRIDGE LOAMY SAND	343	C
141	HOLLIS-ROCK OUTCROP-CHATFIELD	228	D
448	SCITUATE FINE SANDY LOAM	323	C
5	ODDORIENTS, LOAMY	762	N/A
538	SQUAMSCOTT LOAMY SAND	543	C

SLOPE PHASE:

0-8% B 8-15% C 15-25% D
25%+ E

CERTIFICATION:

I CERTIFY THAT THIS PLAT WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEEDS BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 503.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

THIS SURVEY CONFORMS TO A CATEGORY 1 CONDITION 1 SURVEY AS DEFINED IN SECTION 4.1 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

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.



DAVID M. COLLIER, LLS 892
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

DATE: 4/12/2022

PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03882

TOTAL LOT AREA
1,309,695 SQ. FT. ±
30.07 ACRES ±

Design: JAC Draft: LAZ Date: 04/29/21
Checked: JAC Scale: AS NOTED Project No.: 21090
Drawing Name: 21090-PLAN.dwg

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.



4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ
REV.	DATE	REVISION	BY

J/B Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885

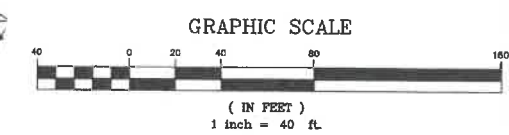
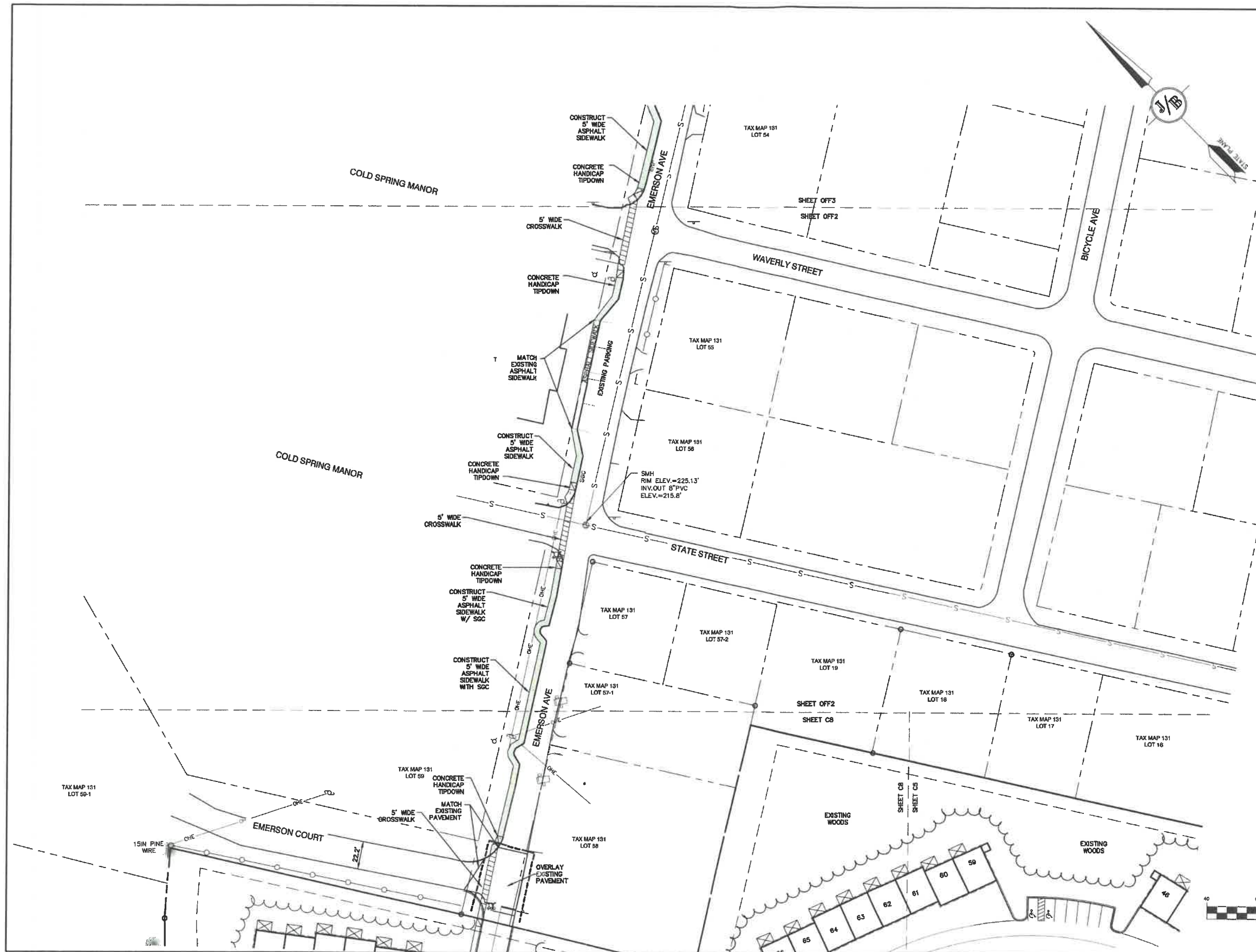
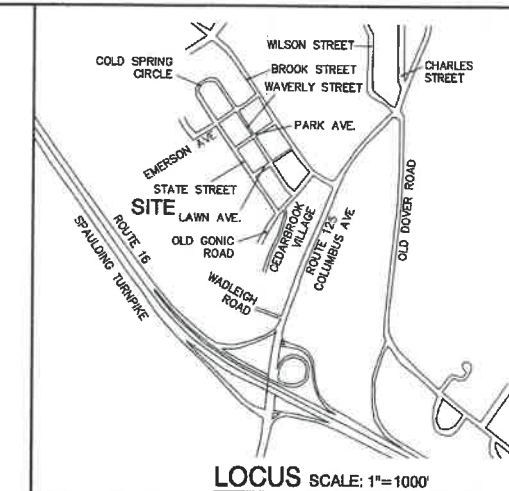
603-772-4749
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **OFFSITE EXISTING CONDITIONS PLAN**

Project: **BAYBERRY COMMONS
19 OLD GONIC ROAD, ROCHESTER, NH**

Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148**

DRAWING No.
OFF1
SHEET 34 OF 45
JBE PROJECT NO. 21090



<p><u>PROJECT PARCEL</u> CITY OF ROCHESTER TAX MAP 131, LOT 10</p>
<p><u>APPLICANT</u> GREEN AND COMPANY 11 LAFAYETTE ROAD NORTH HAMPTON, NH 03862</p>
<p><u>TOTAL LOT AREA</u> 1,309,695 SQ. FT. ± 30.07 ACRES ±</p>

Design: JAC	Draft: LAZ	Date: 04/29/21
Checked: JAC	Scale: AS NOTED	Project No.: 21090
Drawing Name: 21090-PLAN.dwg		

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4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ
REV.	DATE	REVISION	BY

J/B Jones & Beach Engineers, Inc.

85 Portsmouth Ave.
PO Box 218
Stratham, NH 03885

Civil Engineering Services

Designed and Produced in NH

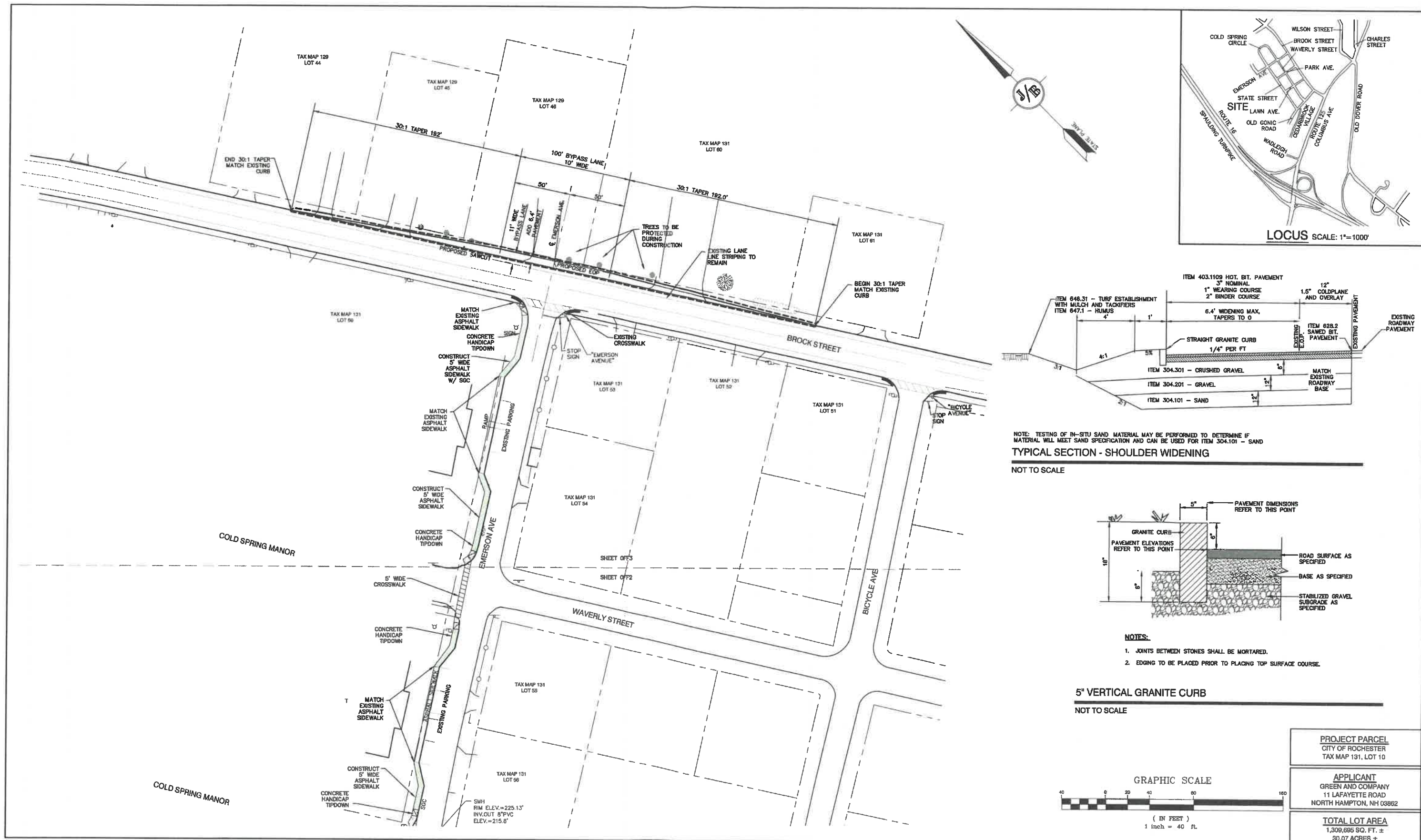
803-772-4746
FAX: 803-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	OFFSITE SITE PLAN
Project:	BAYBERRY COMMONS 19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record:	LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE 19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG.148

DRAWING No.

OFF2

SHEET 35 OF 45
JBE PROJECT NO. 21090



Design: JAC Draft: LAZ Date: 04/26/21
 Checked: JAC Scale: AS NOTED Project No.: 21090
 Drawing Name: 21090-PLAN.dwg
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REV.	DATE	REVISION	BY
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3	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

J/B Jones & Beach Engineers, Inc.
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 Stratham, NH 03885
 603-772-4746
 FAX: 603-772-0227
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **OFFSITE SITE PLAN**
 Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
 Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

PROJECT PARCEL
 CITY OF ROCHESTER
 TAX MAP 131, LOT 10

APPLICANT
 GREEN AND COMPANY
 11 LAFAYETTE ROAD
 NORTH HAMPTON, NH 03862

TOTAL LOT AREA
 1,309,695 SQ. FT. ±
 30.07 ACRES ±

DRAWING No.
OFF3
 SHEET 36 OF 45
 JBE PROJECT NO. 21090



Design: JAC Draft: LAZ Date: 04/29/21
Checked: JAC Scale: AS NOTED Project No.: 21090
Drawing Name: 21090-PLAN.dwg
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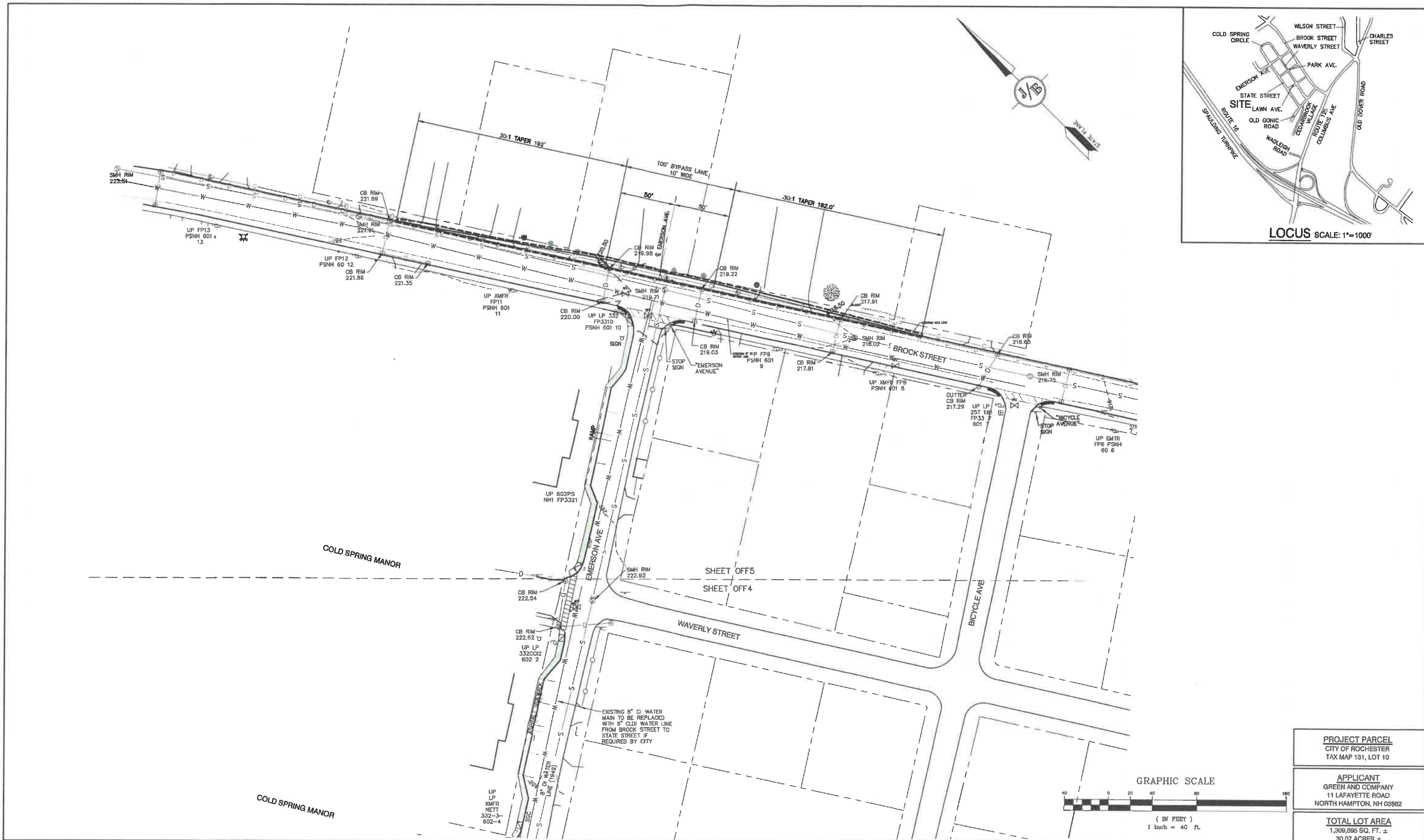


REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
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1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

J/B Jones & Beach Engineers, Inc.
Civil Engineering Services
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Designed and Produced in NH
603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **OFFSITE GRADING AND UTILITY PLAN**
Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No. **OFF4**
SHEET 37 OF 45
JBE PROJECT NO. 21090



Design: JAC Draft: LAZ Date: 04/20/21
Checked: JAC Scale: AS NOTED Project No.: 21090
Drawing Name: 21090-PLAN.dwg
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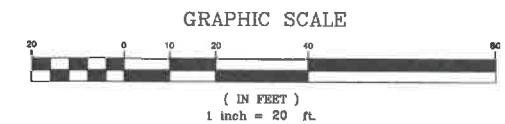
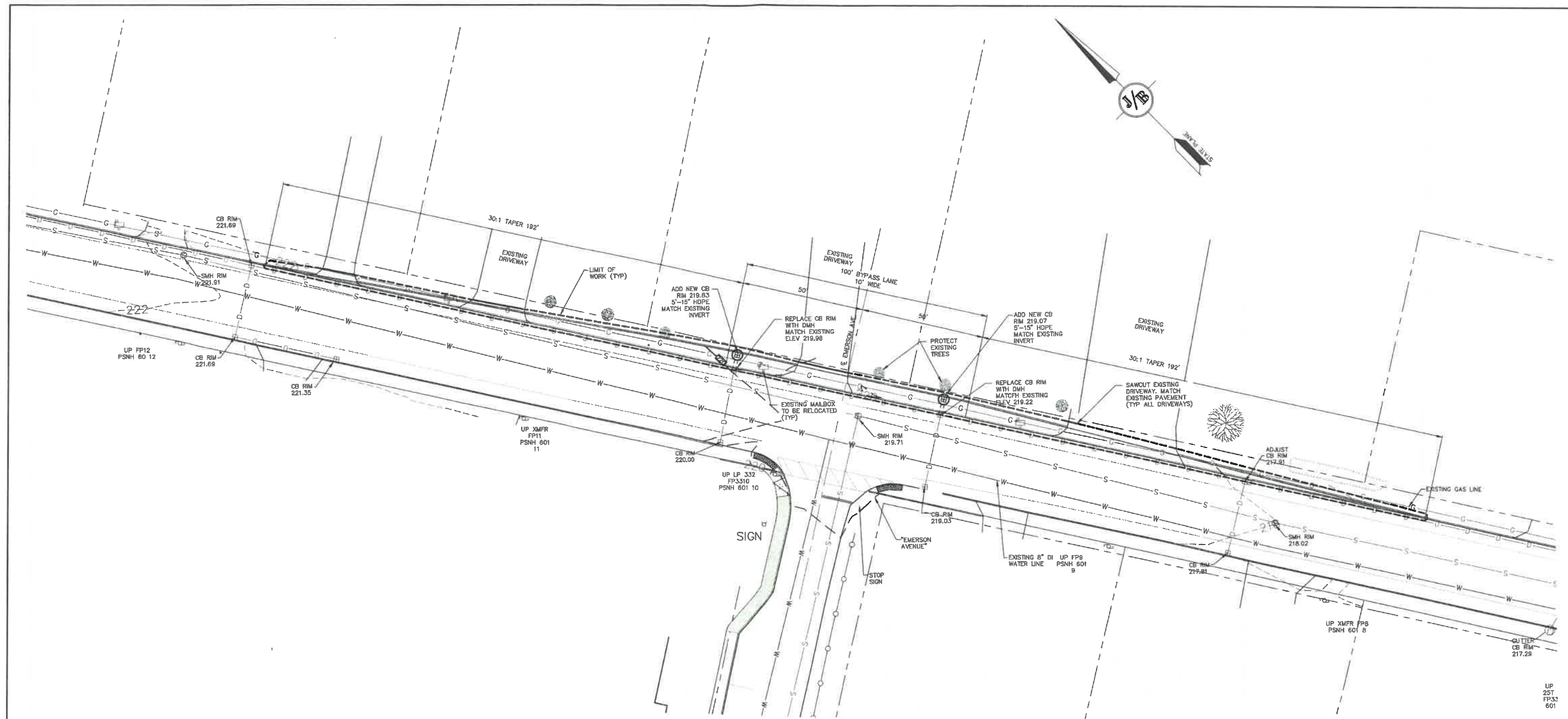


REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
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1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

J/B Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 218
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Designed and Produced in NH
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **OFFSITE GRADING AND UTILITY PLAN**
Project: **BAYBERRY COMMONS**
19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE**
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.
OFF5
SHEET 38 OF 45
JBE PROJECT NO. 21090



PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,309,695 SQ. FT. ±
30.07 ACRES ±

Design: JAC Draft: LAZ Date: 04/29/21
Checked: JAC Scale: AS NOTED Project No.: 21090
Drawing Name: 21090-PLAN.dwg
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REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
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1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

J/B Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 218
Stratham, NH 03885
603-772-4748
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **OFFSITE GRADING AND UTILITY PLAN**
Project: **BAYBERRY COMMONS
19 OLD GONIC ROAD, ROCHESTER, NH**
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148**

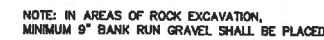
DRAWING No.

OFF6

SHEET 39 OF 45
JBE PROJECT NO. 21090



1. TRANSVERSE CROSSWALK LINES SHALL BE THERMOPLASTIC, NOT LESS THAN 6" WIDE AND NOT LESS THAN 6' APART.
2. SPACING FOR THE CONTINENTAL CLOCK MARKINGS SHALL BE UNIFORM FOR EACH INDIVIDUAL CROSSWALK BUT CAN BE MODIFIED FOR ONE CROSSWALK TO THE NEXT TO ELIMINATE A CROSSWALK MARKING DIRECTLY IN THE WHEELPATH.



NOT TO SCALE



1. CURB TO BE PLACED PRIOR TO PLACING TOP SURFACE COURSE.
2. JOINTS BETWEEN STONES SHALL BE MORTARED.



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J/B Jones & Beach Engineers, Inc.

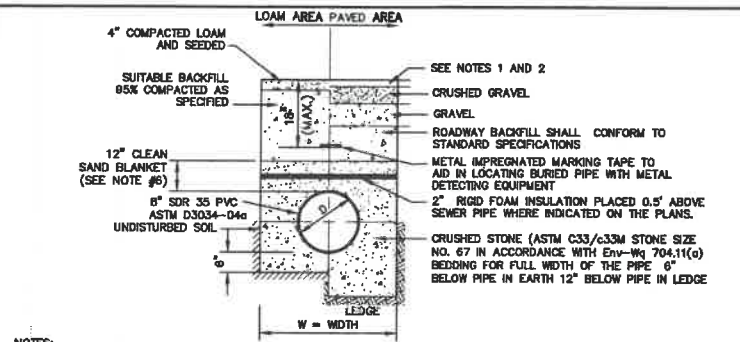
85 Portsmouth Ave. *Civil Engineering Services* 903-772-4746
PO Box 219
Stratham, NH 03865 FAX: 903-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	DETAIL SHEET
Project:	BAYBERRY COMMONS 19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record:	LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE 19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.

D1

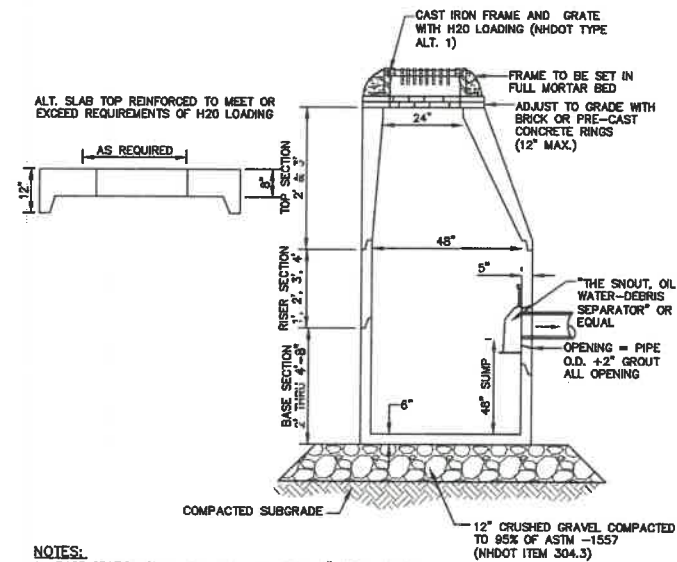
SHEET 40 OF 45
JBE PROJECT NO. 21090



- NOTES:**
1. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO PAVEMENT DETAILS.
 2. NEW ROADWAY CONSTRUCTION SHALL CONFORM TO SUBDIVISION SPECIFICATIONS.
 3. TRENCH BACKFILL SHALL CONFORM WITH ENV. W_q 704.11(h) AND BE FREE OF DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT OR CLAY, EXCAVATED LEDGE OR ROCKS OVER SIX INCHES.
 4. W = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12" INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, WIDTH SHALL BE NO MORE THAN 36"; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, WIDTH SHALL BE 24 INCHES PLUS PIPE O.D. WIDTH SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
 5. RIGID FOAM INSULATION TO BE PROVIDED WHERE COVER IN THE ROADWAY IS LESS THAN 6" AND CROSS COUNTRY IS LESS THAN 4", PURSUANT TO DES WAIVER BEING ISSUED.
 6. PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND, FREE FROM ORGANIC MATERIALS, GRADED SUCH THAT 100% PASSES A 1/2" SIEVE AND A MAXIMUM OF 15% PASSES A #200 SIEVE IN ACCORDANCE WITH ENV-W_q 704.11(d).
 7. JOINT SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL AND CERTIFIED BY THE MANUFACTURER AS CONFORMING TO THE ASTM D3212 STANDARD IN EFFECT WHEN THE JOINT SEALS WERE MANUFACTURED, AND SHALL BE PUSH-ON, BELL-AND-SPOUT TYPE PER ENV-W_q 704.05 (a).

SEWER TRENCH

NOT TO SCALE



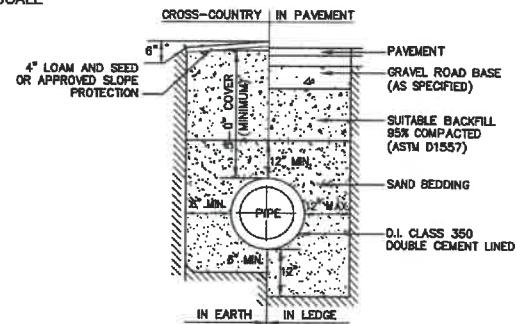
- NOTES:**
1. BASE SECTION SHALL BE MONOLITHIC WITH 48" INSIDE DIAMETER.
 2. ALL SECTIONS SHALL BE DESIGNED FOR H2O LOADING.
 3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
 4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H2O LOADING.
 5. PROVIDE "Y" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
 6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
 7. ALL CATCH BASIN FRAMES AND GRATES SHALL BE NHDOT CATCH BASIN TYPE ALTERNATE 1 OR NEEDNAH R-3570 OR APPROVED EQUAL (24"x24" TYPICAL).
 8. STANDARD CATCH BASIN FRAME AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM, BUT NO MORE THAN 12"), OR PRECAST CONCRETE "DONUTS".
 9. ALL CATCH BASINS ARE TO BE FITTED WITH GREASE HOODS.

CATCH BASIN WITH GREASE HOOD

NOT TO SCALE

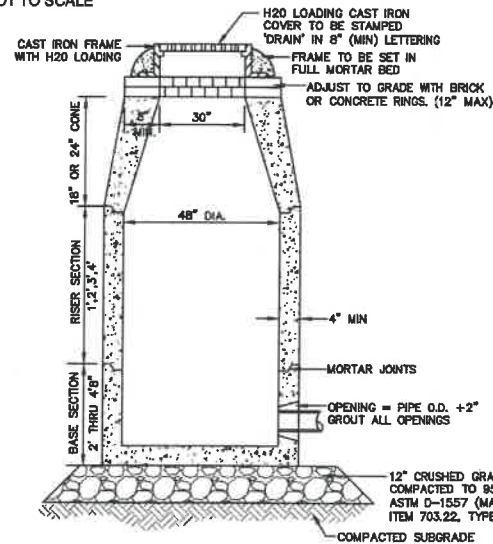
GAS TRENCH

NOT TO SCALE



WATER SYSTEM TRENCH

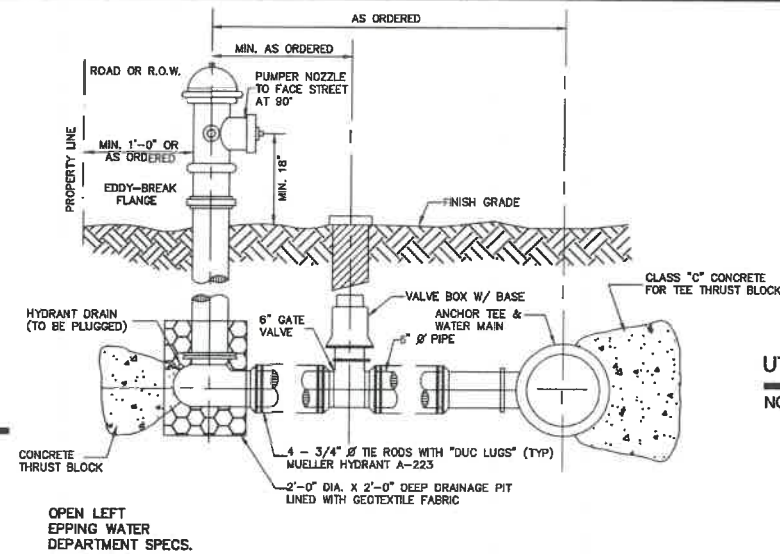
NOT TO SCALE



- NOTES:**
1. BASE SECTION SHALL BE MONOLITHIC WITH 48" INSIDE DIAMETER.
 2. ALL SECTIONS SHALL BE DESIGNED FOR H2O LOADING.
 3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
 4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H2O LOADING.
 5. PROVIDE "Y" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
 6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
 7. ALL DRAIN MANHOLE FRAMES AND GRATES SHALL BE NEEDNAH R-1798 OR APPROVED EQUAL (30" DIA. TYPICAL).
 8. STANDARD FRAME(S) AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM, BUT NO MORE THAN 12"), OR PRECAST CONCRETE "DONUTS".

DRAIN MANHOLE (4' DIAM.)

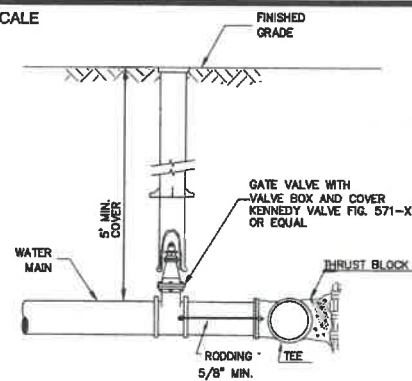
NOT TO SCALE



- NOTES:**
1. ALL PIPE FITTINGS TO BE D.I. PRESSURE CLASS 350, THICKNESS CLASS 52.
 2. HYDRANT TO BE PAINTED RED WITH WHITE "REFLECTOR" PAINT ON BONNET.
 3. MECHANICAL JOINTS SHALL HAVE MEGALUG RETAINING GLANDS AS MADE BY EBBA OR APPROVED EQUAL.
 4. STEAMER NOZZLE TO BE "STORCH" TYPE.
 5. NATIONAL STANDARD THREAD.

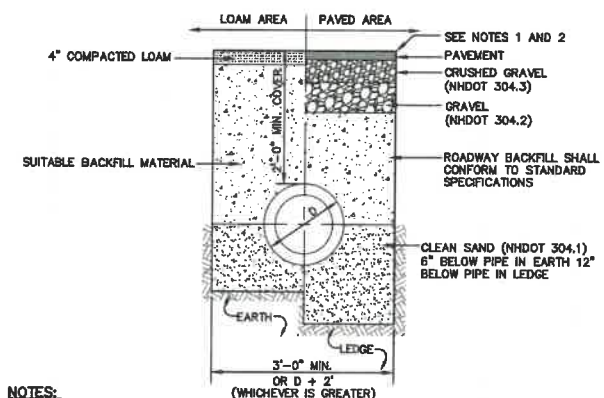
HYDRANT INSTALLATION

NOT TO SCALE



BURIED GATE VALVE DETAIL

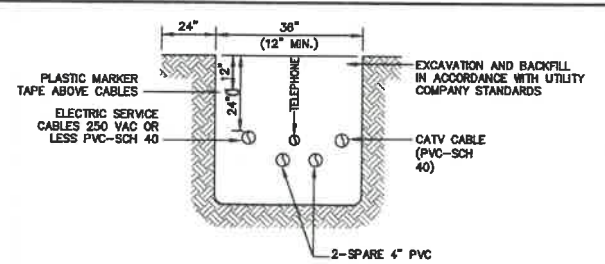
NOT TO SCALE



- NOTES:**
1. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
 2. NEW ROADWAY CONSTRUCTION SHALL CONFORM WITH PROJECT AND CITY SPECIFICATIONS.
 3. ALL MATERIALS ARE TO BE COMPACTED TO 95% OF ASTM D-1557.

DRAINAGE TRENCH

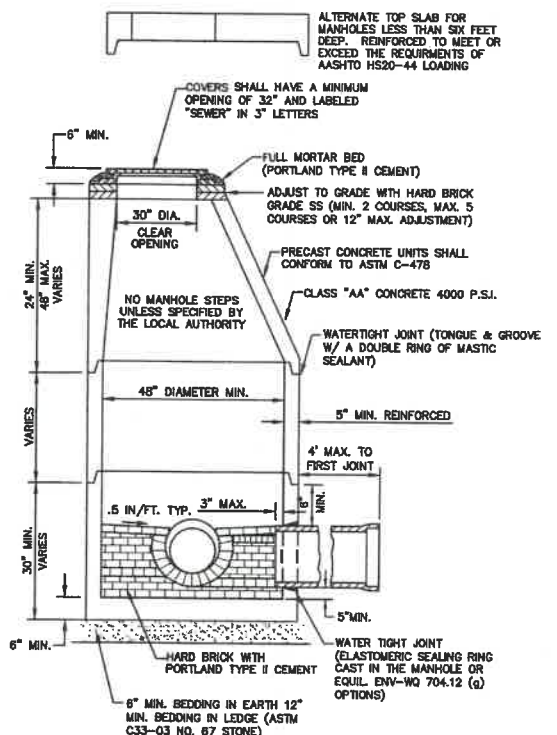
NOT TO SCALE



NOTE: ALL UTILITIES SHALL BE REVIEWED AND APPROVED BY APPROPRIATE UTILITY COMPANY.

UTILITY TRENCH

NOT TO SCALE



- NOTES:**
1. PER NHDES ENV-WQ 704.13(C), MORTAR USED IN MANHOLE CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING:
 - a. MORTAR SHALL BE COMPOSED OF TYPE II PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION
 - b. PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE PER TABLE 704-4:
 - (1) 4.5 PARTS SAND AND 1.5 PARTS CEMENT; OR
 - (2) 4.5 PARTS SAND, ONE PART CEMENT AND 0.5 PART HYDRATED LIME.
 - c. CEMENT SHALL BE TYPE II PORTLAND CEMENT THAT IS CERTIFIED BY ITS MANUFACTURER AS CONFORMING TO THE ASTM C150/C150M STANDARD IN EFFECT AT THE TIME THE CEMENT WAS MANUFACTURED
 - d. HYDRATED LIME SHALL BE TYPE S THAT IS CERTIFIED BY ITS MANUFACTURER AS CONFORMING TO THE ASTM C207 STANDARD IN EFFECT AT THE TIME THE HYDRATED LIME WAS PROCESSED
 - e. SAND SHALL CONSIST OF INERT NATURAL SAND THAT IS CERTIFIED BY ITS SUPPLIER AS CONFORMING TO THE ASTM C33 STANDARD IN EFFECT AT THE TIME THE SAND IS PROCESSED BY STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES
 2. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL IN ACCORDANCE WITH ENV-WQ 704.12 (K).
 3. ALL MANHOLES SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH ENV-WQ 704.17 (a) THROUGH (e).
 4. SEWER MANHOLE COVERS SHALL CONFORM TO ASTM A48/48M WITH A CASTING EQUAL TO CLASS 30 IN ACCORDANCE WITH ENV-WQ 704.13 (a) (8).
 5. ALL PRECAST SECTIONS SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING IN ACCORDANCE WITH ENV-WQ 704.12 (J).
 6. ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OR TRADEMARK OF THE MANUFACTURER IMPRESSED OR INDELIBLY MARKED ON THE INSIDE WALL PER ENV-WQ 704.12(I).
 7. BRICK MASONRY SHALL CONFORM TO ASTM C32 (ENV-WQ 704.12(a)(9))

SEWER MANHOLE

NOT TO SCALE

Design: JAC	Draft: LAZ	Date: 04/29/21
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Drawing Name: 21090-PLAN.dwg		
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1	1/18/22	REVISED PER CITY COMMENTS	LAZ
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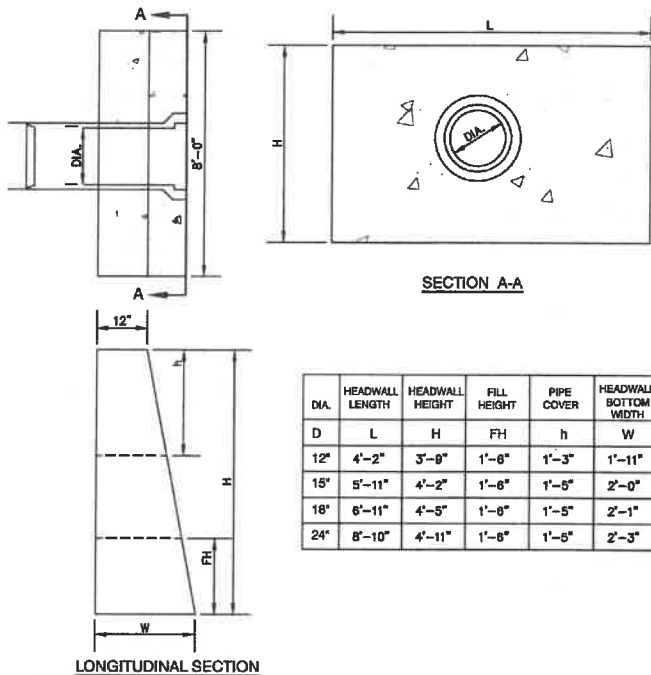
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Civil Engineering Services

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Plan Name:	DETAIL SHEET
Project:	BAYBERRY COMMONS 19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record:	LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE 19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

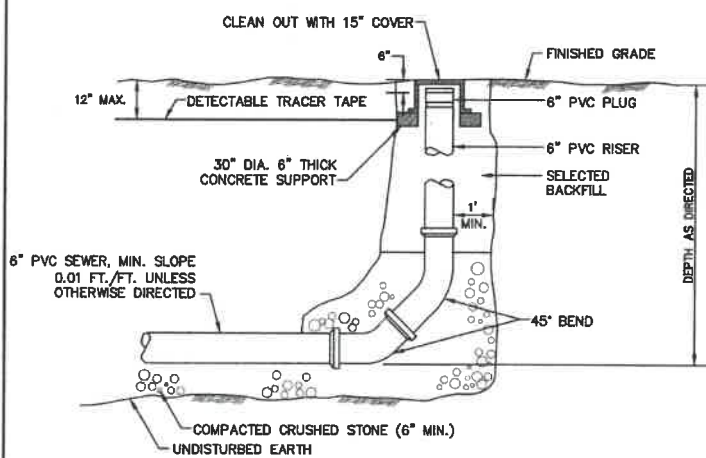
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SHEET 41 OF 45	JBE PROJECT NO. 21090



- NOTES:**
1. ALL DIMENSIONS GIVEN IN FEET & INCHES.
 2. PROVIDE BELL END AT INLET HEADWALL, AND SPIGOT END AT OUTLET END HEADWALL.
 3. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS. CEMENT TO BE TYPE III PER ASTM C-150. REINFORCING TO MEET OR EXCEED ASTM A-615 GRADE 60 DEFORMED BARS.
 4. 1" THREADED INSERTS PROVIDED FOR FINAL ATTACHMENT IN FIELD BY OTHERS.

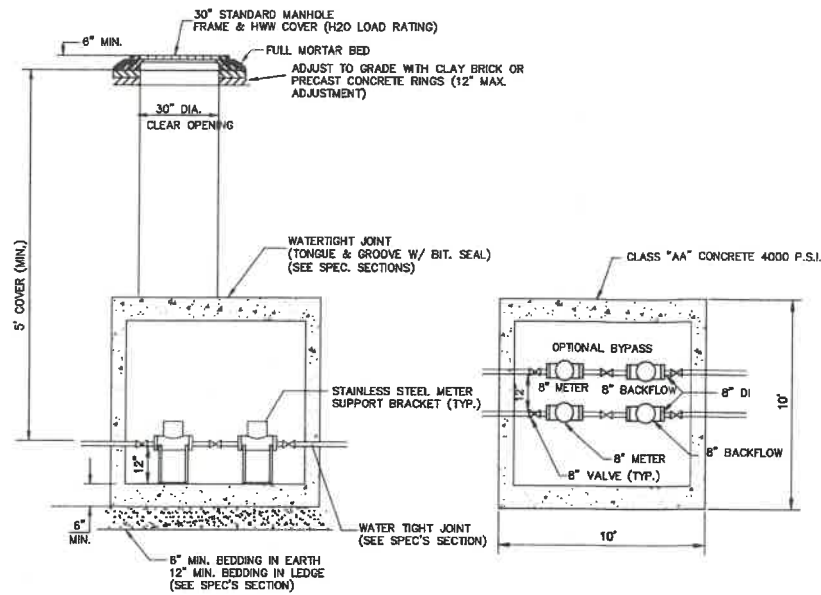
PRECAST CONCRETE HEADWALL

NOT TO SCALE



SEWER CLEAN OUT

NOT TO SCALE



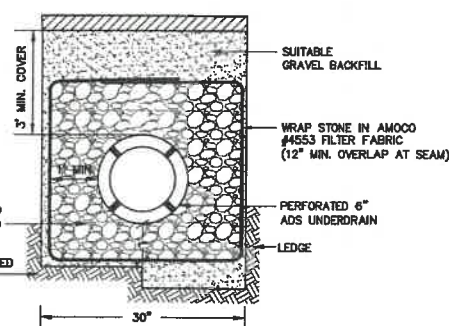
ELEVATION

PLAN VIEW

- NOTES:**
1. METER TO BE SENSUS OMNI C2 OF APPROPRIATE SIZE.
 2. BACKFLOW TO BE TESTABLE DOUBLE CHECK VALVE ASSEMBLY WITH CENTER-SHAFT OR TOP HINGE CHECKS (WILKINS 350AST OR EQUAL) OF APPROPRIATE SIZE, IF APPLICATION IS DESIGNED LOW HAZARD.
 3. OPTIONAL BYPASS MAY BE SIZED FOR DOMESTIC SERVICE ONLY.
 4. VAULT TO HAVE ADEQUATE ANTI-BOUANCY FEATURES.
 5. VAULT COVERS TO BE STAMPED WITH "WATER" AND MATCH EXISTING CITY OF ROCHESTER INFRASTRUCTURE STANDARDS.
 6. ISOLATION VALVES REQUIRED AROUND EQUIPMENT FOR MAINTENANCE, TESTING AND SERVICE.
 7. IF APPLICATION IS DESIGNATED HIGH HAZARD, THE ASSEMBLY MUST USE RP2 BACKFLOW DEVICES AND BE LOCATED IN AN ABOVE GRADE, HEATED AND INSULATED ENCLOSURE TO ALLOW FOR DRAINING.
 8. VAULT AND ACCESS MATCHES SHALL BE SIZED TO ALLOW ENTRY FOR INSPECTION, TESTING AND COMPLETE REPLACEMENT OF DEVICES.
 9. IF OPTIONAL BYPASS LINE IS INSTALLED, WHEN MAIN FEED IS TAKEN OFFLINE AND BYPASS ENGAGED, OWNER SHALL CALL 330-7129 TO COORDINATE LOW FLOW CONDITION WITH ROCHESTER FIRE DEPARTMENT AND ROCHESTER PUBLIC WORKS DEPARTMENT.

WATER METER PIT ROCHESTER

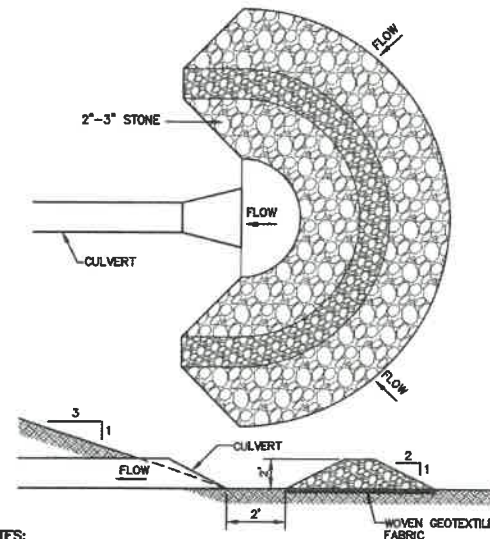
NOT TO SCALE



- NOTES:**
1. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
 2. NEW ROADWAY CONSTRUCTION SHALL CONFORM TO PROJECT AND CITY SPECIFICATIONS.
 3. SLOPE UNDERDRAIN PIPE TO DAYLIGHT.

ROADWAY UNDERDRAIN TRENCH

NOT TO SCALE

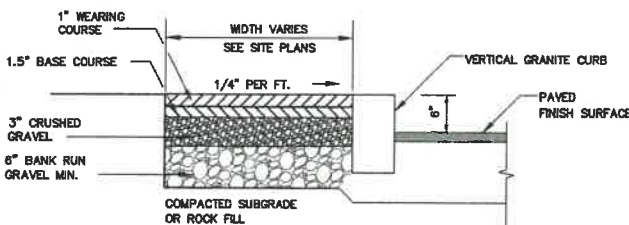


NOTES:

1. TEMPORARY CULVERT INLET PROTECTION CHECK DAMS SHALL BE CONSTRUCTED OF 2-3" STONE OVER WOVEN GEOTEXTILE FABRIC.
2. INLET PROTECTION MEASURES SHALL BE INSTALLED AT THE OPENINGS OF ALL EXISTING AND PROPOSED CULVERTS LOCATED BELOW (DOWNSTREAM) FROM AND WITHIN 100' OF THE PROJECT SITE.
3. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURE WHEN IT HAS ACCUMULATED TO ONE HALF THE ORIGINAL HEIGHT OF THE STRUCTURE.
4. STRUCTURES SHALL BE REMOVED WHEN THE SITE IS STABILIZED WITH VEGETATION AND THE CHANNEL SHALL BE SMOOTHED AND REVEGETATED.

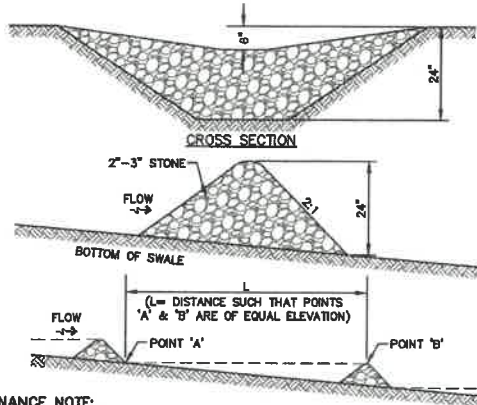
TEMPORARY CULVERT INLET PROTECTION CHECK DAM

NOT TO SCALE



BIT. SIDEWALK W/ VERTICAL GRANITE CURB

NOT TO SCALE

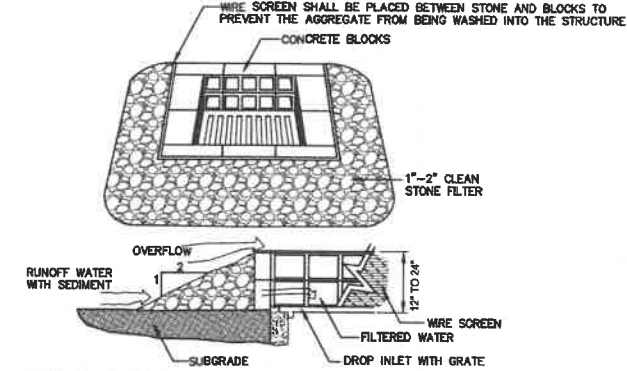


MAINTENANCE NOTE:

1. STONE CHECK DAMS SHOULD BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY NECESSARY REPAIRS SHOULD BE MADE IMMEDIATELY. PARTICULAR ATTENTION SHOULD BE GIVEN TO END RUN AND EROSION AT THE DOWNSTREAM TOE OF THE STRUCTURE. WHEN THE STRUCTURES ARE REMOVED, THE DISTURBED PORTION SHOULD BE BROUGHT TO THE EXISTING CHANNEL GRADE AND THE AREAS PREPARED, SEEDED AND MULCHED. WHILE THIS PRACTICE IS NOT INTENDED TO BE USED PRIMARILY FOR SEDIMENT TRAPPING, SOME SEDIMENT WILL ACCUMULATE BEHIND THE STRUCTURES. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURES WHEN IT HAS ACCUMULATED TO ONE HALF OF THE ORIGINAL HEIGHT OF THE STRUCTURE.

STONE CHECK DAM

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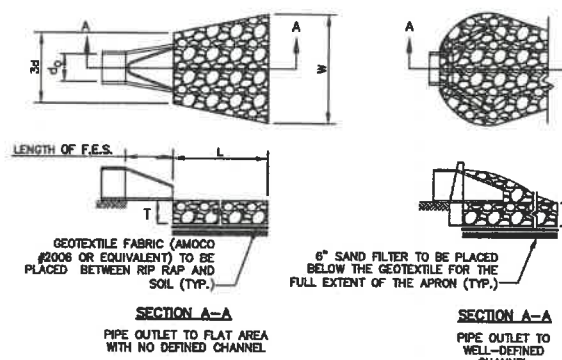


MAINTENANCE NOTE:

1. ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAINFALL AND REPAIRS MADE AS NECESSARY. SEDIMENT SHOULD BE REMOVED FROM TRAPPING DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE HALF THE DEPTH OF THE TRAP. THE SEDIMENT SHOULD BE DISPOSED IN A SUITABLE UPLAND AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURE OR VEGETATIVE MEANS. THE TEMPORARY TRAPS SHOULD BE REMOVED AND THE AREA REPAIRED AS SOON AS THE CONTRIBUTING DRAINAGE AREA TO THE INLET HAS BEEN COMPLETELY STABILIZED.

TEMPORARY CATCH BASIN INLET PROTECTION (Block and Gravel Drop Inlet Sediment Filter)

NOT TO SCALE



SECTION A-A

PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL

SECTION B-B

PIPE OUTLET TO WELL-DEFINED CHANNEL

TABLE 7-24—RECOMMENDED RIP RAP GRADATION RANGES			
THICKNESS OF RIP RAP = 1.5 FEET			
d50 SIZE=	0.50 FEET	6 INCHES	
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE	SIZE OF STONE (INCHES) FROM		TO
100%	9	12	
85%	8	11	
50%	6	9	
15%	2	3	

NOTES:

1. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE RIP RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
5. OUTLETS TO A DEFINED CHANNEL SHALL HAVE 2:1 OR FLATTER SIDE SLOPES AND SHOULD BEGIN AT THE TOP OF THE CULVERT AND TAPER DOWN TO THE CHANNEL BOTTOM THROUGH THE LENGTH OF THE APRON.
6. MAINTENANCE: THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIP RAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO OUTLET PROTECTION.

RIP RAP OUTLET PROTECTION APRON

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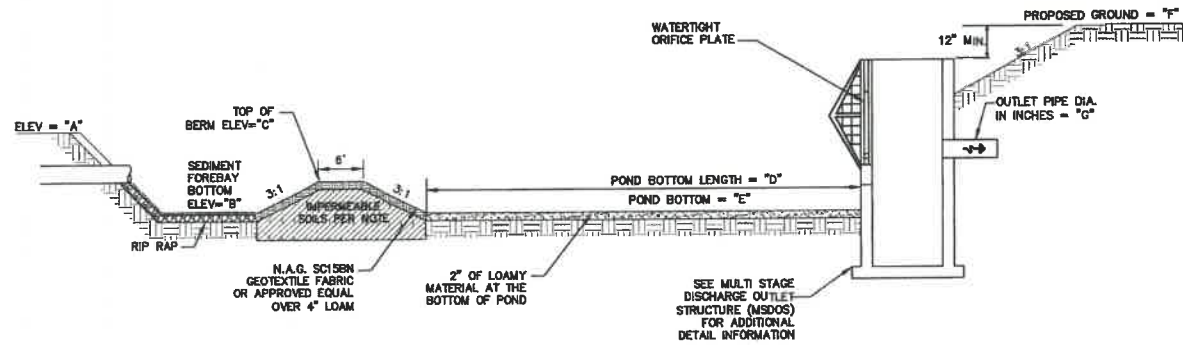


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0	11/23/21	ISSUED FOR REVIEW	LAZ

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19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

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 SHEET 42 OF 45
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POND TABLE

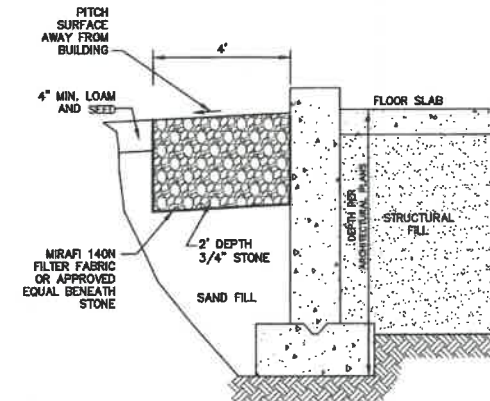
POND	ELEVATIONS/DIMENSIONS						
	A	B	C	D	E	F	G
POND 1	220.00	216.00	216.00	169'	212.00	220.00	12"
POND 2	220.00	217.00	216.00	310'	212.00	220.00	12"
POND 3	225.00	220.00	222.00	200'	216.00	225.50	12"

WET POND SECTION (PONDS 1, 2 & 3)

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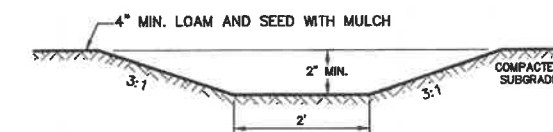
WET POND CONSTRUCTION CRITERIA

- FOUNDATION PREPARATION** — THE FOUNDATION AREA SHALL BE CLEARED OF TREES, LOGS, STUMPS, ROOTS, BRUSH, BOULDERS, SOD, AND RUBBISH. IF NEEDED TO ESTABLISH VEGETATION, THE TOPSOIL AND SOD SHALL BE STOCKPILED AND SPREAD ON THE COMPLETED DAM AND SPILLWAYS. FOUNDATION SURFACES SHALL BE SLOPED NO STEEPER THAN 1:1. THE FOUNDATION AREA SHALL BE THOROUGHLY SCARIFIED BEFORE PLACEMENT OF THE MATERIAL. THE SURFACE SHALL HAVE MOISTURE ADDED OR IT SHALL BE COMPACTED, IF NECESSARY, SO THAT THE FIRST LAYER OF FILL MATERIAL CAN BE COMPACTED AND BONDED TO THE FOUNDATIONS. THE CUTOFF TRENCH AND ANY OTHER REQUIRED EXCAVATIONS SHALL BE DUG TO THE LINES AND GRADES SHOWN ON THE PLANS OR AS STAKED IN THE FIELD. IF THEY ARE SUITABLE, EXCAVATED MATERIALS SHALL BE USED IN THE PERMANENT FILL. EXISTING STREAM CHANNELS IN THE FOUNDATION AREA SHALL BE SLOPED NO STEEPER THAN 1:1 AND DEEPEMED AND WIDENED AS NECESSARY TO REMOVE ALL STONES, GRAVEL, SAND, STUMPS, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND TO ACCOMMODATE COMPACTION EQUIPMENT. FILL PLACEMENT — THE MATERIAL PLACED IN THE FILL SHALL BE FREE OF DETRIMENTAL AMOUNTS OF SOD, ROOTS, FROZEN SOIL, STONES MORE THAN 6 INCHES IN DIAMETER (EXCEPT FOR ROCK FILLS), AND OTHER OBJECTIONABLE MATTER.
- SELECTED BACK FILL MATERIAL** SHALL BE PLACED AROUND STRUCTURES, PIPE CONDUITS AND ANTI SEEP COLLARS AT ABOUT THE SAME RATE ON ALL SIDES, TO PREVENT DAMAGE FROM UNEQUAL LOADING. THE PLACING AND SPREADING OF FILL MATERIAL SHALL BE STARTED AT THE LOWEST POINT OF THE FOUNDATION AND THE FILL BROUGHT UP IN HORIZONTAL LAYERS OF SUCH THICKNESS THAT THE REQUIRED COMPACTION CAN BE OBTAINED. THE FILL SHALL BE CONSTRUCTED IN CONTINUOUS HORIZONTAL LAYERS EXCEPT WHERE OPENINGS OR SECTIONALIZED FILLS ARE REQUIRED. IN THOSE CASES, THE SLOPE OF THE BONDING SURFACES BETWEEN THE EMBANKMENT IN PLACE AND THE SAME AS THAT SPECIFIED FOR THE FOUNDATION SO AS TO INSURE A GOOD BOND WITH THE NEW FILL. THE DISTRIBUTION AND GRADATION OF MATERIALS SHALL BE SUCH THAT NO LENSES, POCKETS, STREAKS, OR LAYERS OF MATERIAL DIFFER SUBSTANTIALLY IN TEXTURE OR GRADATION FROM THE SURROUNDING MATERIAL. IF IT IS NECESSARY TO USE MATERIALS OF VARYING TEXTURE AND GRADATION, THE MORE IMPERVIOUS MATERIAL SHALL BE PLACED IN THE CENTER AND UPSTREAM PARTS OF THE FILL. IF ZONED FILLS OF SUBSTANTIALLY DIFFERING MATERIALS ARE SPECIFIED, THE ZONES SHALL BE PLACED ACCORDING TO THE LINES AND GRADES SHOWN ON THE DRAWINGS. THE COMPLETE WORK SHALL CONFORM TO THE LINES, GRADES, AND ELEVATIONS SHOWN ON THE DRAWINGS OR AS STAKED IN THE FIELD.
- MOISTURE CONTROL** — THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL BE ADEQUATE FOR OBTAINING THE REQUIRED COMPACTION. MATERIAL THAT IS TOO WET SHALL BE DRIED TO MEET THIS REQUIREMENT, AND MATERIAL THAT IS TOO DRY SHALL HAVE WATER ADDED AND MIXED UNTIL THE REQUIREMENT IS MET.
- COMPACTION** — CONSTRUCTION EQUIPMENT SHALL BE OPERATED OVER THE AREAS OR EACH LAYER OF FILL TO INSURE THAT THE REQUIRED COMPACTION IS OBTAINED. SPECIAL EQUIPMENT SHALL BE USED IF NEEDED TO OBTAIN THE REQUIRED COMPACTION. IF A MINIMUM REQUIRED DENSITY IS SPECIFIED, EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY. FILL ADJACENT TO STRUCTURES, PIPE CONDUITS, AND ANTI SEEP COLLARS SHALL BE COMPACTED TO A DENSITY EQUIVALENT TO THAT OF THE SURROUNDING FILL BY MEANS OF HAND TAMPING OR MANUALLY DIRECTED POWER TAMPER OR PLATE VIBRATORS. FILL ADJACENT TO CONCRETE STRUCTURES SHALL NOT BE COMPACTED UNTIL THE CONCRETE IS STRONG ENOUGH TO SUPPORT THE LOAD.
- PROTECTION** — A PROTECTIVE COVER OF VEGETATION SHALL BE ESTABLISHED ON ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, AND BORROW AREA IF SOIL AND CLIMATIC CONDITIONS PERMIT. IF SOIL OR CLIMATIC CONDITIONS PRECLUDE THE USE OF VEGETATION AND PROTECTION IS NEEDED, NON-VEGETATIVE MEANS SUCH AS MULCHES OR GRAVEL MAY BE USED. IN SOME PLACES, TEMPORARY VEGETATION MAY BE USED UNTIL CONDITIONS PERMIT ESTABLISHMENT OF PERMANENT VEGETATION. THE EMBANKMENT AND SPILLWAY SHALL BE FENCED IF NECESSARY TO PROTECT THE VEGETATION.
- SEEDBED PREPARATION, SEEDING, FERTILIZING, AND MULCHING** SHALL COMPLY WITH THE APPROPRIATE VEGETATIVE BMP'S.
- CONCRETE** — THE MIX DESIGN AND TESTING OF CONCRETE SHALL BE CONSISTENT WITH THE STRENGTH REQUIREMENTS OF THE JOB. MIX REQUIREMENTS OR NECESSARY STRENGTH SHALL BE SPECIFIED. THE TYPE OF CEMENT, AIR ENTRAINMENT, SLUMP, AGGREGATE, OR OTHER PROPERTIES SHALL BE SPECIFIED IF NECESSARY. ALL CONCRETE IS TO CONSIST OF A WORKABLE MIX THAT CAN BE PLACED AND FINISHED IN AN ACCEPTABLE MANNER. NECESSARY CURING SHALL BE SPECIFIED. REINFORCING STEEL SHALL BE PLACED AS INDICATED ON THE PLANS AND SHALL BE HELD SECURELY IN PLACE DURING CONCRETE PLACEMENT. SUB GRADES AND FORMS SHALL BE INSTALLED TO LINE AND GRADE, AND THE FORMS SHALL BE MORTAR TIGHT AND UNYIELDING AS THE CONCRETE IS PLACED.
- THE CONTRACTOR WILL NOTIFY JONES AND BEACH ENGINEERS AFTER EACH OF THE GRAVEL WETLAND PONDS HAVE BEEN EXCAVATED TO THE BOTTOM OF THE SYSTEM FOR A MANDATORY INSPECTION PRIOR TO BUILDING BERMS, PLACING STONE OR INSTALLING PIPE SYSTEM.
- BERMS AND WEIRS SEPARATING THE FOREBAY AND TREATMENT CELLS SHOULD BE CONSTRUCTED WITH CLAY, OR NON-CONDUCTIVE SOILS, AND/OR A FINE GEOTEXTILE, OR SOME COMBINATION THEREOF, TO AVOID WATER SEEPAGE AND SOIL PIPING THROUGH THESE EARTHEN DIVIDERS.



DRIP EDGE DETAIL

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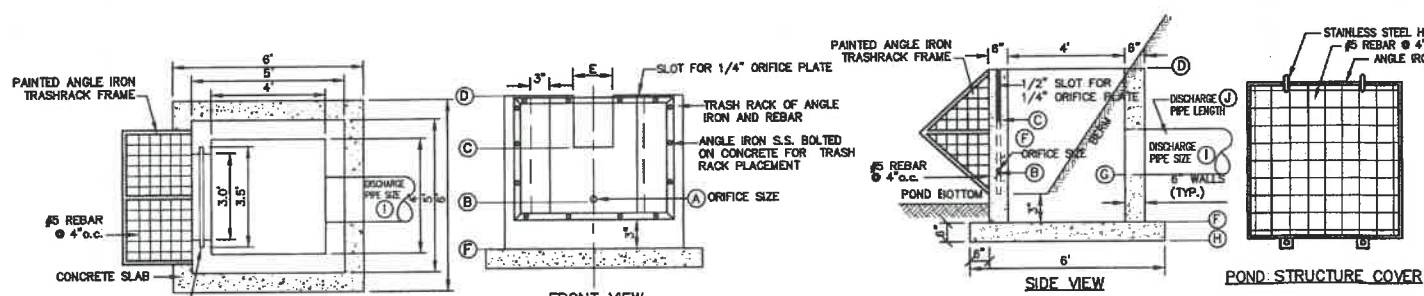


NOTE:

- ALL VEGETATED SWALES ARE TO BE STABILIZED WITH NORTH AMERICAN GREEN EROSION CONTROL BLANKET SECURED WITH BIODEGRADABLE 'BIO' OR 'ECO-STAKES'.

VEGETATED SWALE

NOT TO SCALE



APPROXIMATE LIST OF MATERIALS

- 3 C.Y. — 5000 PSI CONCRETE
- 15 ANGLE IRONS @ 4' LENGTH
- REQUIRED S.S. BOLTS AND FASTENERS
- 1/4\"/>

	A	B	C	D	E	F	G	H	I	J
MSDOS 1	4"	216.00	—	219.00	—	215.00	216.00	214.50	12"	198'
MSDOS 2	6.5"	216.00	217.85	219.00	36"	215.00	216.00	214.50	12"	30'
MSDOS 3	6"	220.50	—	224.00	—	219.50	220.50	219.00	12"	33'

NOTES:

- REINFORCING STEEL SHALL CONSIST OF A SINGLE LAYER OF HORIZONTAL AND VERTICAL PLACED #4 REBAR @ 12\"/>

MULTI-STAGE DISCHARGE OUTLET STRUCTURE (MSDOS)

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Plan Name:	DETAIL SHEET
Project:	BAYBERRY COMMONS 19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record:	LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE 19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

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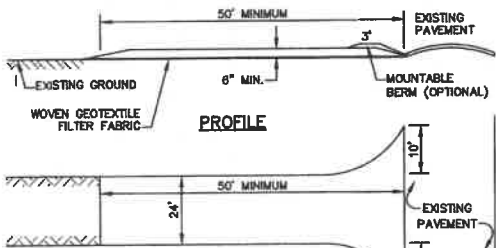
D4

SHEET 45 OF 45
JBE PROJECT NO. 21090

BLASTING SPECIFICATIONS

A. BEST MANAGEMENT PRACTICES FOR BLASTING. ALL ACTIVITIES RELATED TO BLASTING SHALL FOLLOW BEST MANAGEMENT PRACTICES (BMPs) TO PREVENT CONTAMINATION OF GROUNDWATER INCLUDING PREPARING, REVIEWING AND FOLLOWING AN APPROVED BLASTING PLAN, PROPER DRILLING, EXPLOSIVE HANDLING AND LOADING PROCEDURES, OBSERVING THE ENTIRE BLASTING PROCEDURES, EVALUATING BLASTING PERFORMANCE, AND HANDLING AND STORAGE OF BLASTED ROCK.

- (1) **LOADING PRACTICES.** THE FOLLOWING BLASTHOLE LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:
 - (a) DRILLING LOGS SHALL BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE BLASTER. THE LOGS SHALL INDICATE DEPTHS AND LENGTHS OF VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED AS WELL AS GROUNDWATER CONDITIONS.
 - (b) EXPLOSIVE PRODUCTS SHALL BE MANAGED ON-SITE SO THAT THEY ARE EITHER USED IN THE BOREHOLE, RETURNED TO THE DELIVERY VEHICLE, OR PLACED IN SECURE CONTAINERS FOR OFF-SITE DISPOSAL.
 - (c) SPILLAGE AROUND THE BOREHOLE SHALL EITHER BE PLACED IN THE BOREHOLE OR CLEANED UP AND RETURNED TO AN APPROPRIATE VEHICLE FOR HANDLING OR PLACEMENT IN SECURED CONTAINERS FOR OFF-SITE DISPOSAL.
 - (d) LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND SHALL NOT BE LEFT IN THE BLASTHOLES OVERNIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED.
 - (e) LOADING EQUIPMENT SHALL BE CLEANED IN AN AREA WHERE WASTEWATER CAN BE PROPERLY CONTAINED AND HANDLED IN A MANNER THAT PREVENTS RELEASE OF CONTAMINANTS TO THE ENVIRONMENT.
 - (f) EXPLOSIVES SHALL BE LOADED TO MAINTAIN GOOD CONTINUITY IN THE COLUMN LOAD TO PROMOTE COMPLETE DETONATION. INDUSTRY ACCEPTED LOADING PRACTICES FOR PRIMING, STEMMING, DECKING AND COLUMN RISE NEED TO BE ATTENDED TO.
- (2) **EXPLOSIVE SELECTION.** THE FOLLOWING BMPs SHALL BE FOLLOWED TO REDUCE THE POTENTIAL FOR GROUNDWATER CONTAMINATION WHEN EXPLOSIVES ARE USED:
 - (a) EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXCAVATION.
 - (b) EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT HAVE THE APPROPRIATE WATER RESISTANCE FOR THE SITE CONDITIONS PRESENT TO MINIMIZE THE POTENTIAL FOR HAZARDOUS EFFECT OF THE PRODUCT UPON GROUNDWATER.
- (3) **PREVENTION OF MISFIRES.** APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISFIRES.
- (4) **MUCK PILE MANAGEMENT.** MUCK PILES (THE BLASTED PIECES OF ROCK) AND ROCK PILES SHALL BE MANAGED IN A MANNER TO REDUCE THE POTENTIAL FOR CONTAMINATION BY IMPLEMENTING THE FOLLOWING MEASURES:
 - (a) REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.
 - (b) MANAGE THE INTERACTION OF BLASTED ROCK PILES AND STORMWATER TO PREVENT CONTAMINATION OF WATER SUPPLY WELLS OR SURFACE WATER.
- (5) **SPILL PREVENTION MEASURES AND SPILL MITIGATION.** SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED SUBSTANCES TO THE ENVIRONMENT. THE MEASURES SHALL INCLUDE AT A MINIMUM:
 - a. THE FUEL STORAGE REQUIREMENTS SHALL INCLUDE:
 1. STORAGE OF REGULATED SUBSTANCES ON AN IMPERVIOUS SURFACE.
 2. SECURE STORAGE AREAS AGAINST UNAUTHORIZED ENTRY.
 3. LABEL REGULATED CONTAINERS CLEARLY AND VISIBLY.
 4. INSPECT STORAGE AREAS WEEKLY.
 5. COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS.
 6. WHEREVER POSSIBLE, KEEP REGULATED CONTAINERS THAT ARE STORED OUTSIDE MORE THAN 50 FEET FROM SURFACE WATER AND STORM DRAINS, 75 FEET FROM PRIVATE WELLS, AND 400 FEET FROM PUBLIC WELLS.
 7. SECONDARY CONTAINMENT IS REQUIRED FOR CONTAINERS CONTAINING REGULATED SUBSTANCES STORED OUTSIDE, EXCEPT FOR ON PREMISE USE HEATING FUEL TANKS, OR ABOVEGROUND OR UNDERGROUND STORAGE TANKS OTHERWISE REGULATED.
 - b. THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
 1. EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED.
 2. PLACE DRIP PANS UNDER SPOUTS, VALVES, AND PUMPS.
 3. HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS.
 4. USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES.
 5. PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
 - c. THE TRAINING OF ON-SITE EMPLOYEES AND THE ON-SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.
 - d. FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION RELATED EQUIPMENT WILL COMPLY WITH THE REGULATIONS OF NHDES [NOTE THESE REQUIREMENTS ARE SUMMARIZED IN WD-0068-22-B: "BEST MANAGEMENT PRACTICES FOR FUELING AND MAINTENANCE OF EXCAVATION AND EARTHMOVING EQUIPMENT" OR ITS SUCCESSOR DOCUMENT.



NOTES:

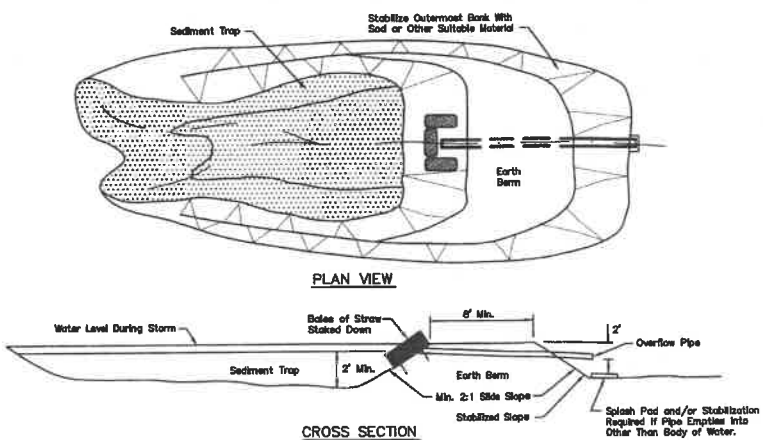
1. STONE FOR STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
3. THICKNESS OF THE STONE FOR THE STABILIZED 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, WHICHEVER IS GREATER.
5. GEOTEXTILE FILTER FABRIC SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER FABRIC IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENTIAL LOT.
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A STONE BERM WITH 3:1 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 THE PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO THE PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

TEMPORARY EROSION CONTROL NOTES

1. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME. AT NO TIME SHALL AN AREA IN EXCESS OF 5 ACRES BE EXPOSED AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND AT LOCATIONS AS REQUIRED, DIRECTED BY THE ENGINEER.
3. ALL DISTURBED AREAS (INCLUDING POND AREAS BELOW THE PROPOSED WATERLINE) SHALL BE RETURNED TO PROPOSED GRADES AND ELEVATIONS. DISTURBED AREAS SHALL BE LOADED WITH A MINIMUM OF 6" OF SCREENED ORGANIC LOAM AND SEEDED WITH SEED MIXTURE "C" AT A RATE NOT LESS THAN 1.10 POUNDS OF SEED PER 1,000 S.F. OF AREA (48 LBS. / ACRE).
4. SILT FENCES AND OTHER BARRIERS SHALL BE INSPECTED EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 0.5" OR GREATER. ALL DAMAGED AREAS SHALL BE REPAIRED, AND SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED OF.
5. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND THE AREA DISTURBED BY THE REMOVAL SMOOTHED AND RE-VEGETATED.
6. AREAS MUST BE SEED AND MULCHED OR OTHERWISE PERMANENTLY STABILIZED WITHIN 3 DAYS OF FINAL GRADING, OR TEMPORARILY STABILIZED WITHIN 14 DAYS OF THE INITIAL DISTURBANCE OF SOIL. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
7. IN AREAS WHERE FINAL GRADING HAS NOT OCCURRED, TEMPORARY STABILIZATION MEASURES SHOULD BE IN PLACE WITHIN 5 CALENDAR DAYS FOR EXPOSED SOIL AREAS THAT ARE WITHIN 100 FEET OF A SURFACE WATERBODY OR A WETLAND AND NO MORE THAN 14 CALENDAR DAYS FOR ALL OTHER AREAS. PERMANENT STABILIZATION SHOULD BE IN PLACE WITHIN 3 CALENDAR DAYS FOLLOWING COMPLETION OF FINAL GRADING OF EXPOSED SOIL AREAS.
8. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING NORTH AMERICAN GREEN STY EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED IN WRITING BY THE ENGINEER) 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 EVENTS.
9. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
10. AFTER OCTOBER 15th, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3" OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.
11. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
 - a. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
 - b. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
 - c. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED; OR
 - d. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
12. FUGITIVE DUST CONTROL IS REQUIRED TO BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000, AND THE PROJECT IS TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES.
13. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR'S NAME, ADDRESS, AND PHONE NUMBER SHALL BE SUBMITTED TO DES VIA EMAIL (SEE BELOW).
14. PRIOR TO CONSTRUCTION, A PHASING PLAN THAT DELINEATES EACH PHASE OF THE PROJECT SHALL BE SUBMITTED. ALL TEMPORARY SEDIMENT BASINS THAT WILL BE NEEDED FOR DEWATERING WORK AREAS SHALL BE LOCATED AND IDENTIFIED ON THIS PLAN.
15. IN ORDER TO ENSURE THE STABILITY OF THE SITE AND EFFECTIVE IMPLEMENTATION OF THE SEDIMENT AND EROSION CONTROL MEASURES SPECIFIED IN THE PLANS FOR THE DURATION OF CONSTRUCTION, THE CONTRACTOR SHALL BE IN STRICT COMPLIANCE WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS IN ADDITION TO THOSE CALLED FOR IN THE SWPPP:
 - a. A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL OR A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE ("MONITOR") SHALL BE EMPLOYED TO INSPECT THE SITE FROM THE START OF ALTERATION OF TERRAIN ACTIVITIES UNTIL THE SITE IS IN FULL COMPLIANCE WITH THE SITE SPECIFIC PERMIT ("PERMIT").
 - b. DURING THIS PERIOD, THE MONITOR SHALL INSPECT THE SUBJECT SITE AT LEAST ONCE A WEEK, AND IF POSSIBLE, DURING ANY 1/2 INCH OR GREATER RAIN EVENT (I.E. 1/2 INCH OF PRECIPITATION OR MORE WITHIN A 24 HOUR PERIOD). IF UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THIS EVENT.
 - c. THE MONITOR SHALL PROVIDE TECHNICAL ASSISTANCE AND RECOMMENDATIONS TO THE CONTRACTOR ON THE APPROPRIATE BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROLS REQUIRED TO MEET THE REQUIREMENTS OF RSA 485 A:17 AND ALL APPLICABLE DES PERMIT CONDITIONS.
 - d. WITHIN 24 HOURS OF EACH INSPECTION, THE MONITOR SHALL SUBMIT A REPORT TO DES VIA EMAIL (RDGELY MAUCK AT: RDGELY.MAUCK@DES.NH.GOV).
 - e. THE MONITOR SHALL MEET WITH DES TO DECIDE UPON A REPORT FORMAT. THE REPORT FORMAT SHALL BE REVIEWED AND APPROVED BY DES PRIOR TO THE START OF CONSTRUCTION.



TEMPORARY SEDIMENT BASIN

NOT TO SCALE

SEEDING SPECIFICATIONS

1. **GRADING AND SHAPING**
 - A. SLOPES SHALL NOT BE STEEPER THAN 2:1 WITHOUT APPROPRIATE EROSION CONTROL MEASURES AS SPECIFIED ON THE PLANS (3:1 SLOPES OR FLATTER ARE PREFERRED).
 - B. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
2. **SEEDING PREPARATION**
 - A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WATER KILLING OF THE PLANTS.
 - B. 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 FERTILIZER AND LIME MIXED 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.
3. **ESTABLISHING A STAND**
 - A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. TYPES AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
AGRICULTURAL LIMESTONE, 2 TONS PER ACRE OR 100 LBS. PER 1,000 SQ.FT.
NITROGEN(N), 50 LBS. PER ACRE OR 1.1 LBS. PER 1,000 SQ.FT.
PHOSPHATE(P2O5), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT.
POTASH(K2O), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT.
(NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS. PER ACRE OF 5-10-10.)
 - B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.
 - C. REFER TO THE "SEEDING GUIDE" AND "SEEDING RATES" TABLES ON THIS SHEET FOR APPROPRIATE SEED MIXTURES AND RATES OF SEEDING. ALL LEGUMES (CROWFOOT, BIRDFOOT, TREFOL AND FLATPEA) MUST BE INOCULATED WITH THEIR SPECIFIC INOCULANT PRIOR TO THEIR INTRODUCTION TO THE SITE.
 - D. WHEN SEEDING AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDING AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20th OR FROM AUGUST 10th TO SEPTEMBER 1st.
4. **MULCH**
 - A. HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.
 - B. MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING. HAY OR STRAW MULCH SHALL BE PLACED AT A RATE OF 90 LBS PER 1000 S.F.
5. **MAINTENANCE TO ESTABLISH A STAND**
 - A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.
 - B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ON-SITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED.
 - C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, ANNUAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

USE	SEEDING MIXTURE 1/	DROUGHTY	WELL DRAINED	MODERATELY WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	POOR	GOOD	EXCELLENT	GOOD
	D	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	GOOD	GOOD	GOOD	FAIR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	EXCELLENT	POOR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	EXCELLENT	EXCELLENT
	C	GOOD	EXCELLENT	EXCELLENT	EXCELLENT
	D	GOOD	EXCELLENT	EXCELLENT	EXCELLENT
PLAY AREAS AND ATHLETIC FIELDS (TOPSOIL IS ESSENTIAL FOR GOOD TURF.)	E	FAIR	EXCELLENT	EXCELLENT	2/
	F	FAIR	EXCELLENT	EXCELLENT	2/
	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	EXCELLENT	POOR

1/ REFER TO SEEDING MIXTURES AND RATES IN TABLE BELOW.
2/ POORLY DRAINED SOILS ARE NOT DESIRABLE FOR USE AS PLAYING AREA AND ATHLETIC FIELDS.

NOTE: TEMPORARY SEED MIX FOR STABILIZATION OF TURF SHALL BE WINTER RYE OR OATS AT A RATE OF 2.5 LBS. PER 1000 S.F. AND SHALL BE PLACED PRIOR TO OCTOBER 15th, IF PERMANENT SEEDING NOT YET COMPLETE.

SEEDING GUIDE

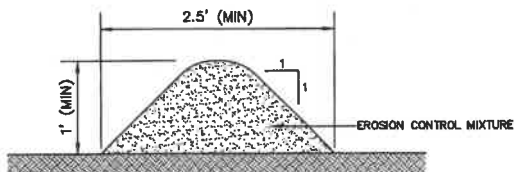
MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.
A. TALL FESCUE	20	0.45
CREeping RED FESCUE	20	0.45
RED TOP	2	0.05
TOTAL	42	0.95
B. TALL FESCUE	15	0.35
CREeping RED FESCUE	10	0.25
CROWN VETCH	15	0.35
OR		
FLAT PEA	30	0.75
TOTAL	40 OR 85	0.95 OR 1.35
C. TALL FESCUE	20	0.45
CREeping RED FESCUE	20	0.45
BIRD FOOT TREFOL	8	0.20
TOTAL	48	1.10
D. TALL FESCUE	20	0.45
FLAT PEA	30	0.75
TOTAL	50	1.20
E. CREeping RED FESCUE 1/	50	1.15
KENTUCKY BLUEGRASS 1/2	50	1.15
TOTAL	100	2.30
F. TALL FESCUE 1	150	3.60

1/ FOR HEAVY USE ATHLETIC FIELDS CONSULT THE UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION TURF SPECIALIST FOR CURRENT VARIETIES AND SEEDING RATES.

SEEDING RATES

CONSTRUCTION SEQUENCE

1. PRIOR TO THE START OF ANY ACTIVITY, IT IS THE RESPONSIBILITY OF THE SITE'S SITE DEVELOPER (OR OWNER) TO FILE A NOTICE OF INTENT (NOI) FORM WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA) IN ORDER TO GAIN COVERAGE UNDER THE NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES. A PRE-CONSTRUCTION MEETING IS TO BE HELD WITH ALL DEPARTMENT HEADS PRIOR TO THE START OF CONSTRUCTION.
2. WETLAND BOUNDARIES ARE TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION.
3. CUT AND REMOVE TREES IN CONSTRUCTION AREA AS REQUIRED OR DIRECTED.
4. INSTALL SILT FENCING, HAY BALES AND CONSTRUCTION ENTRANCES PRIOR TO THE START OF CONSTRUCTION. THESE ARE TO BE MAINTAINED UNTIL THE FINAL PAVEMENT SURFACING AND LANDSCAPING AREAS ARE ESTABLISHED.
5. CLEAR, CUT, GRUB AND DISPOSE OF DEBRIS IN APPROVED FACILITIES. THIS INCLUDES ANY REQUIRED DEMOLITION OF EXISTING STRUCTURES, UTILITIES, ETC.
6. CONSTRUCT AND/OR INSTALL TEMPORARY OR PERMANENT SEDIMENT AND/OR DETENTION BASIN(S) AS REQUIRED. THESE FACILITIES SHALL BE INSTALLED AND STABILIZED PRIOR TO DIRECTING RUN-OFF TO THEM.
7. STRIP LOAM AND PAVEMENT, OR RECLAIM EXISTING PAVEMENT WITHIN LIMITS OF WORK PER THE RECOMMENDATIONS OF THE PROJECT ENGINEER AND STOCKPILE EXCESS MATERIAL. STABILIZE STOCKPILE AS NECESSARY.
8. PERFORM PRELIMINARY SITE GRADING IN ACCORDANCE WITH THE PLANS, INCLUDING THE CONSTRUCTION OF ANY RETAINING WALLS.
9. PREPARE BUILDING PAD(S) TO ENABLE BUILDING CONSTRUCTION TO BEGIN.
10. INSTALL THE SEWER AND DRAINAGE SYSTEMS FIRST, THEN ANY OTHER UTILITIES IN ACCORDANCE WITH THE PLAN AND DETAILS. ANY CONFLICTS BETWEEN UTILITIES ARE TO BE RESOLVED WITH THE INVOLVEMENT AND APPROVAL OF THE ENGINEER.
11. INSTALL INLET PROTECTION AT ALL CATCH BASINS AS THEY ARE CONSTRUCTED IN ACCORDANCE WITH DETAILS.
12. ALL SWALES AND DRAINAGE STRUCTURES ARE TO BE CONSTRUCTED AND STABILIZED PRIOR TO HAVING RUN-OFF DIRECTED TO THEM.
13. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINAGE DITCHES, CHECK DAMS, SEDIMENT TRAPS, ETC., TO PREVENT EROSION ON THE SITE AND PREVENT ANY SILTATION OF ADJUTING WATERS AND/OR PROPERTY.
14. PERFORM FINAL FINE GRADING, INCLUDING PLACEMENT OF "SELECT" SUBGRADE MATERIALS.
15. PAVE ALL PARKING LOTS AND ROADWAYS WITH INITIAL "BASE COURSE".
16. PERFORM ALL REMAINING SITE CONSTRUCTION (I.E. BUILDING, CURBING, UTILITY CONNECTIONS, ETC.).
17. LOAM AND SEED ALL DISTURBED AREAS AND INSTALL ANY REQUIRED SEDIMENT AND EROSION CONTROL FACILITIES (I.E. RIP RAP, EROSION CONTROL BLANKETS, ETC.).
18. FINISH PAVING ALL ROADWAYS AND PARKING AREAS WITH "FINISH" COURSE.
19. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
20. ALL CUT AND FILL SLOPES SHALL BE SEED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
21. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
22. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDING AREAS HAVE BEEN 75%-85% ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE. SMOOTH AND RE-VEGETATE ALL DISTURBED AREAS.
23. CLEAN SITE AND ALL DRAINAGE STRUCTURES, PIPES AND SUMPS OF ALL SILT AND DEBRIS.
24. INSTALL ALL PAINTED PAVEMENT MARKINGS AND SIGNAGE PER THE PLANS AND DETAILS.
25. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.
26. UPON COMPLETION OF CONSTRUCTION, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ANY RELEVANT PERMITTING AGENCIES THAT THE CONSTRUCTION HAS BEEN FINISHED IN A SATISFACTORY MANNER.



NOTES:

1. ORGANIC FILTER BERMS MAY BE UTILIZED IN LIEU OF SILT FENCE, UNLESS OTHERWISE SPECIFIED.
2. THE EROSION CONTROL MIX USED IN THE FILTER BERMS SHALL BE A WELL-GRADED MIXTURE OF PARTICLE SIZES, MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER, STUMP GRINDINGS, SHREDDED OR COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS, AND SHALL BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH, AND SHALL MEET THE FOLLOWING STANDARDS:
 - a) THE ORGANIC CONTENT SHALL BE 80-100% OF DRY WEIGHT.
 - b) PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN, AND 70-85% PASSING A 0.75" SCREEN.
 - c) THE ORGANIC PORTION SHALL BE FIBROUS AND ELONGATED.
 - d) LARGE PORTIONS OF SILTS, CLAYS, OR FINE SANDS SHALL NOT BE INCLUDED IN THE MIXTURE.
 - e) SOLUBLE SALTS CONTENT SHALL BE >4.0mmhos/cm.
 - f) THE pH SHALL BE BETWEEN 5.0 AND 8.0.
3. ORGANIC FILTER BERMS SHALL BE INSTALLED ALONG A RELATIVELY LEVEL CONTOUR. IT MAY BE NECESSARY TO CUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES THAT WOULD ENABLE FINES TO WASH UNDER THE BERM.
4. ON SLOPES LESS THAN 5%, OR AT THE BOTTOM OF SLOPES STEEPER THAN 3:1, UP TO 20' LONG, THE BERM SHALL BE A MINIMUM OF 12" HIGH (AS MEASURED ON THE UPHILL SIDE), AND A MINIMUM OF 30" WIDE. ON LONGER OR STEEPER SLOPES, THE BERM SHALL BE WIDER TO ACCOMMODATE THE POTENTIAL ADDITIONAL RUNOFF.
5. FROZEN GROUND, OUTCROPS OF BEDROCK, AND VERY ROOTED FORESTED AREAS PRESENT THE MOST PRACTICAL AND EFFECTIVE LOCATIONS FOR ORGANIC FILTER BERMS. OTHER BMPs SHOULD BE USED AT LOW POINTS OF CONCENTRATED RUNOFF, BELOW CULVERT OUTLET APRONS, AROUND CATCH BASINS, AND AT THE BOTTOM OF STEEP PERIMETER SLOPES THAT HAVE A LARGE CONTRIBUTING AREA.
6. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURES WHEN IT HAS ACCUMULATED TO ONE HALF THE ORIGINAL HEIGHT OF THE STRUCTURE.
7. STRUCTURES MAY BE LEFT IN PLACE ONCE THE SITE IS STABILIZED.

ORGANIC FILTER BERM

NOT TO SCALE

Design: JAC	Draft: LAZ	Date: 04/29/21
Checked: JAC	Scale: AS NOTED	Project No.: 21090
Drawing Name: 21090-PLAN.dwg		
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REV.	DATE	REVISION	BY
3	4/10/22	REMOVED ROAD	LAZ
4	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

Designed and Produced in NH

J/B Jones & Beach Engineers, Inc.

65 Portsmouth Ave.
PO Box 219
Stratham, NH 03885

Civil Engineering Services

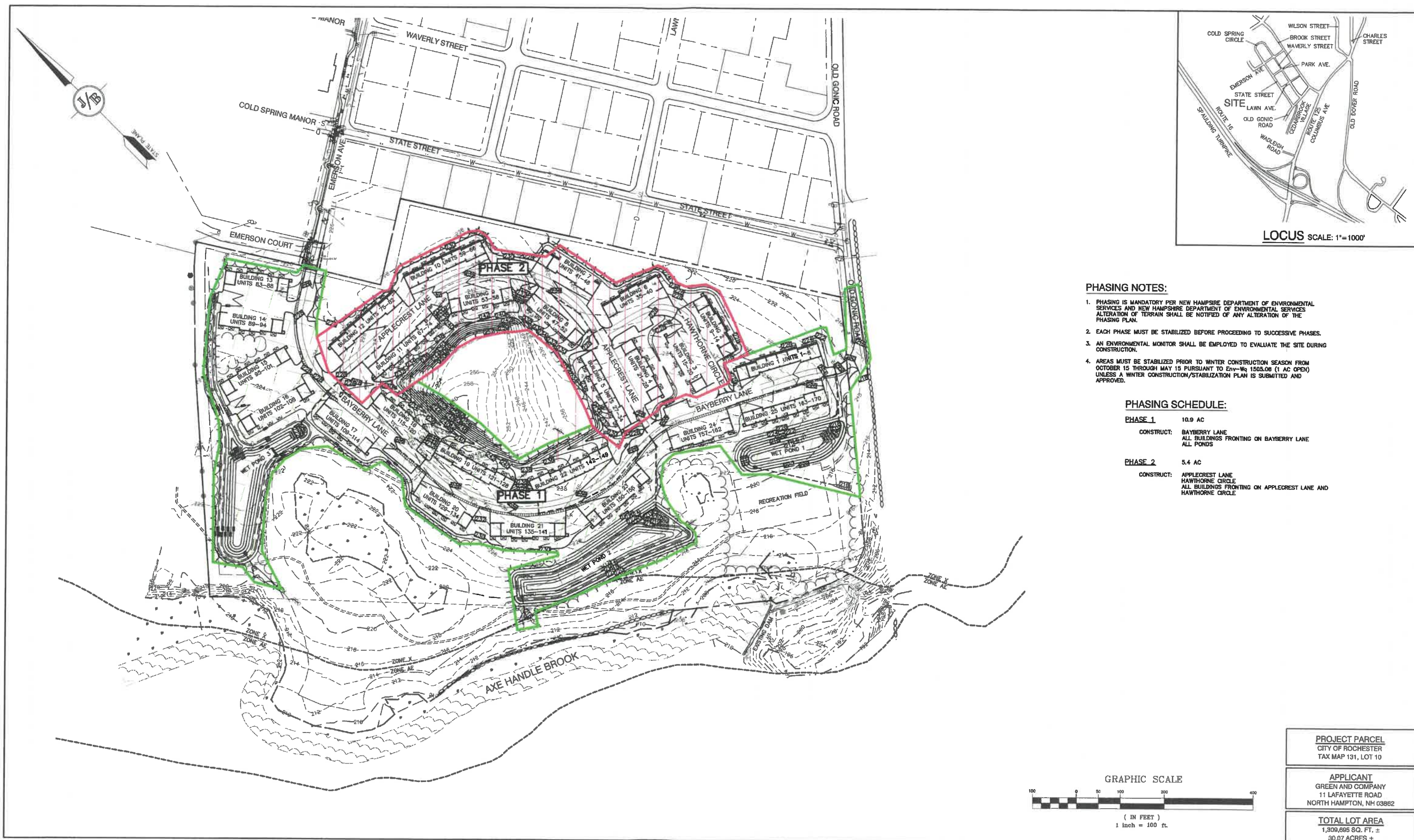
603-772-4746
603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	EROSION AND SEDIMENT CONTROL DETAILS
Project:	BAYBERRY COMMONS 19 OLD GONIC ROAD, ROCHESTER, NH
Owner of Record:	LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE 19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148

DRAWING No.

E1

SHEET 44 OF 45
JBE PROJECT NO. 21090

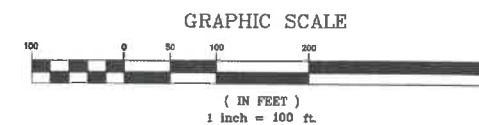


PHASING NOTES:

1. PHASING IS MANDATORY PER NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES AND NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES ALTERATION OF TERRAIN SHALL BE NOTIFIED OF ANY ALTERATION OF THE PHASING PLAN.
2. EACH PHASE MUST BE STABILIZED BEFORE PROCEEDING TO SUCCESSIVE PHASES.
3. AN ENVIRONMENTAL MONITOR SHALL BE EMPLOYED TO EVALUATE THE SITE DURING CONSTRUCTION.
4. AREAS MUST BE STABILIZED PRIOR TO WINTER CONSTRUCTION SEASON FROM OCTOBER 15 THROUGH MAY 15 PURSUANT TO ENV-W 1505.06 (1 AC OPEN) UNLESS A WINTER CONSTRUCTION/STABILIZATION PLAN IS SUBMITTED AND APPROVED.

PHASING SCHEDULE:

PHASE 1	10.9 AC
CONSTRUCT:	BAYBERRY LANE ALL BUILDINGS FRONTING ON BAYBERRY LANE ALL PONDS
PHASE 2	5.4 AC
CONSTRUCT:	APPLECREST LANE HAWTHORNE CIRCLE ALL BUILDINGS FRONTING ON APPLECREST LANE AND HAWTHORNE CIRCLE



Design: JAC Draft: LAZ Date: 04/26/21
Checked: JAC Scale: AS NOTED Project No.: 21090
Drawing Name: 21090-PLAN.dwg
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.



REV.	DATE	REVISION	BY
4	4/10/22	REMOVED ROAD	LAZ
3	3/11/22	REVISED PER CITY COMMENTS	LAZ
2	2/14/22	REVISED PER CITY ENGINEERING COMMENTS	LAZ
1	1/18/22	REVISED PER CITY COMMENTS	LAZ
0	11/23/21	ISSUED FOR REVIEW	LAZ

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
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603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **PHASING PLAN**
Project: **BAYBERRY COMMONS
19 OLD GONIC ROAD, ROCHESTER, NH**
Owner of Record: **LEO P. LACOUTURE REV. TRUST & WILLIAM B. LACOUTURE
19 OLD GONIC RD., ROCHESTER, NH 03867 BK 4093 PG 148**

PROJECT PARCEL
CITY OF ROCHESTER
TAX MAP 131, LOT 10

APPLICANT
GREEN AND COMPANY
11 LAFAYETTE ROAD
NORTH HAMPTON, NH 03862

TOTAL LOT AREA
1,809,695 SQ. FT. ±
30.07 ACRES ±

DRAWING No.

PH

SHEET 45 OF 45
JBE PROJECT NO. 21090