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February 21, 2020

VIA HAND DELIVERY AND ELECTRONIC FILING

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Petition No. 983 - BNE Energy Inc. Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, maintenance, and operation of a 4.8 MW Wind Renewable Generating facility located on Flagg Hill Road, Colebrook, Connecticut.

Dear Ms. Bachman:

My client, BNE Energy, Inc., hereby respectfully submits one (1) original and fifteen (15) copies of BNE's response to the Connecticut Siting Council's January 24, 2020 D&M Interrogatories. We are also submitting one (1) compact disc containing this submittal and two (2) full-sized sets of drawings.

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

Sincerely,

Lee D. Hoffman

Lee D. Hoffman

Encs.

Petition 983 – Wind Colebrook South

Certification

A copy of the foregoing has been mailed this date to all parties and intervenors of record.

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STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

BNE Energy, Inc. Petition For a Declaratory Ruling That No Certificate of Environmental Compatibility and Public Need Is Required for the Construction, Maintenance, and Operation of a 4.8 MW Wind Renewable Generating Facility Located on Flagg Hill Road, Colebrook, Connecticut.	**Petition 983** **February 21, 2020**

PETITION 983: BNE ENERGY, INC.'S RESPONSE TO THE CONNECTICUT SITING COUNCIL'S JANUARY 24, 2020 D&M INTERROGATORIES

BNE Energy, Inc. hereby submits the following responses to the Siting Council's January 24, 2020 Interrogatories.

Notice

1. **Please submit an abutters map.**

   Answer: Please see the attached abutters map, included as Exhibit A.

2. **Has BNE Energy, Inc. (BNE) provided notice to the owners of parcels located south, east and west of the 53 Flagg Hill Road, Colebrook parcel regarding the proposed Development and Management Plan (D&M Plan) Modification for the third turbine (T3)?**

   Answer: On January 31, 2020, notice of the proposed D&M Plan modification was provided to: (1) the Federal National Mortgage Association, the owner of 47 Flagg Hill Road; (2) Jonathan Gold, the owner of a parcel located on Skinner Road in Winchester, and (3) the Grant Swamp Group, the owner of 246 Danbury Qtr Road. These are the three parcels that abut the 53 Flagg Hill Road parcel that had not been previously provided with notice of Petition 983.

3. **Referencing Tab B, please submit the missing exhibits attached to the Option Agreement for 53 Flagg Hill Road.**

   Answer: Please see the attached Exhibits to the Option Agreement for 53 Flagg Hill Road, included as Exhibit B.

Site Development

4. **Was T3 selected through an RFP process? If so, please explain.**

Answer: Yes. T3 was selected through an RFP process issued by the Connecticut Department of Energy and Environmental Protection (DEEP) issued on March 9, 2016 to enter into power purchase agreements (PPA) with Eversource Energy and the United Illuminating Company.

5. **According to the July 17, 2018 request for extension of time for construction and the August 16, 2018 explanation for the request for extension of time for construction, BNE indicated that it entered into a power purchase agreement (PPA) for T3 with Eversource and the UI on June 20, 2017.**

    a) Does the PPA have provisions for the sale of the electricity and the renewable energy certificates generated from T3?
    b) What percentages of electricity are to be sold to Eversource and UI?
    c) For what megawatt output?
    d) Is there a cap on the megawatt output of T3 per the PPA?

    Answer: Please see responses below.

    a) Does the PPA have provisions for the sale of the electricity and the renewable energy certificates generated from T3?

        Yes, the PPAs have provisions for the sale of the electricity and renewable energy certificates generated by T3 to Eversource and UI for a twenty-year term.

    b) What percentages of electricity are to be sold to Eversource and UI?

        Eversource and UI will purchase 80.36 percent and 19.64 percent, respectively, of the electricity and renewable energy credits produced by T3.

    c) For what megawatt output?
    The PPAs total 3.83 MW of output from T3.

    d) Is there a cap on the megawatt output of T3 per the PPA?

        Yes, there is a cap of 3.83 MW in accordance with the PPAs. T3 will have a maximum capacity of 3.83 MW to comply with the terms of the PPAs.

6. **What is the length of the PPA? Are there provisions for any extension of time in the PPA? Is there an option to renew?**

    Answer: The length of the PPA is for twenty years from the commencement of commercial operations. There are provisions for an extension to meet certain milestones in the PPA prior to commencing commercial operations, but there are no options for extension or options to renew the twenty-year term once T3 begins commercial operations.

7. **If the PPA expires and is not renewed and T3 has not reached the end of its lifespan, will BNE decommission T3 or seek other revenue mechanisms for the power produced by T3?**

   Answer: The rated life of T3 is approximately 25 years and it is expected to operate for 25 to 30 years. At the end of the 20-year term of the PPAs, BNE will seek other revenue mechanisms to maximize the useful life of T3. Once T3 has reached the end of its useful life, T3 will be decommissioned in much the same fashion as the other two turbines that have previously been constructed on the site.

8. **What other wind turbine models does GE or Enercon have available that are suitable for the site and compatible with the PPA?**

   Answer: BNE has evaluated various wind turbine options from GE, Enercon and other turbine suppliers, and there are only two suitable, available turbines for the site: the Enercon 4.2-138 and the Enercon 3.5-138. The Enercon 4.2-138 and the Enercon 3.5-138 are the same size as each other, however, the Enercon 4.2-138 produces more electricity. Given that the sizes of the two turbines were the same, the Enercon 4.2-138 was selected due to its ability to generate more electricity in the same sized platform.

   The WCS site has strong wind turbulence which limits wind turbine options to only the most robust turbines from leading suppliers that are designed to handle strong turbulence and are determined to be suitable for the site by the turbine supplier. Another limiting factor for wind turbine options is the small size of the project. Several leading turbine suppliers such as Siemens and Vestas have minimum project size requirements and will not sell or offer an operating and maintenance agreement with small projects particularly a one-turbine project such as WCS T3.

   Also, the GE 2.85-103 wind turbines at 98.3 meter hub heights are no longer available due to changes in GE's product line as GE is focusing on much larger wind turbines to keep pace with its competitors as wind turbine technology throughout the industry continues to increase in size. GE recently launched a 5.3-158 MW wind turbine which has a revolutionary two-piece wind turbine blade design so the blades can be significantly larger and assembled onsite. The GE 5.3-158 is significantly bigger than the Enercon 4.2, but that turbine was considered in BNE's deliberations before being rejected due to size and suitability for the site. As a result, GE does not currently offer a wind turbine suitable for the site, and if one becomes available it will likely be considerably larger than the Enercon 4.2-138.

   As indicated above, Enercon does offer one other wind turbine model that is suitable for the site, which is the 3.5-138 MW wind turbine. However, the Enercon 3.5 wind turbine would be the same size as the 4.2 with 138 meter diameter blades and a 128 meter hub height, but would produce less renewable energy. This is because the Enercon 4.2 is an updated version of the 3.5 with the same specifications that is being introduced in 2020 with certain improvements including a larger generator that will increase renewable energy production. As a result, the Enercon 4.2 MW wind turbine is the most suitable available

wind turbine that will maximize renewable energy production at the site. There are no other wind turbine options from Enercon, GE, or any other wind turbine suppliers that are suitable for the site currently available for T3.

9. **Please submit the technical documentation and setback considerations (equivalent to the GE documentation behind Tab F of the D&M Plan Modification) for the Enercon 4.2.**

   Answer: Enercon does not have minimum ice throw setback requirements equivalent to GE, but Enercon did conduct a site-specific risk assessment of ice throw for T3. That assessment is included as Exhibit C. In accordance with best practices, BNE will utilize the ice reduction modes and advanced capabilities of the Enercon 4.2 to enhance safety and minimize the potential for ice throw. The Enercon 4.2 is equipped with an ice detection system, which is based on a specially developed and patented characteristic curve analysis method. During operation, the ice detection system compares current operating data such as wind, power and blade angle with the recorded long-term mean values. Ice build-up on the wind energy converter changes the aerodynamic properties. The optional blade heating system will also be utilized to reduce the potential for icing and will switch on during winter months as a preventative measure when temperature and relative humidity are within certain-defined thresholds that may lead to icing. If ice is detected for safety reasons, the turbine will automatically shut down to reduce icing and prevent ice throw. Once the turbine is shut down, the optional blade heating system that will be installed on T3 will automatically switch on to melt the ice. The turbine will remain shut down until all of the ice is melted and the turbine can be safely restarted.

   These best practices and advanced capabilities will enhance safety and significantly reduce the potential for ice throw. Based on the results of Enercon's ice throw analysis, ice drop will not extend beyond the length of the blades and any icing that may occur will be entirely contained to the project site. As noted in the ice assessment, the ice fall/throw probability around the considered areas are null.

10. **What is the projected operational life of T3?**

    Answer: The Enercon 4.2 MW wind turbine has a design service life of 25 years.

11. **Provide the longitude and latitude coordinates of the center of the T3 tower.**

    Answer: The coordinates of the center of the T3 tower are as follows:

    T3 - Latitude 41° 57' 38.95N"; Longitude 73° 08' 59.81"W

12. **Page 4 of the D&M Plan Modification indicates that the nearest residence is 1,027 feet away from T3 and the second nearest residence is 1,600 feet away from T3. Provide the addresses of both residences. Please also provide the distances from the**

center of the T3 tower to the residences and to the associated residential property lines.

Answer: The closest residence to T3 is owned by Julia and Jonathan Gold, 319 Beckley Road, Norfolk, CT 06058. The center of the tower of T3 is 1,027 feet from the residence and 523 feet from the nearest property line in Norfolk and 321 feet to the nearest property line in Winchester which is forested land. The next closest home is owned by Jim Jasper, 324 Beckley Road, Norfolk, CT 06058. The center of the tower of T3 is 1,600 feet away from the residence and 1,585 feet away from the nearest property line. The next closest residence located at 29A Flagg Hill Road is 2,050 feet from T3 and all other residences are greater than 2,300 feet from T3.

13. **Page 1 of the D&M Plan Modification states, "BNE also has an option to purchase approximately 9.95 acres located at 45 Flagg Hill Road…" Drawing C001 also depicts the 9.95 additional acres directly to the south of the original site property. Referencing Tab C of the D&M Plan Modification, Purchase Option Agreement for 45 Flagg Hill Road, Colebrook, it states that the property from Option or consists of approximately 9.27 acres of land. Exhibit B to the Purchase Option Agreement – Map of Property also depicts 9.27 acres based on the "Property Line in Purchase Option." Please reconcile the 9.95 acres with the 9.27 acres.**

Answer: The Purchase Option Agreement and Exhibit B are correct regarding the amount of land of approximately 9.27 acres to be purchased by BNE. The D&M drawings have been updated to reflect the correct acreage of the land described in the purchase agreement, and are included with these interrogatory responses. The revision required a slight modification of the access drive alignment and grading in the area of the land to remain with 45 Flagg Hill Road. All other grading of the access drive and turbine pad area, including the wetland crossing, has not been altered from the previous submission.

Energy Output

14. **Have electrical loss assumptions been factored in to the 4.2 MW output of T3? Please explain.**

Answer: The Enercon 4.2 MW will be capped at 3.83 MW to comply with the terms of the PPAs and a 2% electrical line loss has been factored in to the expected output of T3.

15. **What is the T3 output (MW AC) at the point of interconnection?**

Answer: The maximum output of T3 is 3.83 MW AC at the point of interconnection.

16. **What is the projected annual capacity factor (expressed as a percentage) and projected annual megawatt-hours (MWh) for T3?**

Answer: The projected annual capacity factor of T3 is 37.6% and the projected annual electricity production for T3 is 13,845 MWh. These numbers would be approximately 1.6% higher if T3 was not capped at 3.83 MW with a projected annual capacity factor of 38.2% and a projected annual electricity production of 14,069 MWh.

17. **Would the utilization of noise reduction or ice reduction modes have an impact on annual energy output? If so, please explain.**

Answer: The utilization of noise reduction modes could substantially reduce annual energy output by limiting energy production in order to reduce sound. For example, without utilizing noise reduction modes the highest expected sound power level of the Enercon 4.2 is 106.0 dBA while producing 4.2 MW of power. In operating mode 3500 kW, the wind energy converter operates with reduced power at a maximum output of 3.5 MW in order to reduce the highest expected sound power level to 105.5 dBA. This would result in a significant reduction in annual energy output in order to reduce sound output from 106 to 105.5 dBA. BNE does not expect to utilize sound reduction modes in order to comply with applicable noise standards.

The utilization of ice reduction modes enhances safety from ice drop and can increase electricity production. The Enercon 4.2 is equipped with an ice detection system, which is based on a specially developed and patented characteristic curve analysis method. During operation, the ice detection system compares current operating data such as wind, power and blade angle with the recorded long-term mean values. Ice build-up on the wind energy converter changes the aerodynamic properties and the wind turbine is automatically stopped until the ice is melted. Additionally, T3 will have the optional blade heating system installed which can minimize icing and shorten thawing time thus increasing production. BNE will utilize Enercon's sophisticated ice detection system and optional heated blade systems for T3 to enhance safety and improve renewable electricity production.

Interconnection

18. **Would T3 connect to existing three-phase electric distribution on Flagg Hill Road? If yes, please respond to the following:**

    a) **What is the line voltage of the existing electric distribution?**
    b) **Would any upgrades to the existing electric distribution be necessary to accommodate the interconnection?**
    c) **What entity is responsible for the electric distribution upgrades work, if applicable?**

Answer:

a) What is the line voltage of the existing electric distribution?

The line voltage of the existing electric distribution connection is 23 kV.

b) Would any upgrades to the existing electric distribution be necessary to accommodate the interconnection?

Yes, approximately 5.5 miles of the three-phase 23 kV line will be upgraded to a 27 kV line connecting the project directly to the Riverton substation.

c) What entity is responsible for the electric distribution upgrades work, if applicable?

Eversource is responsible for the electric distribution upgrades work on its distribution system.

19. **Referencing Sheet E100, the top right corner notes "Ex. Xfmr Pads." What is the line voltage leaving T3? Would that voltage be changed to the distribution level voltage at the transformer pad area? Are any new or larger transformers needed?**

Answer: The line voltage from T3 will be 27 kV. No new transformer will be needed as the distribution system is being upgraded to a 27 kV connection. However, the existing onsite transformer for T1 and T2 will remain.

20. **Referencing Drawing E102 of D&M Plan Modification, why are two 5-inch electrical conduits proposed in the duct bank? Would there be two circuits?**

Answer: There are two 5-inch electrical conduits proposed in the duct bank consisting of one conduit for the power cable and one spare conduit (for use if a cable fault causes duct damage).

21. **Is the project interconnection required to be reviewed by ISO-NE?**

Answer: Yes, an ISO-NE transmission study is required for the project.

22. **Has a system impact study from the electric distribution utility been performed to ensure that the additional 4.2 MW for T3 can be accommodated? Does BNE have an Interconnection Agreement and with whom? Provide the status of such studies and agreements.**

Answer: BNE is in the process of working with Eversource to conduct the interconnection studies needed for T3. Once the interconnection studies are completed, BNE anticipates entering into an Interconnection Agreement with Eversource for T3 in the next few months.

Public Safety

23. Would the project comply with the National Electrical Code, the National Electrical Safety Code and any applicable National Fire Protection Association codes and standards? Please explain.

Answer: Yes, the project will comply with the NEC requirements for electrical systems both below and above 2,000 volts. The NESC is intended for utility companies, but BNE has followed the requirements for spacing, clearances, equipment ratings and safety. In addition, the site design will meet ANSI/IEEE Standards for protective devices, cable ratings and coordination. It will also meet or exceed Eversource requirements.

24. Condition No. 2(a) of the Council's June 2, 2011 Declaratory Ruling notes that, "The Southern Turbine (T1) shall have a location and/or rotor diameter that ensures rotating turbine blades would be confined to the host property." Would the T3 rotating blades extend over the property boundaries? Consider the "host property" to consist of the original host property plus the additional acreage to be acquired under the Option Agreements.

Answer: No, the rotating blades will not extend over property boundaries and will remain entirely within the property boundaries of the host property. The diameter of the wind turbine blades during operation is 138.6 meters and the rotating blades will remain entirely within the property boundaries of the host property at least 1.1 times the length of the blade from the property lines.

25. Would the proposed access drive and precast concrete bridge over the wetland be able to support cranes and other equipment to reach the site for construction?

Answer: The proposed access drive and precast concrete bridge over the wetland have been designed to accommodate the loads from the transport vehicles carrying equipment into the site. The support cranes will be constructed on-site, after the bridge crossing, to reduce the required bearing capacity of the bridge. This was done in order to minimize the size of the bridge necessary to safely carry equipment into the site and reduce the impact to the wetland area. A bridge capable of supporting the transport of a previously constructed crane would be far larger and would result in a greater impact to the wetland and surrounding area. The cranes necessary for construction have a minimum track width of 30', which would require a road width of at least 34'. This would have a significant impact on the grading footprint within the regulated area and the wetlands, hence the plan to construct the support cranes on-site will be pursued.

26. Provide a drawing to depict any proposed fence, if applicable. Include the height and type of fence and any appropriate signage.

Answer: No fencing will be installed for T3. Similar to T1 and T2, T3 is self-contained and locked and there is no need for fencing. Security cameras will also be installed at the site near T3 so that it will be monitored. There is a gate with no trespassing signs currently

installed at the main entrance to T1 and T2 to restrict unauthorized access to T3. However, BNE routinely conducts guided tours of the wind project to various members of the public including schools, environmental groups, organizations, families and individuals that would like to see Connecticut's only wind farm.

27. **Please submit the noise specifications for the Enercon 4.2.**

    Answer: The Enercon 4.2 turbine has a peak sound power rating of 106 dBA at a hub height of 128 meters at an operational wind speed of 12 meters per second.

28. **Referencing Finding of Fact (FOF) No. 101 from the June 2, 2011 Declaratory Ruling, BNE modeled noise at all of the receptor locations for Colebrook North and South and assumed noise from all six of the turbines. Would BNE expect that the operation of T3 would comply with the applicable Department of Energy and Environmental Protection (DEEP) Noise Control Standards, including infrasound and ultrasound, at the nearest residential receptors?**

    Answer: Please see the attached Sound Level Report for T3 conducted by Dr. Howard R. Quin, INCE, included as Exhibit D. Based on the results of the study, BNE fully expects that the operation of T3 will comply with the applicable DEEP Noise Control Standards at the nearest residential receptors.

29. **Referencing the December 2016 Noise Compliance Measurement Study submitted in compliance with Condition No. 2(j) of the June 2, 2011 Declaratory Ruling, noise levels from T1 and Turbine 2 (T2) ranged from 40-49 dBA at both the long term monitoring locations and at the nearest residential receptors. With the addition of T3, would the cumulative noise levels from all three of the turbines comply with the DEEP Noise Control Standards at monitoring locations L1, M1 and M3, as well as at the nearest residential receptors? Please explain.**

    Answer: Yes, with the addition of T3, the cumulative noise levels from all three turbines are expected to comply with the DEEP Noise Control Standards at monitoring locations L1, M1 and M3, as well as the nearest residential receptors. Please see Exhibit D, the Sound Level Report for T3 filed in response to Interrogatory 28.

30. **BNE notes that Enercon 4.2 is capable operating at reduced sound outputs if needed. Does BNE anticipate such measures would be necessary to comply with DEEP Noise Control Standards at the nearest residential receptors?**

    Answer: The Sound Level Report (Exhibit D) submitted in response to Interrogatory 28 was conducted without utilizing any of the sound reduction modes of the Enercon 4.2 and concluded that acoustic sound levels from all the wind turbines located in Colebrook of 39-48 dBA at nearby residential receptors are in compliance with and well below the maximum allowable noise levels of 61 dBA during the daytime and 51 dBA during nighttime periods at the nearest residential receptors from the wind turbines. Given the results of the Sound Level Report, BNE does not anticipate utilizing sound reduction

measures offered by the Enercon 4.2, as such measures would reduce renewable energy production. However, the sound reduction measures are available in the unlikely event such measures are needed to comply with applicable DEEP Noise Control Standards at the nearest residential receptors.

31. **Is Federal Aviation Administration (FAA) notice required? Has or will BNE filed notice with the FAA for T3 and/or any temporary construction structures, such as cranes?**

Answer: Yes, FAA notice is required for T3. BNE has made the applicable filing with the FAA and expects a determination in the next few months.

32. **Is FAA AC70/7460-1L marking and/or lighting required for T3? Please describe the required marking and/or lighting scheme for T3 during construction and operation. Would the installation of T3 require any modifications to the existing marking and lighting scheme currently employed for T1 and T2?**

Answer: T1 and T2 have one flashing red (L-864) light on each of the nacelles that are illuminated at night and flash simultaneously in accordance with FAA requirements. However, the FAA promulgated additional regulations in 2015 for wind turbines with tip heights above 500 feet in response to changes in the wind industry whereby wind turbines are getting larger in order to maximize wind resources, become more efficient and produce significantly more renewable energy. The applicable FAA lighting requirements for T3 are those for wind turbines with a tip height greater than 500 feet but less than 699 feet. T3 will be lighted with two flashing red lights (L-864) that will flash simultaneously and be arranged horizontally and positioned on opposite sides of the nacelle, so they are visible to a pilot approaching from any direction. The lighting on T3 will also be configured to flash simultaneously with T1 and T2.

33. **Referencing FOF Nos. 81 and 82 from the June 2, 2011 Declaratory Ruling, would T3 have emergency stop buttons located within the tower base and within the nacelle to stop the turbine in the event of an emergency? Would T3 also have an automatic fire suppression system and hand-held fire extinguishers?**

Answer: Yes, there are emergency stop buttons located at the base of the tower and in the nacelle to stop the turbine in the event of an emergency. An automatic fire suppression system will be installed in the electrical cabinet that is designed to suppress electrical fire during turbine operations. T3 will also have hand-held fire extinguishers at the base and in the nacelle. All technicians are trained in the use of fire extinguishers.

34. **Would the access to T3 be able to accommodate emergency responders? Could T3 be shut down and de-energized in the event of a fire? If so, how?**

Answer: Yes, access to T3 can accommodate emergency responders. When T1 and T2 were built, BNE hosted a tour and open discussion with local emergency responders of the

site and turbines so they were fully aware of the access to the site in the event of an emergency. BNE will also coordinate and cooperate with local emergency responders in a similar manner for T3. Yes, T3 can be shut down and de-energized in the event of a fire. T3 is equipped with multiple, redundant detection instruments that would safely shutdown the turbine in the event of a fire. T3 can also be shutdown remotely and at the site if a fire event is detected.

35. **Referencing page 4 of the D&M Plan Modification, BNE states, "GE's ice setbacks are among the strictest in the industry and would result in a setback of 711 feet from the nearest residence to T3." Does Enercon have setback standards? If yes, how do such standards compare to the GE standards noted behind Tab F of the D&M Plan Modification?**

Answer: Please see the Response to Interrogatory Number 9.

36. **Referencing page 4 of the D&M Plan Modification, BNE states, "Specifically, the Enercon 4.2 MW turbine has an option for a blade heating system which may be utilized for T3 to warm up the blade surface and melt ice which may form on the blades." When would the heaters operate, e.g. continuously when the ambient temperatures are below freezing, or only during an ice event shutdown to speed the melting process?**

Answer: As discussed in the Response to Interrogatory Number 9, the optional blade heating system will be utilized to reduce the potential for icing and will switch on during winter months as a preventative measure when temperature and relative humidity are within certain-defined thresholds that may lead to icing. If ice build-up is detected for safety reasons, the turbine will automatically shut down to reduce icing and prevent ice throw. Once the turbine is shut down, the optional blade heating system that will be installed on T3 will automatically switch on to melt the ice. The turbine will remain shut down until all of the ice is melted and the turbine can be safely restarted.

Environmental

37. **Referencing FOF No. 134 of the Council's June 2, 2011 Declaratory Ruling, would shadow flicker beyond approximately 1.25 miles from T3 be negligible similar to shadow flicker beyond approximately 1.25 miles from T1 and T2? Please explain.**

Answer: BNE retained Vermont Environmental Research Associates ("VERA") to analyze the potential for shadow flicker related to T3 and provide the following response. This analysis showed that shadow flicker from T3 beyond 1.25 miles would be negligible, similar to T1 and T2. As was explained in the Wind Colebrook South Supplemental Shadow Flicker Analysis prepared by Vanasse Hangen Brustlin ("VHB") in March 2011 (the "March 2011 Report"), shadow flicker intensity diminishes with distance from a wind

turbine. A conservative measure for determining the maximum distance to evaluate shadow flicker is using a distance equal to ten times the maximum turbine height (hub height plus rotor radius). In the case of T3, this distance is equal to 1,940 m which is 1.22 mi (10 * 126 m hub height + 69 m rotor radius). The calculation of shadow flicker for the March 2011 Report was extended out to 2,000 m (1.24 mi). Beyond these distances of approximately 1.25 miles, the shadow flicker is sufficiently diminished so as not to have an adverse impact.

38. Taking into account the direction of the sun, would any shadow flicker from T3 be expected at any residences?

Answer: BNE retained VERA to analyze the potential for shadow flicker related to T3 and provide the following response. Using similar assumptions to the March 2011 Report, three residences within 2,000 m of T3 were modeled to experience shadow flicker. Two of these three residences (identified in the March 2011 Report as receptor B and receptor L), were modeled to experience shadow flicker from the existing T1 and T2. The "Worst Case" scenario of annual shadow flicker for Receptor B is 31 hours with a daily maximum of 43 minutes in March and mid-September through mid-October and the Worst Case annual flicker for Receptor L is approximately 30.5 hours with a daily maximum of 29 minutes from mid-November through the end of January. The third residence was not previously modeled in the March 2011 report because it was more than 2,000 m away from the originally proposed wind turbine locations. This residence located at 129 Grantville Road Norfolk, CT 06058 is approximately 1,870 m (1.16 mi) away from the current T3 location and is modeled to experience limited shadow flicker under the "Worst Case" of approximately 6 hours annually with a daily maximum of 15 minutes during late May and late July. The modeled shadow flicker impacts from T3 totaling 67.5 annual hours for three residences detailed above under the Worst Case scenario are significantly less (79% less) than the predicted shadow flicker impacts of T1 and T2 of 312 annual hours for seven residences under the Worst Case scenario. BNE notes, however, that it has not received any complaints concerning shadow flicker since T1 and T2 began operating in 2015. Additionally, the two closest residences to T3 located at 319 Beckley Road and 324 Beckley Road in Norfolk will not receive any shadow flicker due to their location west of T3.

39. Were other wetland crossing methods in addition to the bridge considered? What are the environmental benefits of the bridge over any other crossing methods? Please explain.

Answer: The proposed plan specifies the installation of an arch bridge with a 30 foot span across the wetland stream in the area where the wetland is at its narrowest point. The bridge is designed with headwalls, wing walls, and footings that are all located outside of the streambed and provide the minimum disturbance possible to the wetlands and watercourse. According to the U.S. Army Corps of Engineers (ACOE) Connecticut General Permits Stream Crossing Best Management Practices (BMPs), spans, culverts, and pipe arches shall be sized so that they are at least 1.2 times wider than the bank full stream width and "spans are strongly preferred as they avoid or minimize disruption to the

streambed, and avoid entire streambed reconstruction and maintenance inside the culvert or pipe arch, which may be difficult in smaller structures." Additional benefits of the span vs. a culvert or pipe arch are the preservation of the natural stream bed and slope, and a greater cross-sectional area (openness ratio) that prevent blockage from debris and allow riverine wildlife to pass without constriction. These guidelines from the Army Corps are also in accordance with the best management practices and guidelines from the CT DEEP.

The proposed bridge has been designed to provide a span of at least 1.2 times the watercourse full bank width, to provide for continuous, uninterrupted flow of the 50-year frequency storm flows, and to eliminate the need for riprap within the streambed. This design meets the criteria for self-verification eligibility from the Army Corps of Engineers provided that the work is performed in accordance with the CT General Permit Stream Crossing BMPs to the extent practicable.

The alternates of using a pipe crossing, culvert, or seepage envelope all result in a larger disturbance to the wetland area and a greater disruption to the natural stream flow and riverine wildlife. Therefore, BNE believes that the proposed bridge span is the most environmentally beneficial crossing method for this project.

40. **It appears the bridge abutments are within the wetlands. If so, can the bridge span be extended so that the abutment construction areas remain out of the wetland?**

Answer: The size and span of the bridge chosen for the project stems from the consideration and balance of many factors. The span of 30' represents a width greater than 1.2 times the bank full width of the stream and is consistent with the guidelines from ACOE and CT DEEP to minimize the impact to the stream as outlined above. Extending the bridge to eliminate any wetland activity would significantly increase the cost of installation without providing a significant environmental benefit. As discussed above, the bridge has been designed to meet or exceed the criteria of both ACOE and CT DEEP to protect wetlands, watercourses, and wildlife.

41. **Referencing page 2 of the D&M Plan Modification, it states, "The new location is approximately 930' away (430' further) from the on-site vernal pools and entirely outside of the 750' protective boundary." Would the D&M Plan Modification be consistent with the 2015 U.S. Army Corps of Engineers Vernal Pool Best Management Practices?**

Answer: The Vernal Pool Best Management Practices (BMPs) published by the U.S. Army Corps of Engineers in 2015 outlines several practices and measures available to protect the water quality of vernal pools (VPs) and the wildlife that utilize them.

The ACOE recommends development projects avoid disturbance within 100' of the VP edge and limit development to less than 25% of the land from 100-750' from the VP edge. The proposed project has no activity within this envelope at all. The closest activity to the vernal pool(s) is 930' away from the pool edge.

The ACOE also recommends that a directional corridor be provided for wildlife to access the vernal pools and migrate to other areas they might utilize for breeding or hibernation. The proposed project has a very limited area of clearing and preserves an overwhelming majority of the native forests and natural areas of the site. Additionally, the corridor from the vernal pools through the on-site wetlands and watercourses remain uninterrupted as part of the proposed plans and the use of the bridge for the wetland crossing maintains connectivity between the upland wetlands and vernal pools and down-gradient wetland areas.

The D&M Plan modification is consistent with the 2015 US ACOE Vernal Pool Best Management Practices in all aspects.

42. **Provide a viewshed map based on a 5-five mile radius from the center of the T3 tower location that includes an estimate of year-round and seasonal visibility. Provide photo simulations of T3. If possible, estimate which portion(s) of T3 would be visible.**

Answer: Please see the February 12, 2020 Visual Assessment prepared by All Points Technology Corp., included as Exhibit E.

43. **Describe the visibility of T3 from the two closest residences noted on page 4 of the D&M Plan Modification.**

Answer: Please see the February 12, 2020 Visual Assessment prepared by All Points Technology Corp., included as Exhibit E.

44. **With regard to construction, operation and maintenance of T3, would any of the following previously approved plans and protocols require revisions and if so, please explain.**

    a) **Wetland and Wildlife Restoration Plan;**
    b) **Ice Safety Management Plan;**
    c) **Post Construction Noise Monitoring Protocol;**
    d) **Post Construction Bird and Bat Monitoring Protocol; and**
    e) **Decommissioning Plan.**

Answer: BNE has updated the Ice Safety Management Plan for Turbine 3 attached hereto as Exhibit G to reflect the best practices and advanced capabilities of the Enercon 4.2 that will be utilized to minimize icing, prevent ice throw and enhance safety. The best practices reflected in the other previously approved plans and protocols listed above will not change and will be applied to T3.

Construction

45. **If the D&M Plan Modification is approved, identify all additional permits necessary for construction and operation.**

Answer: If the D&M Plan Modification is approved by the Siting Council, a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (General Permit) is required from DEEP and FAA approval is also required prior to the construction and operation of T3. BNE is not aware of any other permits or approvals that would be needed.

46. **Will construction of T3 require a modification to the existing General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (General Permit) for the site or would a new General Permit be required?**

    Answer: The construction of T3 will require a new General Permit from DEEP.

47. **On December 31, 2019, DEEP published notice of intent to reissue the General Permit (effective September 30, 2020). A redlined version of the proposed reissuance of the General Permit is available at: https://www.ct.gov/deep/lib/deep/public_notice_attachments/general_permits/2019december27constructiongpwithmodificationsmarkup-draftpermit.pdf**

    If a new General Permit or a re-registration of an existing General Permit is required, would construction of T3 comply with the proposed reissued DEEP General Permit? Please explain.

    Answer: Yes, the construction of T3 will comply with the proposed reissued DEEP General Permit, assuming that DEEP issues a new General Permit before construction of T3 begins. The reissued CT DEEP General Permit will require all future qualifying projects (over 5 acres in disturbance) to utilize the rainfall data from NOAA Atlas 14, Volume 10, Version 2 rather than the older NWS Technical Paper #40. This rainfall data is more intense and has a greater total 24 hour rainfall amount than the previously accepted data. The proposed stormwater management system, including swales, infiltration trenches, stormwater renovations areas, outlet protection, and piping have been designed to accommodate this more intense flow and function as intended. The application for the CT DEEP Stormwater General Permit is being resubmitted for approval to obtain an updated General Permit for this project and approval is expected in the next few months.

48. **Has BNE met with the DEEP Stormwater Division? If yes, when? Please describe any recommendations, comments or concerns about construction of T3 provided by the Stormwater Division.**

    Answer: BNE and its consultants and legal counsel have conferred with the DEEP Stormwater Division. A conference call was held on February 7, 2020 to discuss the changes to the stormwater plans related to T3. BNE subsequently provided updated plans with details describing the changes. After reviewing the details, DEEP determined that a new General Permit is required. BNE is in the process of submitting the application for a General Permit with DEEP for T3, and a meeting with BNE and DEEP stormwater personnel to discuss this application is currently scheduled for March 4, 2020.

49. **As part of the General Permit, would BNE retain a qualified, independent third-party inspector to monitor on-site E&S controls and appropriate environmental safeguards during construction?**

Answer: In compliance with the CT DEEP General Permit, a third-party, independent inspector shall be retained to monitor on-site E&S controls and report to the CT DEEP.

50. **What would be the construction timeline of the project from groundbreaking to full operation?**

Answer: Construction is expected to take between 6 to 9 months from groundbreaking to full operation, which is expected to be completed before the end of 2020.

51. **Provide the estimated typical construction hours and days of the week (e.g. Monday through Friday 8 AM to 5 PM)?**

Answer: The typical construction hours and days of the week for T3 are 7:30 am to 4 pm Monday through Friday, 8 hours per day with a half hour for lunch.

52. **Referring to Sheet C003:**
    a) **Are the 1.25 acres that are already noted as cleared within the project development area?**
    b) **Is the generally flat area with elevations between 1440 -1450 above mean sea level located northwest of Turbine 2 and east of the onsite wetland a viable location for T3?**

Answer:
a) The 1.25 acres noted as already cleared are within the construction area for Turbines #1 and #2 and also within the existing utility corridor that extends from Turbine #2 to Flagg Hill Road. The additional 7.2 acres of clearing are associated with the construction of the new access road and pad area for the proposed Turbine #3.

b) The location indicated in the comment above, northwest of Turbine #2 and between elevations 1440 and 1450 is not a suitable location for proposed Turbine #3. It is approximately 30-40' lower in elevation than Turbine #2 and the prevailing winds in this area originate from the northwest. If Turbine #3 were placed upwind of Turbine #2, Turbine #2 would experience significant bladewash and turbulent air. This would drastically decrease the renewable energy production and efficiency of Turbine #2.

53. **Referring to Sheet C300:**
    a) **What type of equipment will be used to install the utility trench from Flagg Hill Road to T3? For the segment extending uphill from Flagg Hill Road, can the new utility line be installed adjacent to the existing cleared "collection**

trench" corridor (refer to Sheet E100) rather than extending through a new forested area?

b) Indicate what types of pre and post construction E&S controls would be used for the utility corridor.

Answer:

a) The utility trench will be installed using standard construction equipment, such as excavators, bulldozers, dump trucks, and earth compaction equipment. The alignment of the proposed utility conduit has been revised in the D&M drawings to align with the existing conduit from the stepdown transformer near Turbine #2 out to the connection at Flagg Hill Road. The revised D&M drawings are included as Exhibit F.

b) Due to the minimal clearing necessary for the trench installation, silt fence will be adequate erosion and sedimentation control for the area. It shall be located on the down-gradient side of the trench and also shall include wing walls to prevent excessive runoff velocity and additional filtration.

54. **Referring to Sheet C302:**

a) The bridge construction area detail shows two separate rows of erosion and control barriers on the south side of the bridge and a single barrier on the north side of the bridge to protect adjacent wetlands. Should a second separate barrier also be installed on the north side?

b) How would the wetland area at the bridge location be crossed prior to bridge installation? Provide crossing detail.

Answer:

a) The additional row of erosion control barrier on the south side (in addition to the silt fence) is a row of staked haybales. The haybales are a secondary measure of protection where stormwater from the construction area is flowing down-gradient toward and wetland and is close proximity to said wetland area. This is the case for the south side of the road, but not for the north side of the road. On the north side of the road, the stormwater flows from undisturbed land toward the construction area and the silt fence proposed is a precautionary measure, but not, in that case, protecting down-gradient wetlands. It will act primarily as a limit of disturbance line to keep activity away from the wetlands.

b) Timber matting will be used as a temporary wetland crossing south of the proposed bridge. This measure is in conformance with best management practices outlined by the ACOE and CT DEEP as a temporary wetland/stream crossing for construction. A construction detail has been added to the D&M plans on Sheet C602.

55. **Referring to Sheet C600:**

a) A wetland impact figure of 2,320 square feet is provided related to the installation of the access road bridge. Is this temporary or permanent impact?

b) provide a narrative/sequence describing how the bridge would be constructed.

Answer:

a) The wetland impact footprint is being considered a permanent impact based on the square footage of the footings and wing walls for the installed bridge.

b) A construction narrative/sequence has been added to the plans on Sheet C600.

56. **<u>Referring to Sheet C601</u>: The Temporary Sediment Trap Outlet detail includes an amphibian barrier to be installed as noted on the Site Plans; however, the Site Plans do not have any marking indicating where the barriers would be installed. Please clarify.**

Answer: The proposed amphibian barrier shall be installed around the entirety of the TSTs at the berm elevation. They are constructed of silt fencing material and have been added to the plans on the Erosion Control Sheets (Sheets C300-C303).

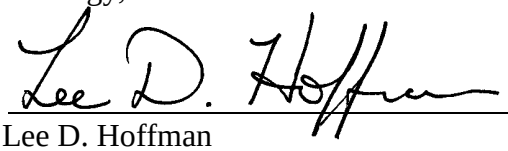
57. **<u>Referring to Sheet C602</u>: How will the swales, infiltration trenches, and detention basins be installed if shallow ledge is encountered? How would ledge affect runoff infiltration rates?**

Answer: Where areas of limited shallow ledge may be encountered, stormwater management features are installed in a similar manner as in areas of permeable soil. The area shall be blasted or hammered to a depth below subgrade of the swale or basin, the material for the swale or basin shall be laid down and graded, and then the area shall be seeded or riprapped to final condition. The blasting or hammering of the ledge will inevitably create fissures in the ledge to allow for the collection of some stormwater even in areas of ledge. In areas where infiltration is limited, stormwater will simply continue to flow through the swale and infiltrate in areas where the soils are more permeable and accepting of stormwater. In the Stormwater Renovation Areas, the basins are sized to accommodate the entire Water Quality Volume below the outlet invert and will eventually infiltrate even if the ground in that area has a slower infiltration rate. The larger storm events will be discharged through the outlet structure as designed and are not intended to completely infiltrate, even under ideal soil conditions. It is our professional opinion that the swales, trenches, and Stormwater Renovation Areas will function as designed even if areas of limited shallow ledge are encountered.

58. **Referencing FOF No. 73 of the Council's June 2, 2011 Declaratory Ruling, would maintenance of T3 generally be scheduled every six months, require T3 to shut down for approximately one-and-a-half days and include tightening of bolts, changing filters and topping off lubricants in the nacelle similar to the maintenance of T1 and T2? Please explain.**

Answer: Yes, maintenance of T3 would generally be scheduled every six months for approximately one-and-a-half days for mechanical and electrical maintenance including tightening of bolts, changing filters, topping off lubricants and testing various components similar to the maintenance of T1 and T2.

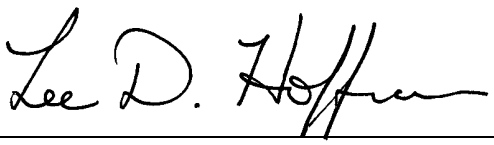
Respectfully Submitted,
BNE Energy, Inc.

By: 

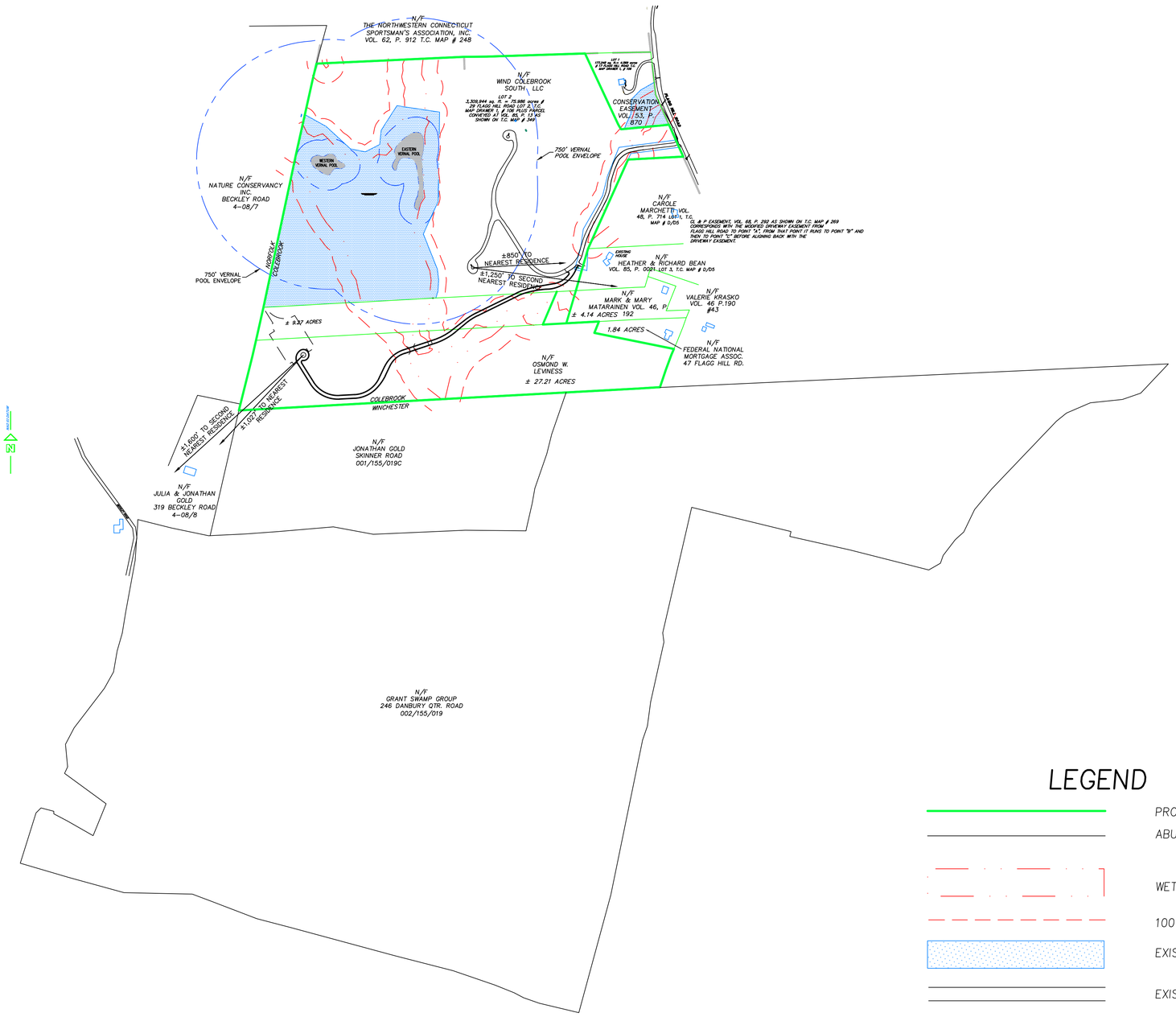
Lee D. Hoffman
lhoffman@pullcom.com
Pullman & Comley, LLC
90 State House Square
Hartford, CT 06103-3702
Ph. (860) 424-4315
Fax (860) 424-4370
Its Attorneys

Certification

This is to certify that a copy of the foregoing has been sent on February 21, 2020 to all parties and intervenors of record, on the Service List as of this date via U.S. Mail and/or Electronic Mail.



Lee D. Hoffman



LEGEND

- PROPERTY LINE
- ABUTTING PROPERTY LINES
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING OPEN SPACE
- EXISTING ROADWAY
- PROPOSED ROADWAY
- VERNAL POOL AREA
- 100' VERNAL POOL SETBACK
- 750' VERNAL POOL ENVELOPE

NO.	REVISION	DATE
1	ADD GRANT SWAMP PROPERTY	2/13/20

Previous Editions Obsolete

0 400 800

1 inch = 400 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

ADJACENT PROPERTY OWNERS LOCATION MAP

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT
CURTIS C. JOINER
No. 17908
LICENSED
PROFESSIONAL ENGINEER

DRAWN: DCL	APPROVED: CJ
SCALE:	1" = 400'
DATE:	7 FEB 20
PROJ. NO.:	3092
CADD FILE NAME:	3092 ARCH D
DRAWING NO.:	1 OF 1

Exhibit A

Description of Property

SCHEDULE 'A'

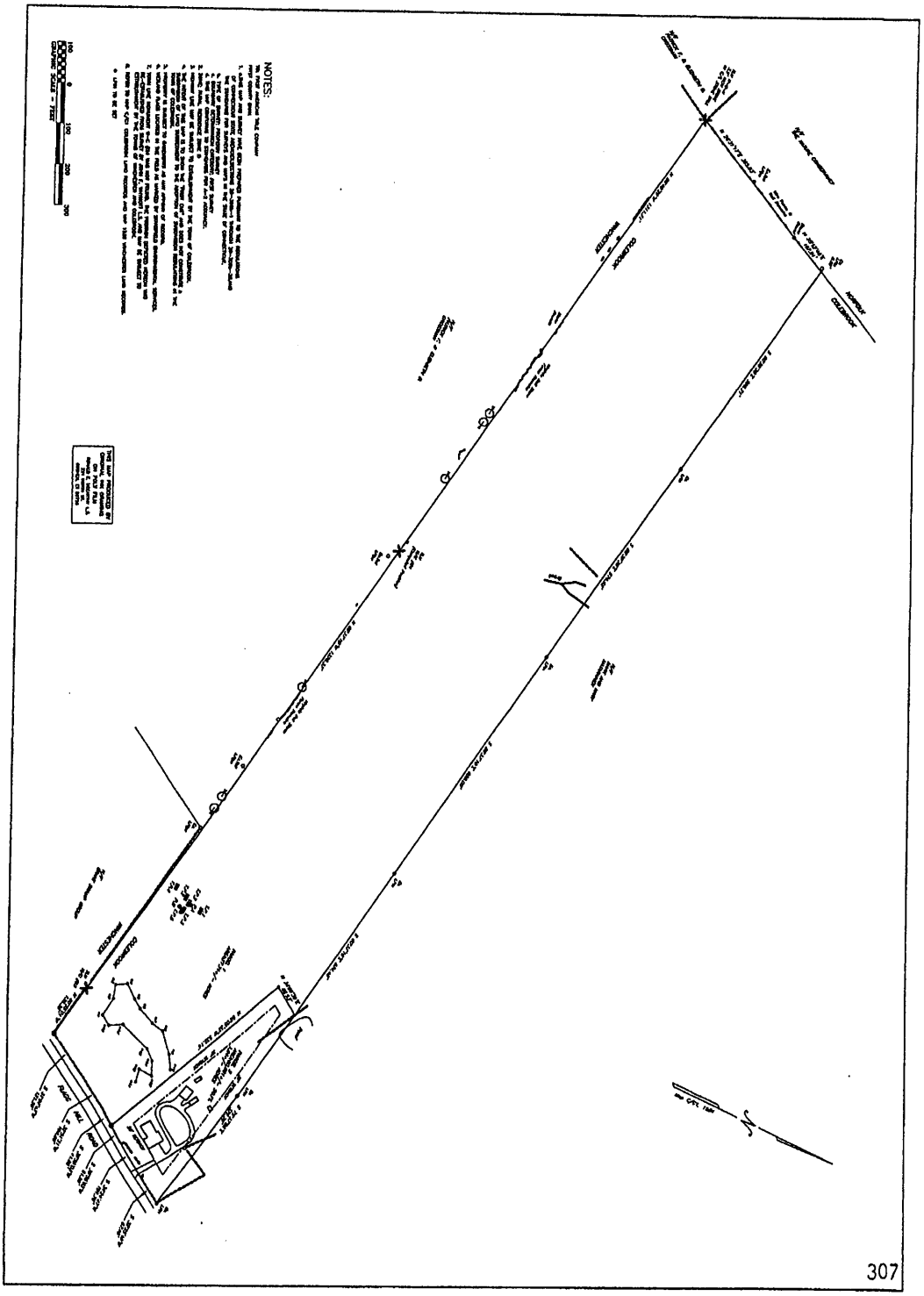
All that certain piece or parcel of land shown and designated as Lot 1 (Area: 27.21+/- Acres) on that certain map entitled:

"MAP PREPARED FOR MARK 7 LUCIA BAGG, FLAGG HILL ROAD, COLEBROOK, CONNECTICUT "Scale 1" = 100', 11/07/2006 and certified substantially correct by Ronald E. McCarthy, Licensed Land Surveyor, Goshen, Connecticut License # 18131" which map was recorded in the Land Records of the Town of Colebrook as Map No. 307 on November 21, 2006.

Reference may be had to a Certificate of Devise dated April 15, 1970 and recorded on April 22, 1970 in Volume 39 Page 140-141 in the Land Records of the Town of Colebrook

Exhibit B

Map of Property



MAP PREPARED FOR
MARK & LUCIA BAGG
FLAGG HILL ROAD
COLEBROOK, CONNECTICUT

SEAL

THIS MAP NOT VALID
WITHOUT EMBOSSED
SEAL AND LIVE SIGNATURE

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT, AS NOTED HEREON

Ronald E. Mc Carthy
Licensed Land Surveyor,LLC

231 North Street
Goshen, Connecticut 06756
860-491-6381

#307

Exhibit C

Notice of Exercise of Option to Purchase

NOTICE OF EXERCISE OF
OPTION TO PURCHASE

Pursuant to Paragraph 5 of the Option Agreement dated March 1, 2019, by and between MARK BAGG and LUCIA BAGG ("Optionor"), and BNE ENERGY ING. ("Optionee"), the Optionee hereby exercises its Option to Purchase said Property on this the _____ day of _____, 20__, pursuant to the terms set forth therein for the sum of **$240,000** in accordance with the terms of the Option Agreement. Enclosed herewith is a deposit in the sum of One Thousand ($1,000) Dollars, to be applied to the purchase of the Property. Should the closing and transfer of title fail to occur, this deposit shall be retained by Optionor as damages.

OPTIONEE:

BNE Energy Inc.

_____ _____
By: Date

Its
Duly Authorized

Acknowledged by:

_____ _____
Mark Bagg Date

_____ _____
Lucia Bagg Date

Exhibit D

Residential Real Property Purchase Contract

SALE OF REAL PROPERTY CONTRACT

THIS AGREEMENT to buy and to sell the real property located at **FLAGG HILL ROAD (Assessor's Unique ID Account # 990045 - 27.21 acres +/-), COLEBROOK, CT** and more particularly described on Schedule A Map attached hereto and made a part hereof (hereinafter referred to as the "premises") is made between:

MARK F. BAGG and LUCIA F. BAGG (hereinafter referred to as "SELLER") of 59 Pine Street, New Canaan, CT 06849 and **BNE ENERGY, INC.** (hereinafter referred to as "BUYER") of 17 Flagg Hill Road, Colebrook, CT 06021 for the agreed purchase price of:

TWO HUNDRED FORTY THOUSAND ($240,000.00) DOLLARS

I. Purchase Price is Payable as follows:

A.	By Deposit(s) due per the terms of Purchase Option Agreement	$ TBD
B.	By deposit due upon the exercise of the Option to Purchase	$ 1,000.00
C.	Balance due at closing by bank or certified check, wire transfer or attorney trustee check	$ TBD
D.	Total	$240,000.00

II. Deposits

The deposits specified in Section I (A) shall be made at the stated time pursuant to the terms of the Purchase Option Agreement dated March 1, 2019.

III. Condition of Premises

The BUYER represents that the BUYER has examined said property and are satisfied with the physical condition thereof. The property is being sold in an "AS-IS" condition. The subject parcel is an unimproved portion of SELLER's property. BUYER represents that it has performed its own due diligence and it is satisfied with the land in its current condition.

IV. Adjustments at Closing

Taxes, fuel, oil, utilities, rent, interest on sewer assessments and on security deposits, if any, water and sewer charges, and like matters shall be adjusted pro-rata, and rent security deposits, if any shall be credited to the BUYERS, all as of the date of closing. The taxes will be prorated according to the uniform fiscal year of the Town of Colebrook.

V. Included in Sale

N/A - unimproved land.

VI. Third Party Financing Contingency

The BUYER'S obligations hereunder are contingent upon the terms of the Purchase Option Agreement dated March 1, 2019.

VII. Warranty Deed, Marketable Title

SELLER agrees to convey said real property to the BUYER by good and sufficient Warranty Deed subject only to any and all provisions of any ordinance, municipal regulation, public or private law, restrictions and easements as appear of record, if any, provided they do not affect the marketability of title, current taxes, water and sewer use charges and current sewer assessment balance, if any; SELLER represents that the premises shall not be in violation of any such ordinance, municipal regulation, public or private law or restrictions at the time of closing. SELLER agrees to provide BUYER at the time of closing with the survey map in the possession of SELLER.

VIII. Closing Date, Place

The deed shall be delivered and purchase price paid on or before 15 days after the BUYER'S exercise of its Option at the office of the BUYER's Attorney.

IX. Condition of Title

It is understood and agreed that the title herein required to be conveyed by the SELLER shall be marketable and marketability thereof shall be determined in accordance with the standards of title of the Connecticut Bar Association now in force. It is also agreed that any all defects in or encumbrances against the title, which come within the scope of said title standards, shall not constitute a valid objection the SELLER furnish any affidavits or other instruments which may be required by the applicable standards. If, at the time of closing, the SELLER shall be unable to convey marketable title to said premises to the BUYER, then the BUYER may elect to accept such title as the SELLER can convey, upon payment of the purchase price, or may reject the deed conveying such unmarketable title. Upon such rejection, all sums paid on account hereof, together with the reasonable fees for examination of the title shall be repaid to the BUYER without interest thereon. Upon such rejection, this AGREEMENT shall terminate and become null an void and the parties hereto shall be released and discharged of all further claims and obligations each to the other.

X. No Assignments, Binding Effect

The AGREEMENT, which is the complete agreement between the parties, may not be assigned by either without the written consent of the other, but it shall be binding upon their heirs, executors, administrators and successors of the parties hereto.

XI. Occupancy, Possession, Grounds

The grounds shall be maintained by the SELLER until the time of the delivery of the deed or possession, whichever is later.

XII. Brokerage

All parties to this AGREEMENT agree that there is no broker involved and that there are no brokerage fees to any broker to this transaction, and each party indemnifies and holds the other harmless from any claim for brokerage fees of the other. This provision survives closing.

XIII. Default

If SELLER defaults under this AGREEMENT and BUYER is not in default, then BUYER shall be entitled to any and all remedies provided by law and equity including, but not limited to, specific performance and recovery of amounts spent for mortgage application, appraisal, title search, and tests or inspections. If a legal action is brought to enforce any provision of this AGREEMENT, the prevailing party shall be entitled to court costs and attorney's fees.

XIV. Notices

All notices sent pursuant to this AGREEMENT shall be written notice signed and sent by registered mail return receipt requested to the Seller and the Purchaser at the addresses set forth at the beginning of this Contract, and with copies as follows:

-A copy of any notice sent to the Seller at the address set forth herein along with a copy to Law Offices Paul R. Vallillo, LLC, The Prospect Law Center at Crosspointe North, 50 Waterbury Road, Suite 2C, Prospect, CT 06712 or electronically to paul@vallillo-law.com.

-A copy of said notice sent to the Purchaser at the addresses set forth herein along with a copy to _____or electronically to _____.

XV. Other Conditions

A. This Agreement is subject to a certain Purchase Option Agreement executed between the parties on March 1, 2019. This Sales Agreement is appended thereto as Exhibit D and made a part thereof.
B. The cost of a title search is BUYER’s responsibility.
C. Property Condition Disclosure - N/A
D. Survey (A-2), upon title transfer, is BUYER's responsibility.

[signatures on next page]

SELLER:

_____L.S.
MARK F. BAGG

_____L.S.
LUCIA F. BAGG

BUYER:

_____
BNE ENERGY, INC.
By: Gregory J. Zupkus
Its President and CEO
Duly authorized

ENERCON ICE RISK ASSESSMENT
Wind Colebrook South Turbine 3

This risk assessment aims at quantifying and evaluating the site specific risks initiated by ice pieces falling or being thrown from Wind Energy Converters (WEC). The wind farm is composed of 1 E-138 WEC at a 131 m hub height. The risk assessment process includes: modelling of impact positions, risk analysis and risk evaluation.

Most of the input data for the assessment was provided by the Client. This includes the wind data, position of the planned turbine, the vulnerable areas located in the vicinity of the WEC and any existing risk requirement for the zone.

Based on the wind data, ENERCON estimated the wind regime and the icing conditions.

As per the Client's feedbacks and inputs, risk to the following vulnerable areas was considered (see figure below):

1. House area (purple)
2. Road area (yellow)
3. Walking area (orange)
4. Barn & pool area (beige)

Figure 1: Areas considered for the ice throw analysis

Since no site specific information was provided regarding risk acceptance for Colebrook project, therefore the Low As Reasonably Practicable (ALARP) principle will be used. Those thresholds are described below.

Risk value [1/a]		Evaluation
Societal risk (without risk aversion)	**Individual risk**	
$> 10^{-3}$	$> 10^{-5}$	The risk is unacceptable high. Risk reduction measures shall be initiated.
10^{-4} to 10^{-3}	10^{-6} to 10^{-5}	The risk is high and it is located in the upper ALARP region. Well-known risk-reducing measures shall be implemented and it is advised to look for additional risk-reducing measures.
10^{-5} to 10^{-4}	10^{-7} to 10^{-6}	The risk is tolerable and in the lower ALARP region. If further common measures to reduce the risk are known, they should be examined under cost-benefit aspects. A recommendation to implement such measures is not pronounced.
$< 10^{-5}$	*$< 10^{-7}$*	*The risk is lower than any risks people are exposed in normal life.*

Table 1: ALARP limits adapted from «INTERNATIONAL RECOMMENDATIONS for Ice Fall and Ice Throw Risk Assessments,» IEA wind TCP Task 19, 2018; A. Krenn, N. Weber, S. Barup, T. Weidl, A. Hoffmann, R. E. Bredesen, M. Lannic, S. Müller, N. Stoffels, T. Hahm et F. Storck,.

It should be noted that the turbine will be equipped with a rotor blade heating system and an ice detection system.

The mode “operational & preventive heating” will be used during winter months. The WEC can switch on the rotor blade heating if temperature and relative humidity are within client-defined thresholds

If ice is detected and for safety reasons, the turbine will be automatically switched to the ‘’Standstill & None heated’’ mode (safer mode in terms of ice throw). **As shown in Figure 2 below, with such a mode, the ice fall/throw probability around the considered areas is null.**

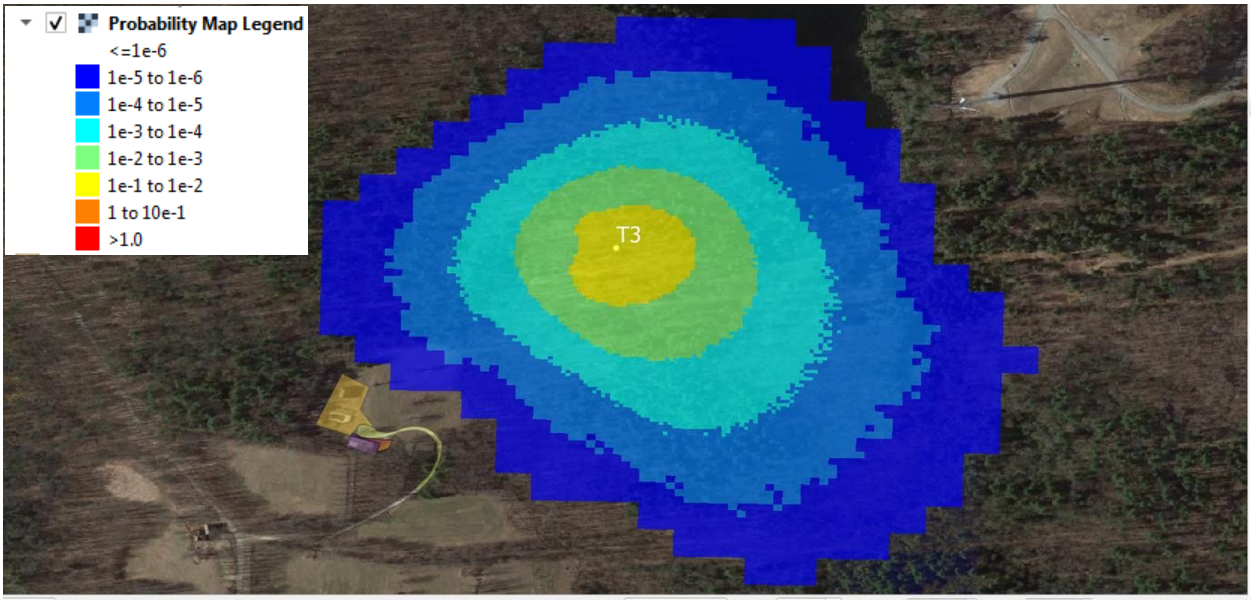


Figure 2: Ice fall/throw probability results (hits/m2/year)

The results in the table below show Individual Risk Per Annum (IRPA) and Potential Loss of Life (PLL) coloured according to the ALARP scale.

Table 1: Summary of IRPA and PLL results for Ice Throw

Risk metric		Value	ALARP category
IRPA	[Fatalities/person/year]	0	Acceptable
PLL	[Fatalities /year]	0	Acceptable

As a result of our analysis, we can conclude that the risks of ice throw for the population related to the installation and operation of the WEC, are acceptable. This statement is based on the following conditions and assumptions:

a) the data provided by the Client are correct and duly reflect the wind conditions prevailing at the site,

b) the vulnerable areas, locations and specifications in the project zone provided by the client duly reflect the human presence around the WEC

c) the risk acceptance criteria and regulations used herein are correct and applicable for the installation,

d) the final layout of the WEC at the site corresponds to the layout sent by the Client (email of February 7, 2020)

e) the proposed risk treatment/mitigation strategies are considered, and

f) Compliance to risk related regulations and restrictions, relevant for the given installation, is ensured.

Wind Colebrook South

Sound Level Report with Turbine Three

Dr. Howard R. Quin, INCE

February 6, 2020

Executive Summary

A noise modeling program was conducted for three wind turbines consisting of the two GE 2.85 MW wind turbines installed at the site and the third Enercon 4.2 MW wind turbine to be installed at Wind Colebrook South in the Town of Colebrook, Connecticut. In this report, we have reviewed applicable noise standards and criteria and described the modeling program that was conducted to determine whether the project complies with applicable standards. It is our professional opinion, given the modeled results in this study, that acoustic sound levels from all the wind turbines located in Colebrook of 39-48 dBA at nearby residential receptors are in compliance with and well below the maximum allowable noise levels of 61 dBA during the daytime and 51 dBA during nighttime periods at the nearest residential receptors from the wind turbines.

Noise Standards and Criteria

Generally speaking, noise standards are usually defined as either absolute levels or amount over ambient background. Ambient is usually defined as the background A-weighted sound level that is exceeded 90 percent of the time (i.e. L90) measured during equipment operating hours.. For the case where the turbines run continuously, the turbine sound is usually the ambient, depending on locations and other background sources. A wind turbine only operates when there is sufficient wind speed to run it, which is generally 4 meters per second (m/s) (9 mph) measured at a height of 10 meters (m), or about 5 m/sec at hub height. Typically, turbines create peak sound levels near full production levels between 10 and 12 m/sec.

The noise modeling program was conducted to demonstrate that the operation of the wind turbines at Colebrook South will meet the Connecticut Department of Energy and Environmental Protection's (DEEP) noise control regulations (Title 22a, §§ 22a-69-1 to

22a69-7), which are contained in the Regulations of Connecticut State Agencies. These regulations are as follows:

Table 1

Noise Zone Standards, L90 (dBA)

	Class A Daytime	Class A Nighttime	Class B	Class C
Emitter Zone				
Class A (Residential)	55	45	55	62
Class B (Commercial)	55	45	62	62
Class C (Industrial)	61	51	66	70

Source: Control of Noise (Title 22a, Section 22a-69-1 to 22a-69-7.4), Regulations of Connecticut

The Emitter Zone for Colebrook South is Class C (Industrial) which shall not emit noise exceeding the levels stated in Table 1 at the adjacent noise zones. The relevant sound limits from the table are 61 dBA daytime and 51 dBA nighttime. In measuring compliance with Noise Zone Standards, the following short-term noise level excursions over the noise level standards established by these Regulations shall be allowed.

Allowable levels (dBA)	Time period of above standards such levels (minutes/hour)
3	15
6	7 ½
8	5

Predicted Wind Turbine Noise Levels and Impact

The operational noise levels from the proposed wind turbines were predicted in the Colebrook study area using 1) reference noise emissions information for the proposed turbine provided by BNE Energy, 2) aerial photography and digital terrain information from the National Mapping Data Base and 3) the Soundplan® noise prediction model.

Noise Prediction Model and Noise Source Characteristics

The Soundplan® computer noise model was used for computing sound levels from the proposed wind turbines throughout the surrounding community. An industry standard, Soundplan was developed to provide estimates of sound levels at distances from specific noise sources taking into account the effects of terrain features including relative elevations of noise sources, receivers, and intervening objects (buildings, hills, trees), and ground effects due to areas of hard ground (pavement, water) and soft ground (grass, field, forest). In addition to computing sound levels at specific receiver positions, Soundplan can compute noise contours showing areas of equal and similar sound level.

As input, Soundplan incorporated a *geometric model* of the study area, reference *noise source* levels. Soundplan uses a *sound propagation model* to project noise levels from turbine operations into the surrounding community. The three-dimensional geometric model of the study area was developed from aerial photography and digital terrain information obtained from the National Mapping Data base.

The reference noise source levels were obtained from data supplied by the manufacturer. The existing GE 2.85 MW turbines have a peak sound power rating at an operational wind speed of 105dBA (the same levels apply above) at a hub height of 98.3 meters at a wind speed of 14 m/sec. The new Enercon turbine has a peak sound power rating of 106 dBA at a hub height of 128 meters at an operational wind speed of 12 m/sec. Two decibels have been added to the levels used in the model to obtain a conservative estimate of the turbine sound power levels (shown below) consistent with recent standard practice. The A-weighted totals and unweighted spectrum levels are shown in Table 1 as included in the Soundplan noise prediction model.

The sound propagation model within Soundplan that was used for this study was ISO 9613-2. This international standard propagation model is used nearly universally in the U.S. for wind turbine noise studies, due to its conservative propagation equations. ISO 9613-2 uses "worst-case" downwind propagation conditions in all directions, and accounts for variations in terrain and ground type. In order to be conservative about noise attenuation from ground effects, we have used a spectral ground attenuation G factor of 0.25, which is used in hard ground areas with snow pack, which would sometime occur at Colebrook in the winter (worst case conditions), and is equivalent to a non-spectral G of 0.

Table 1.

Reference Design Speed Sound Power Level Spectrum for Existing GE 2.85 MW Turbines and New Enercon 4.2 MW Turbine

Octave-band Center Frequency (Hz)	Peak Sound Power Existing GE 2.85 MW Turbines	Peak Sound Power New Enercon 4.2 MW Turbine
32	80.3	75.7
63	90.2	87.4
125	94.6	93.2
250	96.3	96.1
500	97.7	98.5
1000	98.9	100.0
2000	98.9	100.6
4000	93.0	95.6
8000	73.9	79.7
A-weighted, total	**105**	**106**

The Turbine Coordinates used in the modeling study are given below. T1 and T2 are the existing turbines.

T1 – Lat: 41.962417°; Long: -73.145857°

T2 – Lat: 41.964772°; Long: -73.145010°

T3 – Lat: 41.960819°; Long: -73.149947°

Predicted Turbine Noise Levels in the Community

Table 2 shows the predicted Leq noise levels from the proposed wind turbines at the closest locations. The noise level predictions are based on the standard reference wind speed of 10 m/sec as measured at 10 meters height (note that at all other speeds above this the turbines have the same noise level). The results show that the turbines will be well under the special use permit level of 51 dBA at all nearby locations. The computed levels at 45 Flagg Hill Road and at the nearest receptor to the existing turbines on Flagg Hill Road agree well with the peak levels measured in the compliance study for the existing two turbines of 2016.

Table 2.

Predicted Peak Design Speed Noise Levels from Enercon 4.2 MW And Existing GE 2.85 MW Wind Turbines

Site Name	Leq, (dBA)
45 Flagg Hill Road Residence	44.8
47 Flagg Hill Road Residence	43.9
Closest Residence on Beckley Road	45.4
Second Closest Residence on Beckley Road	38.8
Nearest Residence to Turbines on Flagg Hill Road	48.3
Closest Residence on Route 44	38.9

Given the modeled results in this study, it is our professional opinion that acoustic sound levels from all the wind turbines located in Colebrook of 39-48 dBA are in compliance with and well below the maximum allowable noise levels of 61 dBA during the daytime and 51 dBA during nighttime periods at the nearest residential receptors from the wind turbines.

VISUAL ASSESSMENT

Date: February 12, 2020

To: Wind Colebrook South LLC
17 Flagg Hill Road
Colebrook, CT 06021

Re: Responses to Siting Council Interrogatories
Proposed Turbine #3
Flagg Hill Road
Colebrook, Connecticut

From: Michael Libertine

All-Points Technology Corporation, P.C., ("APT") on behalf of Wind Colebrook South LLC, is providing the information contained herein in response to Connecticut Siting Council interrogatories 42 and 43, issued on January 24, 2020.

Specifically, these questions included:

42. Provide a viewshed map based on a 5-five-mile radius from the center of the T3 tower location that includes an estimate of year-round and seasonal visibility. Provide photo simulations of T3. If possible, estimate which portion(s) of T3 would be visible.

Response: APT prepared a viewshed map based on a 5-mile radius from the center of the T3 location that includes an estimate of both year-round and seasonal visibility. To prepare this viewshed map, APT developed a predictive computer model specifically for this project using ESRI's ArcMap Geographic Information System ("GIS")[1] software and available GIS data. The predictive model incorporates project and Study Area-specific data, including the turbine location and ground elevation, its height above existing grade, and the surrounding topography, existing vegetation, and structures (the primary features that can block direct lines of sight). The Study Area includes large portions of the neighboring municipalities of Winchester (to the southeast) and Norfolk (to the west), and to a far less degree portions of Goshen (southwest) and Torrington (to the south).

Methodology

A digital surface model ("DSM"), capturing both the natural and built features on the Earth's surface, was generated for the extent of the Study Area utilizing State of Connecticut 2016 LiDAR[2] LAS[3] data points.

[1] ArcMap is a Geographic Information System desktop application developed by the Environmental Systems Research Institute for creating maps, performing spatial analysis, and managing geographic data.

[2] Light Detection and Ranging.

[3] An LAS file is an industry-standard binary format for storing airborne LiDAR data.

LiDAR is a remote-sensing technology that develops elevation data by measuring the time it takes for laser light to return from the surface to the instrument's sensors. The varying reflectivity of objects also means that the "returns" can be classified based on the characteristics of the reflected light, normally into categories such as "bare earth," "vegetation," "road," or "building". Derived from the 2016 LiDAR data, the LAS datasets contain the corresponding elevation point data and return classification values. The Study Area DSM incorporates the first return LAS dataset values that are associated with the highest feature in the landscape, typically a treetop, top of a building, and/or the highest point of other tall structures.

Once the DSM was generated, ESRI's Viewshed Tool was utilized to identify locations within the Study Area where the proposed T3 Tower may be visible. ESRI's Viewshed Tool predicts visibility by identifying those cells[4] within the DSM that can be seen from an observer location. Cells where visibility was indicated were extracted and converted from a raster dataset to a polygon feature which was then overlaid onto an aerial photograph and topographic base map. Since the DSM includes the highest relative feature in the landscape, isolated "visible" cells are often indicated within heavily forested areas (e.g., from the top of the highest tree) or on building rooftops during the initial processing. It is recognized that these areas do not represent typical viewer locations and overstate visibility. As such, the resulting polygon feature is further refined by extracting those areas. The viewshed results are also cross-checked against the most current aerial photographs to assess whether significant changes (a new housing development, for example) have occurred since the time the LiDAR-based LAS datasets were captured.

The results of this analysis are intended to provide a representation of those areas where portions of the T3 Tower may potentially be visible to the human eye without the aid of magnification, based on a viewer eye-height of five (5) feet above the ground and the combination of intervening topography, trees and other vegetation, and structures. However, the T3 Tower may not necessarily be visible from all locations within those areas identified by the predictive model, which has limitations. For instance, it is important to note that the computer model cannot account for mass density, tree diameters and branching variability of trees, or the degradation of views that occurs with distance. As a result, some areas depicted on the viewshed maps as theoretically offering potential visibility of the T3 Tower may be over-predicted because the quality of those views is not sufficient for the human eye to recognize the T3 Tower or discriminate it from other surrounding or intervening objects. Our experience is that the computer model's sensitivity typically results in the initial mapping to be over-predictive of the Facility's viewshed.

Visibility also varies seasonally with increased, albeit obstructed, views occurring during "leaf-off" conditions. Beyond the variabilities associated with density of woodland stands found within any given Study Area, each individual tree also has its own unique trunk, pole timber and branching patterns that provide varying degrees of screening in leafless conditions which, as introduced above, cannot be precisely modeled. Seasonal visibility is therefore estimated based on a combination of factors including the type, size, and density of trees within a given area; topographic constraints; and other visual obstructions that may be present. Taking into account these considerations, areas depicting seasonal visibility on the viewshed maps are intended to represent locations from where there is a potential for

[4] Each DSM cell size is 1 square meter.

views through intervening trees, as opposed to indicating that leaf-off views will exist from within an entire seasonally-shaded area.

Results

The viewshed mapping results indicate that predicted year-round visibility associated with the proposed Facility could include up to approximately 541 acres (approximately 1% of the 50,265-acre Study Area). This assumes the combined views of both the turbine hub height and the tip of the rotor blade. The majority of the predicted year-round visibility would be along select portions of Route 44, over open water and open fields. Seasonally, when the leaves are off the deciduous trees, views may be achieved from an additional ±798 acres, primarily on the property developed with existing wind turbines and some surrounding land. Collectively, at any time of the year, predicted visibility could occur over less than three percent (3%) of the Study Area.

The results of the viewshed analysis and representative photo-simulations of the proposed T3 Tower are provided in the attachments to this memorandum. As depicted in these views, development of the T3 Tower would result in similar views as the existing turbines.

43. Describe the visibility of T3 from the two closest residences noted on page 4 of the D&M Plan Modification.

Response: Based on the results of the viewshed modeling, APT anticipates the following visibility characteristics from the two closest residences.

319 Beckley Road

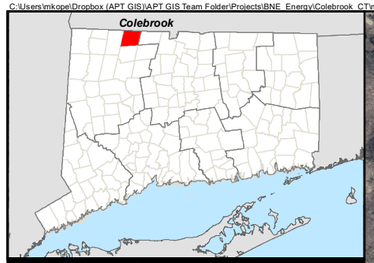
- Will have year-round views of hub and blade from most of the property; seasonal views on other portions of the property
- The house appears to fall on the demarcation line between year-round and seasonal views. As such, some seasonal views from rear windows that face the site are anticipated.

324 Beckley Road

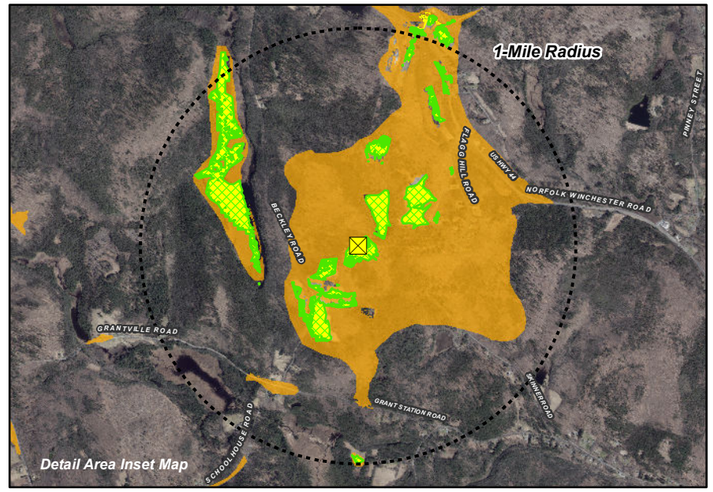
- Year-round and seasonal views of hub and blade from eastern portion of property along the road (within open/cleared areas).
- Portions of the property west of the house are wooded and will likely have some seasonal views.
- The house appears to face toward the T3 Tower site, and will likely experience seasonal views.

ATTACHMENTS

C:\Users\mkope\Dropbox (APT GIS)\APT GIS Team Folder\Projects\BNE_Energy\Colebrook_CT\mxd\Colebrook_5_Mile_Viewshed_Aerial.mxd



Statewide and Regional Overview Map



Detail Area Inset Map

Predictive Viewshed Analysis Map

Proposed T3 Wind Turbine
BNE Energry Inc.
17 Flagg Hill Road
Colebrook, Connecticut

Proposed wind turbine with128 meter tall hub height and138 meter tall blade height.
Forest canopy height is derived from LiDAR data.
Study area encompasses a five-mile radius and includes 50,265 acres.
Base Map Source: 2019 Aerial Photograph (CTECO)
Map Date: February 2020

Legend

- Proposed Wind Turbine Location
- Study Area (5-Mile Radius)
- Predicted Year-Round Visibility - 128 Meter Wind Turbine Hub Height (204 Acres)
- Predicted Year-Round Visibility - 138 Meter Diameter Wind Turbine Blade Height Above Proposed Hub (337 Acres)
- Predicted Seasonal Views - Wind Turbine Hub and Blad (798 acres)
- Municipal Boundary
- Trail
- Scenic Highway

Data Sources:

Physical Geography / Background Data

A digital surface model (DSM) was created from the State of Connecticut 2016 LiDAR LAS data points. The DSM captures the natural and built features on the Earth's surface.

Trails, Roadway Networkm and Town Boundary data obtained from CT DEEP.
Scenic Roads: CTDOT State Scenic Highways (2015); Municipal Scenic Roads (compiled by APT)

Limitations

This map depicts areas where the proposed Facility may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground and intervening topography, tree canopy and structures. This analysis may not account for all visible locations, as it is based on the combination of computer modeling, incorporating the DSM, 2016 digital aerial photographs, and in-field observations from publicly-accessible locations. No access to private properties beyond the Host Property was provided to APT personnel. This analysis does not claim to depict the only areas, or all locations, where visibility may occur; it is intended to provide a representation of those areas where the Facility is likely to be seen.

0 0.5 1 2 Miles

BNE Energy Inc.
Producer of green clean energy

ALL-POINTS TECHNOLOGY CORPORATION

PHOTOGRAPHED ON 1/20/2020

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
1	**U.S. ROUTE 44 ADJACENT TO THE NORTHWESTERN CONNECTICUT SPORTSMEN'S ASSOCIATION PROPERTY**	**SOUTHWEST**	**+/- 1.02 MILES**

ALL-POINTS TECHNOLOGY CORPORATION

BNE Energy Inc.
Producer of green clean energy

PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
1	**U.S. ROUTE 44 ADJACENT TO THE NORTHWESTERN CONNECTICUT SPORTSMEN'S ASSOCIATION PROPERTY**	**SOUTHWEST**	**+/- 1.02 MILES**

ALL-POINTS TECHNOLOGY CORPORATION

BNE Energy Inc.
Producer of green clean energy

PHOTOGRAPHED ON 1/20/2020

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
2	**ADJACENT TO #42 STILLMAN HILL ROAD (24MM FOCAL LENGTH)**	**SOUTHWEST**	**+/- 2.53 MILES**

ALL-POINTS TECHNOLOGY CORPORATION

BNE Energy Inc.
Producer of green clean energy

PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
2	**ADJACENT TO #42 STILLMAN HILL ROAD (24MM FOCAL LENGTH)**	**SOUTHWEST**	**+/- 2.53 MILES**

ALL-POINTS TECHNOLOGY CORPORATION

BNE Energy Inc.
Producer of green clean energy

PHOTOGRAPHED ON 1/30/2020

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
3	**LOOKOUT TOWER AT HAYSTACK MOUNTAIN**	**SOUTHEAST**	**+/- 4.27 MILES**

ALL-POINTS TECHNOLOGY CORPORATION

BNE Energy Inc.
Producer of green clean energy

PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
3	**LOOKOUT TOWER AT HAYSTACK MOUNTAIN**	**SOUTHEAST**	**+/- 4.27 MILES**

ALL-POINTS TECHNOLOGY CORPORATION

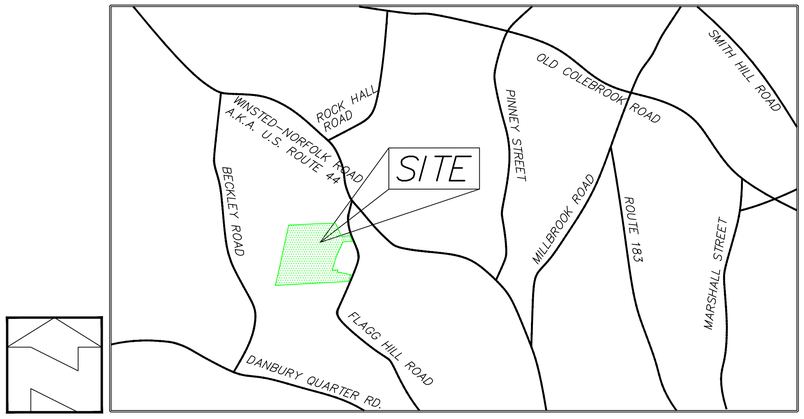
BNE Energy Inc.
Producer of green clean energy

WIND COLEBROOK SOUTH

CONNECTICUT SITING COUNCIL

D&M PLANS

FLAGG HILL ROAD
COLEBROOK, CONNECTICUT



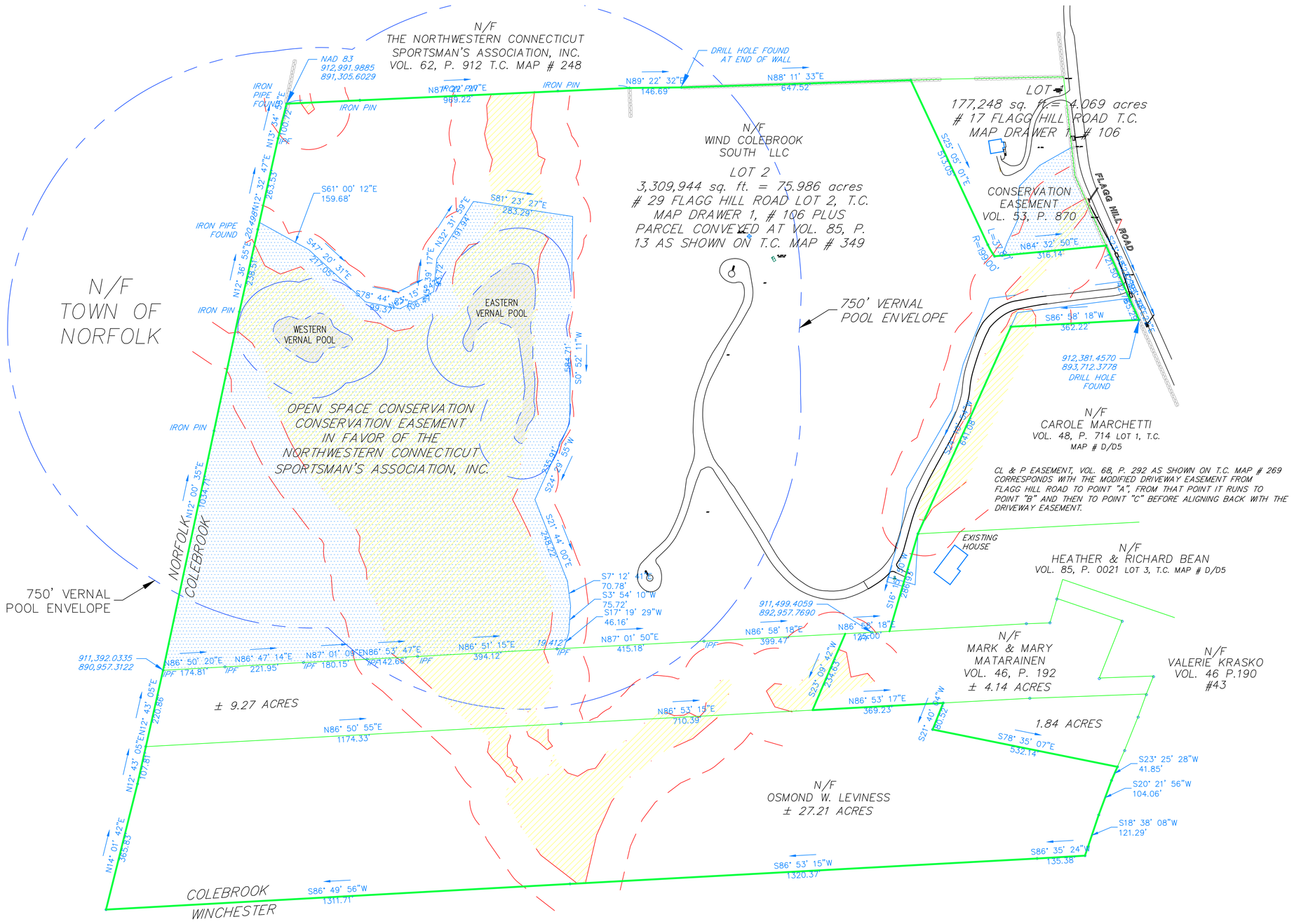
VICINITY MAP

CIVIL 1

CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

NOVEMBER 15, 2019
REVISED FEBRUARY 7, 2020

SHEET NUMBER	DESCRIPTION
C001	PROPERTY SURVEY
C002	SITE PLAN WITH AERIAL IMAGERY
C003	CLEARING LIMITS PLAN
C100	OVERALL SITE PLAN
C101	SITE PLAN 0+00 TO 9+00
C102	SITE PLAN 9+00 TO 19+00
C103	SITE PLAN 19+00 TO 26+50
C200	OVERALL GRADING PLAN
C201	GRADING PLAN AND UTILITY PLAN 0+00 TO 9+00
C202	GRADING PLAN AND UTILITY PLAN 9+00 TO 19+00
C203	GRADING PLAN AND UTILITY PLAN 19+00 TO 26+50
C300	OVERALL EROSION CONTROL PLAN
C301	EROSION CONTROL PLAN 0+00 TO 9+00
C302	EROSION CONTROL PLAN 9+00 TO 19+00
C303	EROSION CONTROL PLAN 19+00 TO 26+50
C401	MAIN ACCESS DRIVE PLAN AND PROFILE 0+00 TO 12+00
C402	MAIN ACCESS DRIVE PLAN AND PROFILE 12+00 TO 18+00
C403	MAIN ACCESS DRIVE PLAN AND PROFILE 18+00 TO 26+50
C500	OVERALL POST CONSTRUCTION GRADING PLAN
C501	POST CONSTRUCTION GRADING PLAN 0+00 TO 9+00
C502	POST CONSTRUCTION GRADING PLAN 9+00 TO 19+00
C503	POST CONSTRUCTION GRADING PLAN 19+00 TO 26+50
C600	EROSION CONTROL NARRATIVE AND CONSTRUCTION SEQUENCE
C601	DETAILS
C602	DETAILS
C603	DETAILS
C604	DETAILS
C605	DETAILS
E100	OVERALL ELECTRICAL SITE PLAN
E101	ELECTRICAL DETAILS
E102	ELECTRICAL DETAILS



NO.	REVISION	DATE
1	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 60 150

1 inch = 150 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

PROPERTY SURVEY

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT
CURTIS C. JONES
No. 17008
LICENSED
PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	1" = 150'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C001

NO.	REVISION	DATE
1	ACCESS DRIVE REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20
	Previous Editions Obsolete	

0 60 150

1 inch = 150 *ft.*

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

SITE PLAN WITH
AERIAL IMAGERY

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

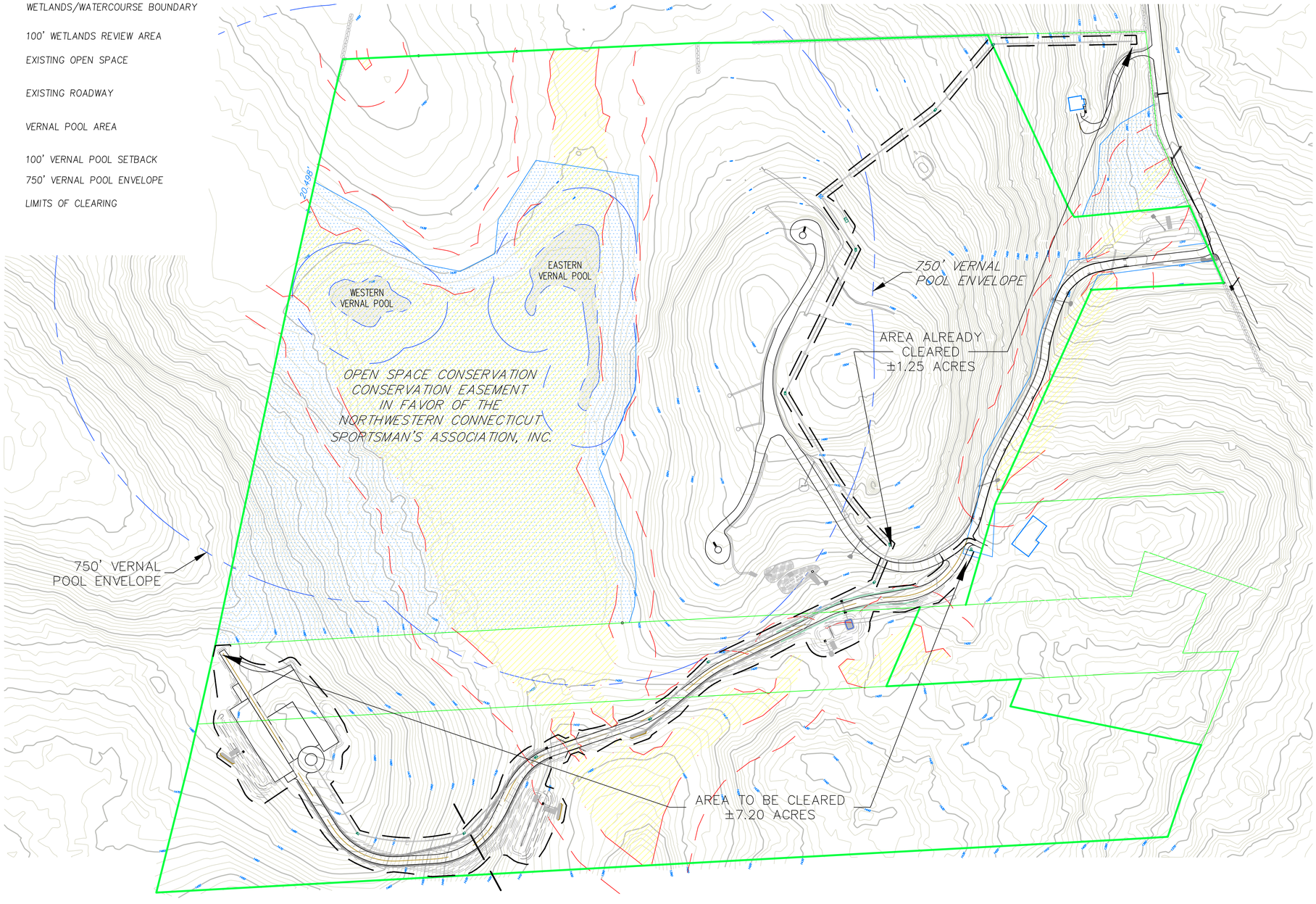
CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JONES · No. 21808 · LICENSED PROFESSIONAL ENGINEER

DRAWN:	SC
APPROVED:	CJ
SCALE:	1" = 150'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C002

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING OPEN SPACE
- EXISTING ROADWAY
- VERNAL POOL AREA
- 100' VERNAL POOL SETBACK
- 750' VERNAL POOL ENVELOPE
- LIMITS OF CLEARING



NO.	REVISION	DATE
1	ACCESS DRIVE REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 60 150

1 inch = 150 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

CLEARING LIMITS PLAN

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

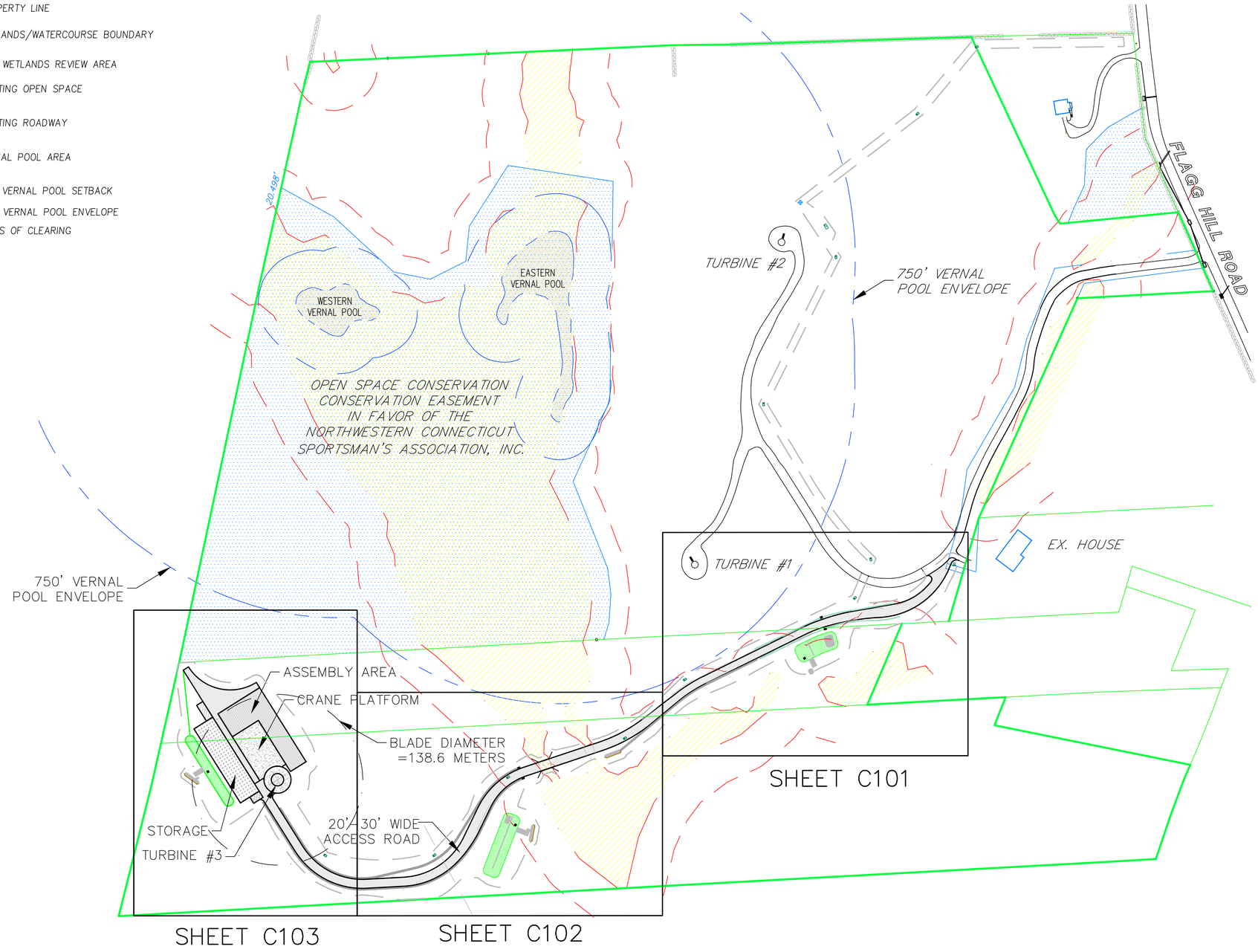
CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
(203) 266 - 0778
WOODBURY CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JONES · No. 22006 · LICENSED PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	1" = 150'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C003

LEGEND

- PROPERTY LINE
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING OPEN SPACE
- EXISTING ROADWAY
- VERNAL POOL AREA
- 100' VERNAL POOL SETBACK
- 750' VERNAL POOL ENVELOPE
- LIMITS OF CLEARING



NO.	REVISION	DATE
1	ACCESS DRIVE REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 60 150

1 inch = 150 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

OVERALL SITE PLAN

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL 1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JONES · No. 17208 · LICENSED PROFESSIONAL ENGINEER

DRAWN:	SC
APPROVED:	CJ
SCALE:	1" = 150'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C100

EXISTING TURBINE 1

EXISTING WATER QUALITY BASIN

PROPOSED CONNECTION TO EXISTING PAVED DRIVEWAY

EXISTING CURBS TO BE REMOVED

EXISTING PAVED DRIVEWAY

PROPOSED CONNECTION TO EXISTING PAVED DRIVEWAY

EXISTING GRAVEL DRIVEWAY

PROPOSED START OF TAPER 24' TO 30' WIDE ROAD STA 1+30 TO STA 2+50

PROPOSED 30' WIDE GRAVEL ACCESS ROAD STA 2+50

PROPOSED END OF TAPER 30' TO 24' WIDE ROAD STA 2+63 TO STA 3+35

PROPOSED START OF TAPER 24' TO 20' WIDE ROAD STA 3+35 TO STA 4+75

750' VERNAL POOL ENVELOPE

PROPOSED STORMWATER RENOVATION AREA – A

PROPOSED 20' WIDE GRAVEL ACCESS ROAD STA 4+75 TO STA 7+72

LIMIT OF CLEARING

PROPOSED 9" DEEP RIPRAP CONVEYANCE SWALE WITH 2'x2' STONE INFILTRATION TRENCH

PROPOSED START OF TAPER 20' TO 24' WIDE ROAD STA 7+72 TO STA 9+70

PROPOSED 9" DEEP GRASS-LINED WATER QUALITY SWALE

APPROXIMATE WETLAND LOCATION

APPROXIMATE WETLAND LOCATION

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00

24' 30' 20'

XFMR

WF 3-01 WF 3-02 WF 3-03 WF 3-04 WF 3-05 WF 3-06 WF 3-07 WF 3-08 WF 3-09 WF 3-10 WF 3-11 WF 3-12 WF 3-13 WF 3-14 WF 4-01 WF 4-02

6-40 6-50 6-51 6-52 6-53 6-54 6-55 6-56 6-57 6-58 6-59 6-60 6-61 6-62 6-63 6-64 6-65 6-66 6-67

LEGEND

- PROPERTY LINE
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING ROADWAY
- VERNAL POOL AREA
- 100' VERNAL POOL SETBACK
- 750' VERNAL POOL ENVELOPE
- WF 3-06 WETLAND FLAGS
- LIMITS OF CLEARING

NO.	REVISION	DATE
1	ACCESS DRIVE REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 15 30

1 inch = 30 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

SITE PLAN
0+00 TO 9+00

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT CURTIS C. JONES LICENSED PROFESSIONAL ENGINEER No. 17806

DRAWN:	SC
APPROVED:	CJ
SCALE:	1" = 30'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C101

LEGEND

- PROPERTY LINE
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING ROADWAY
- VERNAL POOL AREA
- 100' VERNAL POOL SETBACK
- 750' VERNAL POOL ENVELOPE
- WETLAND FLAGS (1 ▲ WF 3-06)
- LIMITS OF CLEARING

750' VERNAL POOL ENVELOPE

PROPOSED END OF TAPER
20' TO 24' WIDE ROAD
STA 7+72 TO STA 9+70

PROPOSED 24' WIDE SEEPAGE ENVELOPE
SEE DETAIL ON SHEET C602

PROPOSED 26' WIDE 30' LONG
PRECAST CONCRETE BRIDGE OVER WETLAND
CONTECH CON/SPAN O-SERIES BRIDGE
0951 OR APPROVED EQUAL

PROPOSED START OF TAPER
24' TO 30' WIDE ROAD
STA 13+40 TO STA 14+73

PROPOSED 9" DEEP
RIPRAP SWALE

PROPOSED 30' WIDE
GRAVEL ACCESS ROAD
STA 14+73 TO STA 15+40

PROPOSED 9" DEEP
RIPRAP CONVEYANCE SWALE WITH
2'x2' STONE INFILTRATION TRENCH

PROPOSED END OF TAPER
30' TO 24' WIDE ROAD
STA 15+40 TO STA 16+24

LIMIT OF CLEARING

PROPOSED
24' WIDE GRAVEL
ACCESS ROAD

PROPOSED
STORMWATER
RENOVATION
AREA - B

NO.	REVISION	DATE
1	ELECTRICAL ROUTING REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 15 30

1 inch = 30 *ft.*

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

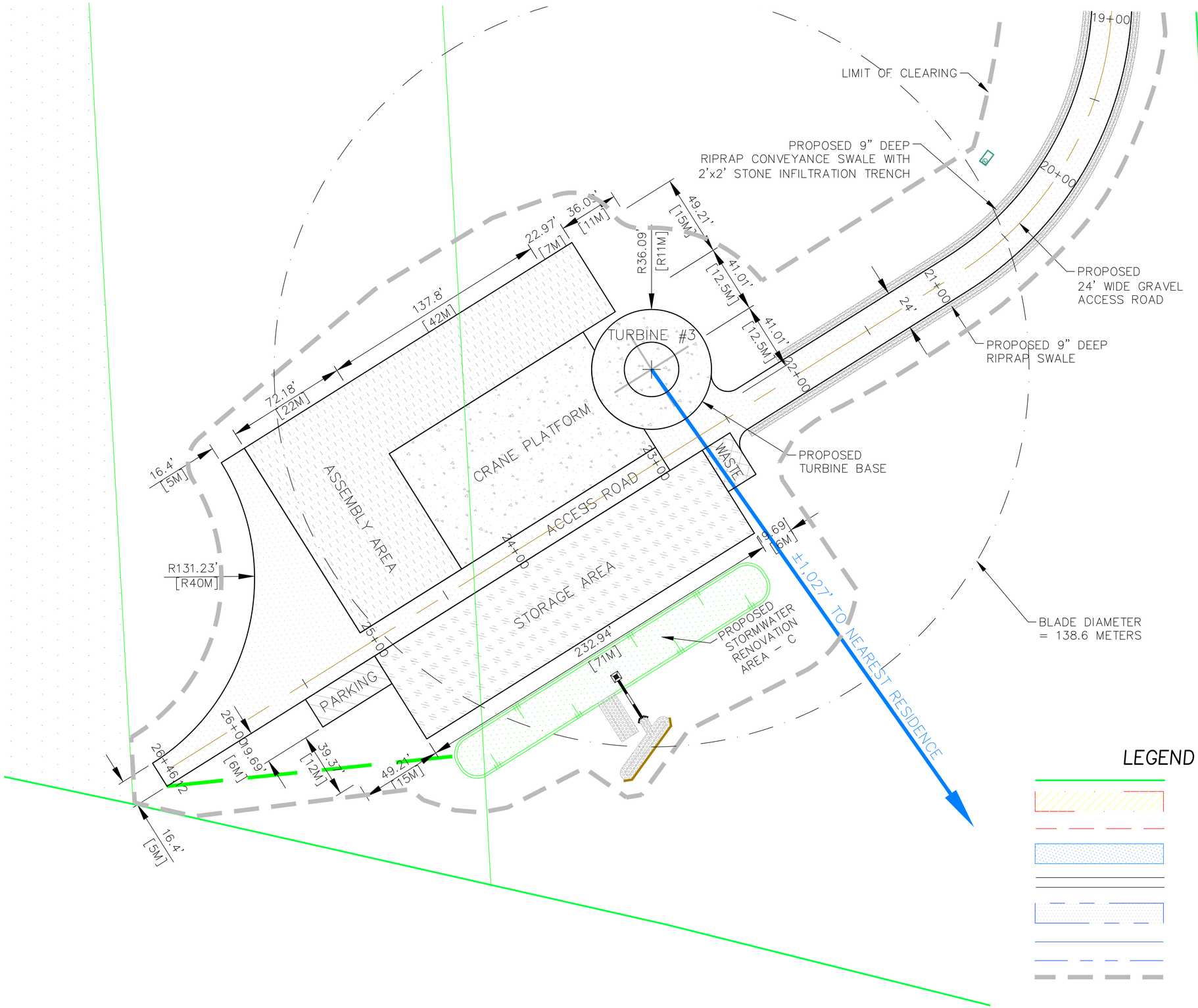
SITE PLAN
9+00 TO 19+00

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JOHNSON · No. 17208 · LICENSED PROFESSIONAL ENGINEER

DRAWN:	SC
APPROVED:	CJ
SCALE:	1" = 30'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C102



LEGEND

- PROPERTY LINE
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING OPEN SPACE
- EXISTING ROADWAY
- VERNAL POOL AREA
- 100' VERNAL POOL SETBACK
- 750' VERNAL POOL ENVELOPE
- LIMITS OF CLEARING

NO.	REVISION	DATE
1	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 15 30

1 inch = 30 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

SITE PLAN
19+00 TO 26+50

WIND COLEBROOK SOUTH
FLAGG HILL ROAD

COLEBROOK CONNECTICUT

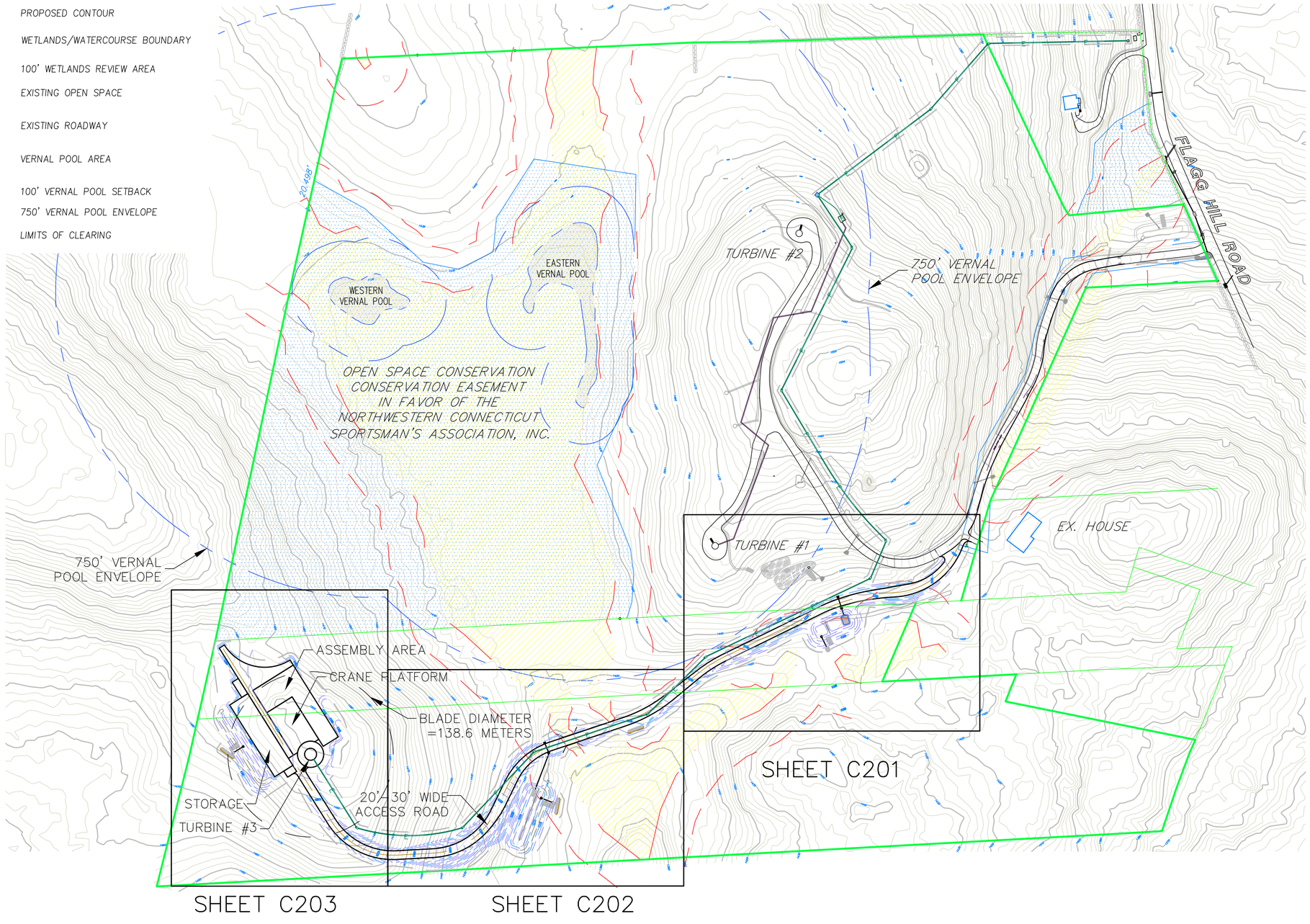
CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JOHNSON · No. 17208 · LICENSED PROFESSIONAL ENGINEER

DRAWN:	SC
APPROVED:	CJ
SCALE:	1" = 30'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C103

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING OPEN SPACE
- EXISTING ROADWAY
- VERNAL POOL AREA
- 100' VERNAL POOL SETBACK
- 750' VERNAL POOL ENVELOPE
- LIMITS OF CLEARING



NO.	REVISION	DATE
1	ACCESS DRIVE REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20
	Previous Editions Obsolete	

0 60 150

1 inch = 150 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

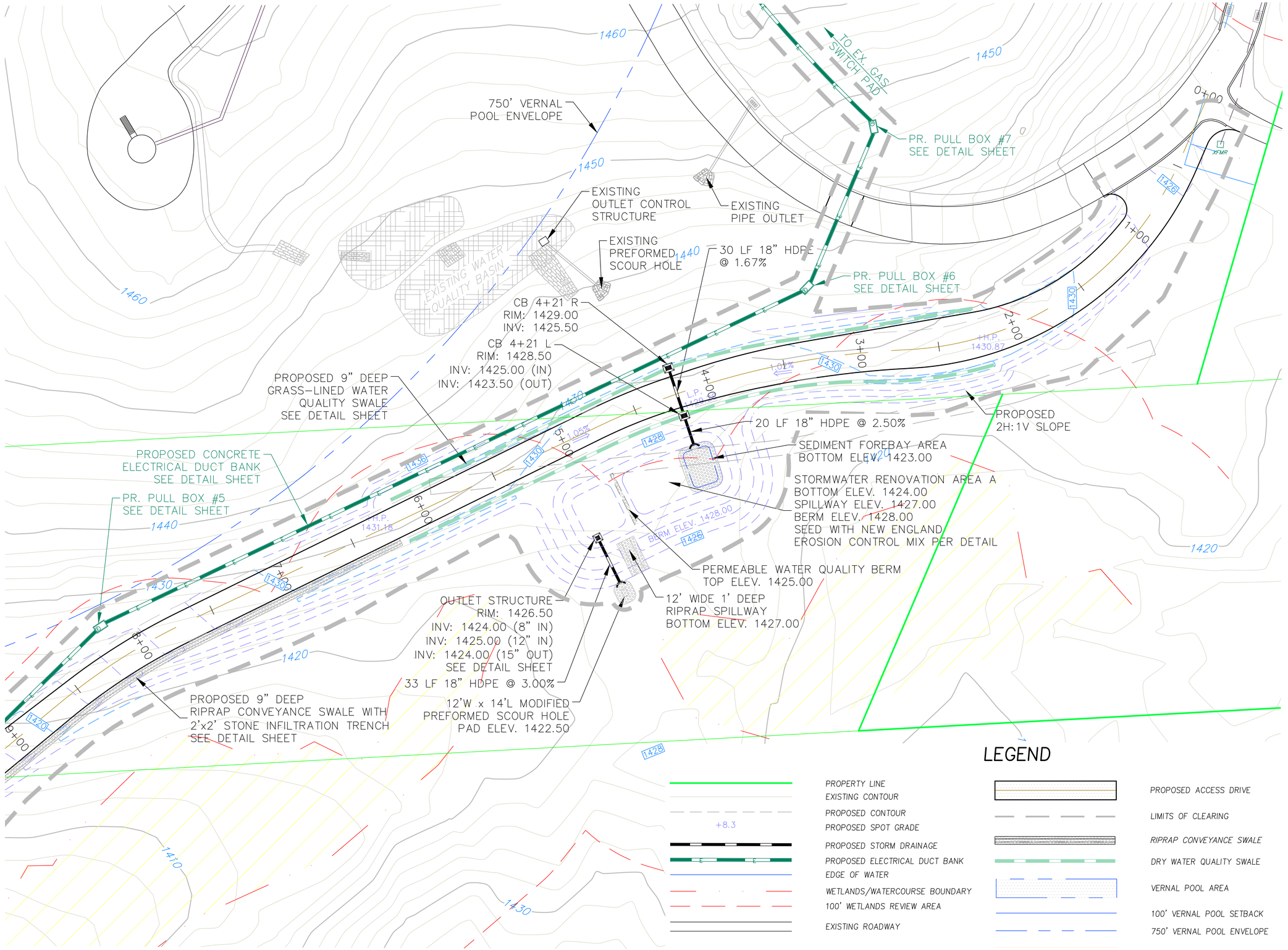
OVERALL GRADING PLAN

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL 1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JOHNSON · No. 17208 · LICENSED PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	1" = 150'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C200



LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- +8.3 PROPOSED SPOT GRADE
- PROPOSED STORM DRAINAGE
- PROPOSED ELECTRICAL DUCT BANK
- EDGE OF WATER
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING ROADWAY
- PROPOSED ACCESS DRIVE
- LIMITS OF CLEARING
- RIPRAP CONVEYANCE SWALE
- DRY WATER QUALITY SWALE
- VERNAL POOL AREA
- 100' VERNAL POOL SETBACK
- 750' VERNAL POOL ENVELOPE

NO.	REVISION	DATE
1	ACCESS DRIVE REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 15 30

1 inch = 30 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

GRADING PLAN & UTILITY PLAN
0+00 TO 9+00

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL 1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266-0778 CONNECTICUT

STATE OF CONNECTICUT CURTIS C. JONES No. 17208 LICENSED PROFESSIONAL ENGINEER

DRAWN:	SC
APPROVED:	CJ
SCALE:	1" = 30'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C201

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- +8.3 PROPOSED SPOT GRADE
- PROPOSED STORM DRAINAGE
- PROPOSED ELECTRICAL DUCT BANK
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING ROADWAY
- PROPOSED ACCESS DRIVE
- LIMITS OF CLEARING
- RIPRAP CONVEYANCE SWALE
- DRY WATER QUALITY SWALE
- VERNAL POOL AREA
- 100' VERNAL POOL SETBACK
- 750' VERNAL POOL ENVELOPE

750' VERNAL POOL ENVELOPE

PROPOSED 9" DEEP RIPRAP CONVEYANCE SWALE WITH 2'x2' STONE INFILTRATION TRENCH SEE DETAIL SHEET

PROPOSED SEEPAGE ENVELOPE SEE DETAIL SHEET

PR. PULL BOX #4 SEE DETAIL SHEET

PROPOSED BRIDGE OVER WETLAND SEE DETAIL SHEET

CB 13+27 R
RIM: 1413.00
INV: 1409.75

25 LF 15" HDPE @ 2.00%

CB 13+27 L
RIM: 1412.50
INV: 1409.25

PR. PULL BOX #3 SEE DETAIL SHEET

108 LF 15" HDPE @ 1.15%

PROPOSED 2H:1V SLOPE

40' LEVEL SPREADER
BOTTOM ELEV. 1408.00
TOP ELEV. 1408.67
SEE DETAIL SHEET

OUTLET STRUCTURE
RIM: 1410.00
INV: 1408.00 (4" IN)
INV: 1409.00 (8" IN)
INV: 1408.00 (15" OUT)
SEE DETAIL SHEET

30 LF 15" HDPE @ 3.33%

OUTLET INV: 1407.00

40' LEVEL SPREADER
BOTTOM ELEV. 1403.00
TOP ELEV. 1403.67
SEE DETAIL SHEET

12' WIDE 1' DEEP RIPRAP SPILLWAY
BOTTOM ELEV. 1410.50

PERMEABLE WATER QUALITY BERM
TOP ELEV. 1409.00

3H:1V SLOPE BELOW BERM

STORMWATER RENOVATION AREA B
BOTTOM ELEV. 1408.00
SPILLWAY ELEV. 1410.50
BERM ELEV. 1411.50
SEED WITH NEW ENGLAND EROSION CONTROL MIX PER DETAIL

PROPOSED 9" DEEP RIPRAP CONVEYANCE SWALE WITH 2'x2' STONE INFILTRATION TRENCH SEE DETAIL SHEET

PROPOSED CONCRETE ELECTRICAL DUCT BANK SEE DETAIL SHEET

PR. PULL BOX #2 SEE DETAIL SHEET

PROPOSED 9" DEEP RIPRAP SWALE SEE DETAIL SHEET

PROPOSED 2H:1V SLOPE

NO.	REVISION	DATE
1	ELECTRICAL ROUTING REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 15 30

1 inch = 30 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

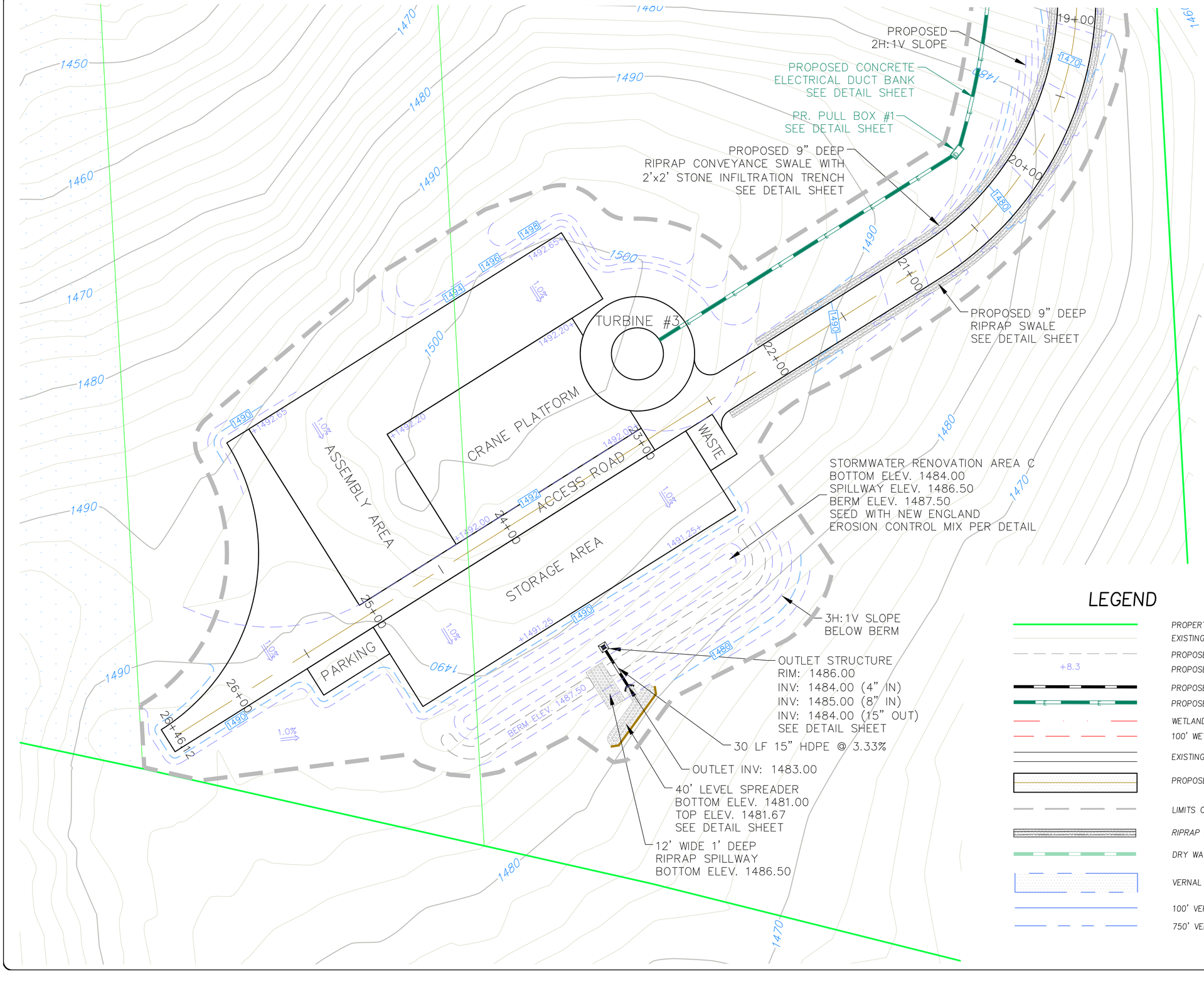
GRADING PLAN & UTILITY PLAN
9+00 TO 19+00

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JONES · No. 23006 · LICENSED PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	1" = 30'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C202



LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- +8.3 PROPOSED SPOT GRADE
- PROPOSED STORM DRAINAGE
- PROPOSED ELECTRICAL DUCT BANK
- WETLANDS/WATERCOURSE BOUNDAR
- 100' WETLANDS REVIEW AREA
- EXISTING ROADWAY
- PROPOSED ACCESS DRIVE
- LIMITS OF CLEARING
- RIPRAP CONVEYANCE SWALE
- DRY WATER QUALITY SWALE
- VERNAL POOL AREA
- 100' VERNAL POOL SETBACK
- 750' VERNAL POOL ENVELOPE

NO.	REVISION	DATE
1	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 15 30

1 inch = 30 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

GRADING PLAN & UTILITY PLAN
19+00 TO 26+50

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

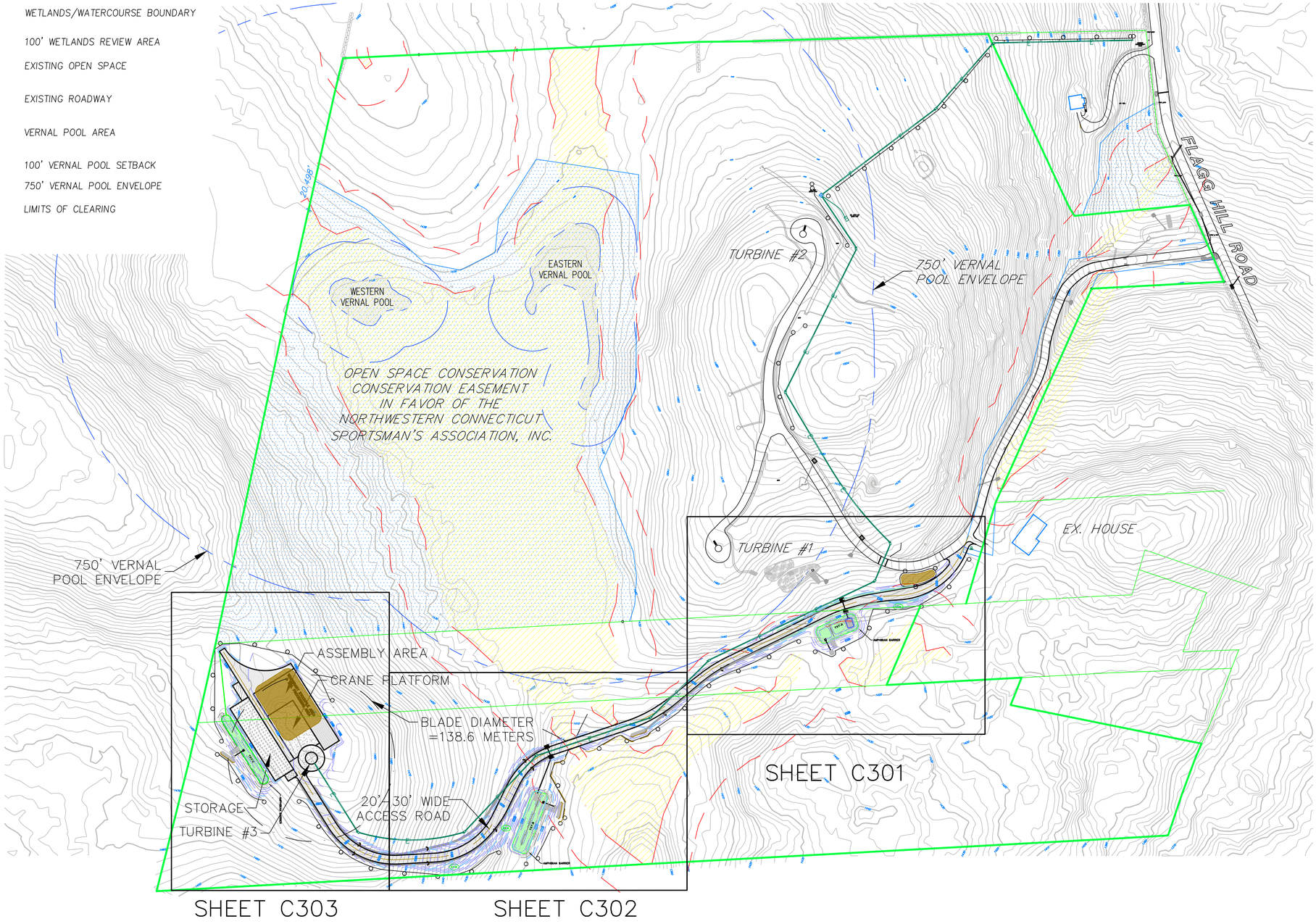
CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT
CURTIS C. JONES
No. 21808
LICENSED
PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	1" = 30'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C203

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING OPEN SPACE
- EXISTING ROADWAY
- VERNAL POOL AREA
- 100' VERNAL POOL SETBACK
- 750' VERNAL POOL ENVELOPE
- LIMITS OF CLEARING



NO.	REVISION	DATE
1	ACCESS DRIVE REVISED	17 DEC 19
	Previous Editions Obsolete	

0 60 150

1 inch = 150 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

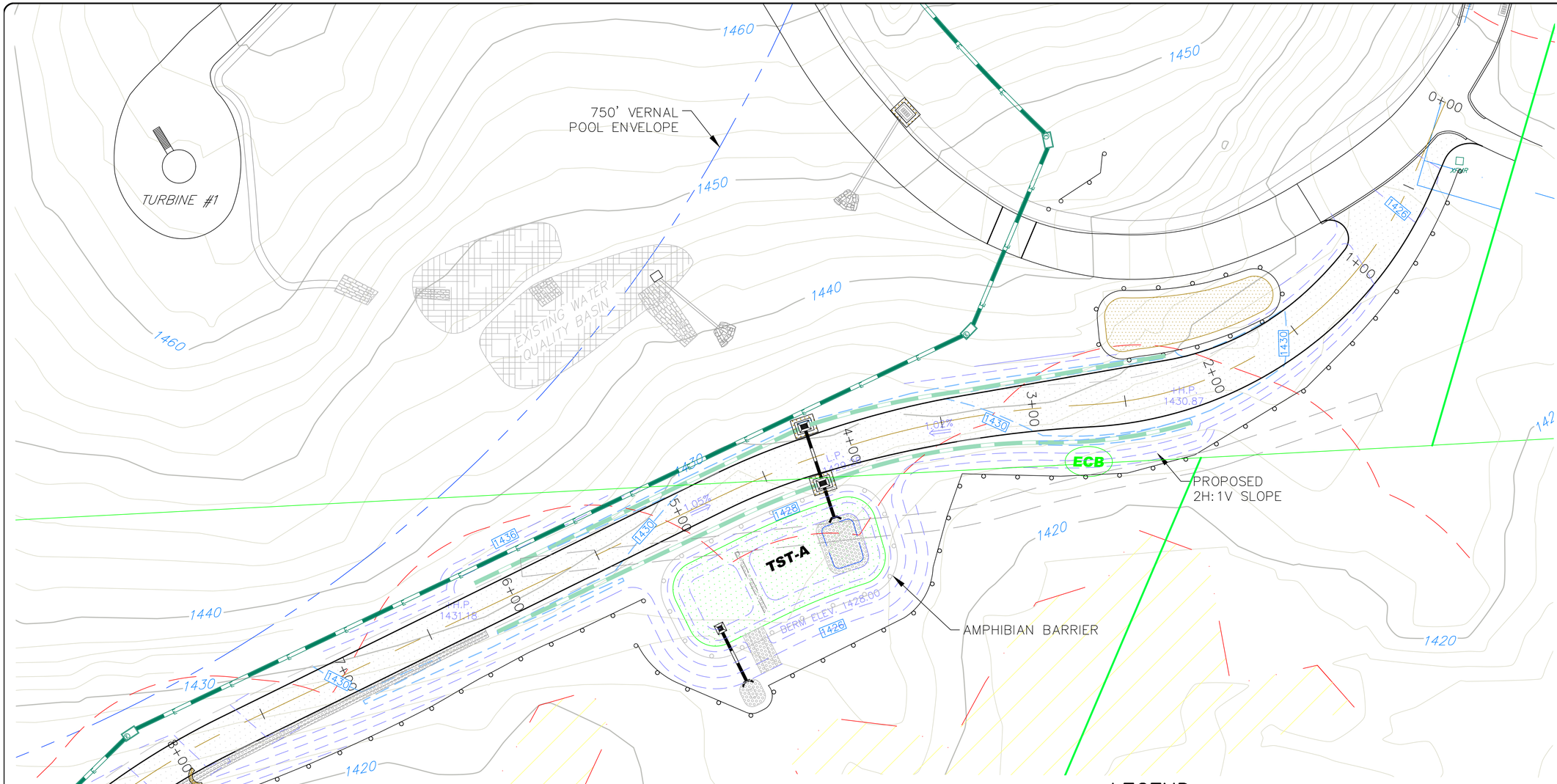
OVERALL
EROSION CONTROL PLAN

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL 1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
(203) 266 - 0778
WOODBURY CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JOINES · No. 17206 · LICENSED PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	1" = 150'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C300



LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM DRAINAGE
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING ROADWAY
- PROPOSED ACCESS DRIVE
- LIMITS OF CLEARING
- TEMP. WATER DIVERSION SWALE
- RIPRAP CONVEYANCE SWALE
- DRY WATER QUALITY SWALE
- STAKED HAY BALES
- SILT FENCE
- BALED FILTER
- TST — TEMPORARY SOIL STOCKPILE
- TS — TEMPORARY SEDIMENT TRAP
- TEMPORARY SEEDING
- ECB — EROSION CONTROL BLANKET
- STONE CHECK DAM

NO.	REVISION	DATE
1	ACCESS DRIVE REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 15 30

1 inch = 30 *ft.*

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

EROSION CONTROL PLAN
0+00 TO 9+00

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JONES · No. 19705 · LICENSED PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	1" = 30'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C301

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM DRAINAGE
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING ROADWAY
- PROPOSED ACCESS DRIVE
- LIMITS OF CLEARING
- TEMP. WATER DIVERSION SWALE
- RIPRAP CONVEYANCE SWALE
- DRY WATER QUALITY SWALE
- STAKED HAY BALES
- SILT FENCE
- BALED FILTER
- TEMPORARY SOIL STOCKPILE
- **TST** TEMPORARY SEDIMENT TRAP
- **TS** TEMPORARY SEEDING
- **ECB** EROSION CONTROL BLANKET
- STONE CHECK DAM

750' VERNAL POOL ENVELOPE

PROPOSED BRIDGE OVER WETLAND SEE DETAIL SHEET

PROPOSED SEEPAGE ENVELOPE SEE DETAIL SHEET

PROPOSED 2H:1V SLOPE

PROPOSED 2H:1V SLOPE

3H:1V SLOPE BELOW BERM

AMPHIBIAN BARRIER

TST-B

BERM EL=EV 1411.50

ECB

9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00

1390 1400 1410 1420 1430 1440 1450 1460

NO.	REVISION	DATE
1	ELECTRICAL ROUTING REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 15 30

1 inch = 30 *ft.*

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

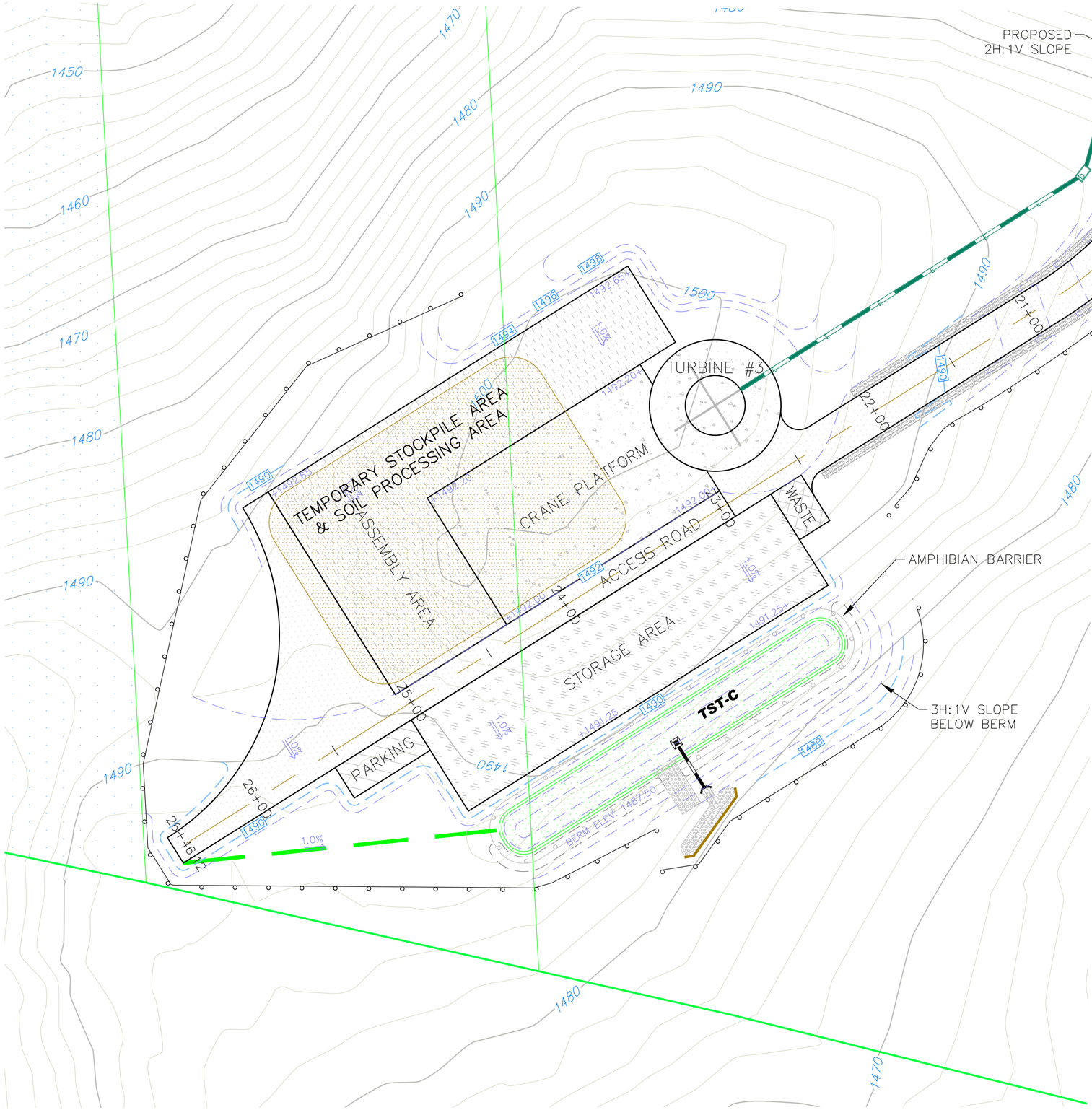
EROSION CONTROL PLAN
9+00 TO 19+00

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL 1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
(203) 266 - 0778
WOODBURY CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JOHNSON · No. 12008 · LICENSED PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	1" = 30'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C302



LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM DRAINAGE
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING ROADWAY
- PROPOSED ACCESS DRIVE
- LIMITS OF CLEARING
- TEMP. WATER DIVERSION SWALE
- RIPRAP CONVEYANCE SWALE
- DRY WATER QUALITY SWALE
- STAKED HAY BALES
- SILT FENCE
- BALED FILTER
- TEMPORARY SOIL STOCKPILE
- TST — TEMPORARY SEDIMENT TRAP
- TS — TEMPORARY SEEDING
- ECB — EROSION CONTROL BLANKET
- STONE CHECK DAM

NO.	REVISION	DATE
1	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 15 30

1 inch = 30 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

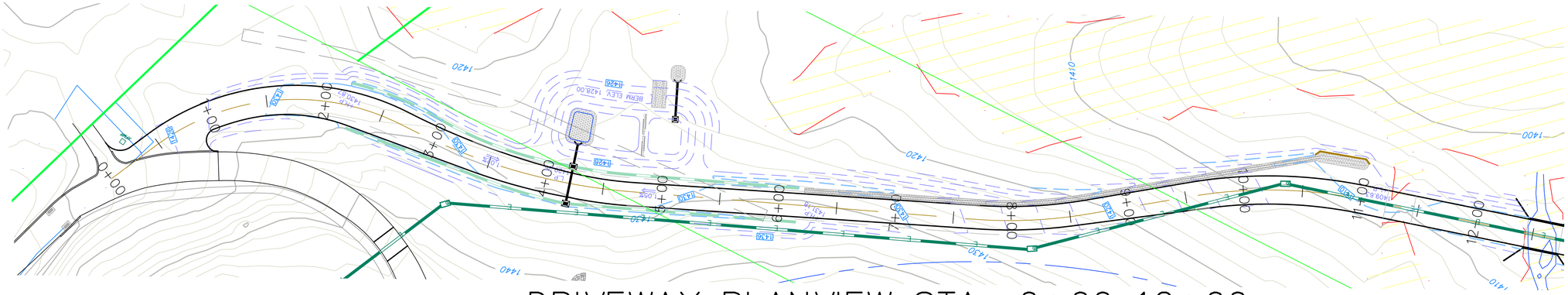
EROSION CONTROL PLAN
19+00 TO 26+50

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

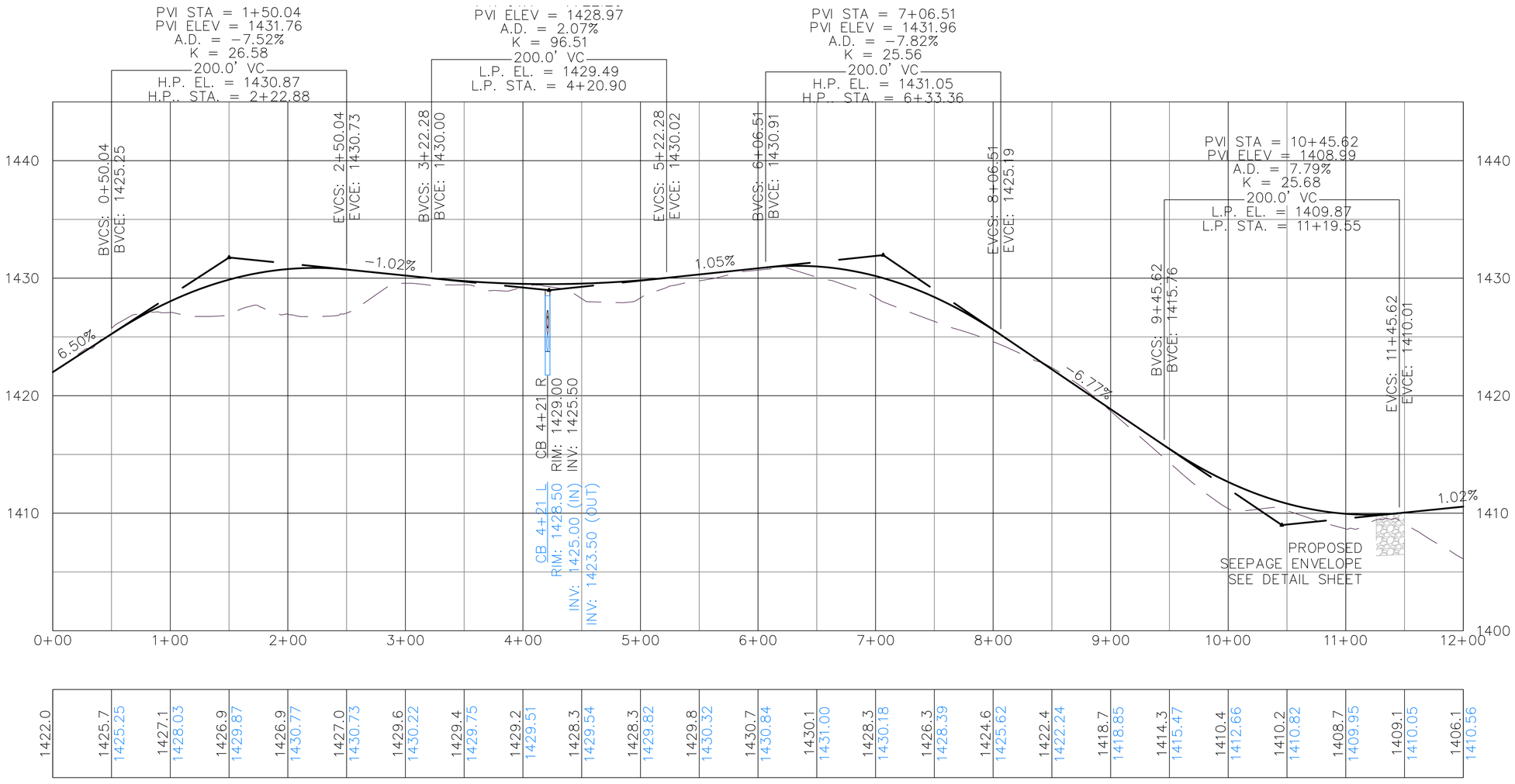
STATE OF CONNECTICUT · CURTIS C. JONES · No. 18826 · LICENSED PROFESSIONAL ENGINEER

DRAWN:	SC
APPROVED:	CJ
SCALE:	1" = 30'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C303



DRIVEWAY PLANVIEW STA: 0+00 12+00

SCALE: 1"=50'



1422.0	1425.7	1425.25	1427.1	1428.03	1426.9	1429.87	1426.9	1430.77	1427.0	1430.73	1429.6	1430.22	1429.4	1429.75	1429.2	1429.51	1428.3	1429.54	1428.3	1429.82	1429.8	1430.32	1430.7	1430.84	1430.1	1431.00	1428.3	1430.18	1426.3	1428.39	1424.6	1425.62	1422.4	1422.24	1418.7	1418.85	1414.3	1415.47	1410.4	1412.66	1410.2	1410.82	1408.7	1409.95	1409.1	1410.05	1406.1	1410.56

DRIVEWAY CENTERLINE PROFILE

SCALE: 1"=50' HOR. 1"=5' VER.

NO.	REVISION	DATE
1	ACCESS DRIVE REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20
	Previous Editions Obsolete	

0 20 50

1 inch = 50 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

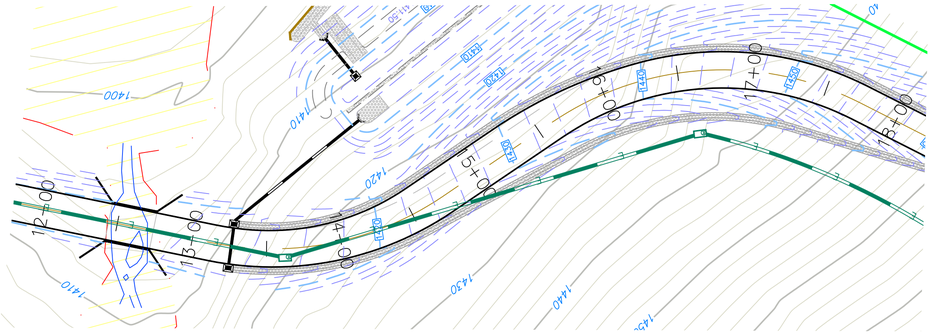
ACCESS ROAD
PLAN & PROFILE
0+00 TO 12+00

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

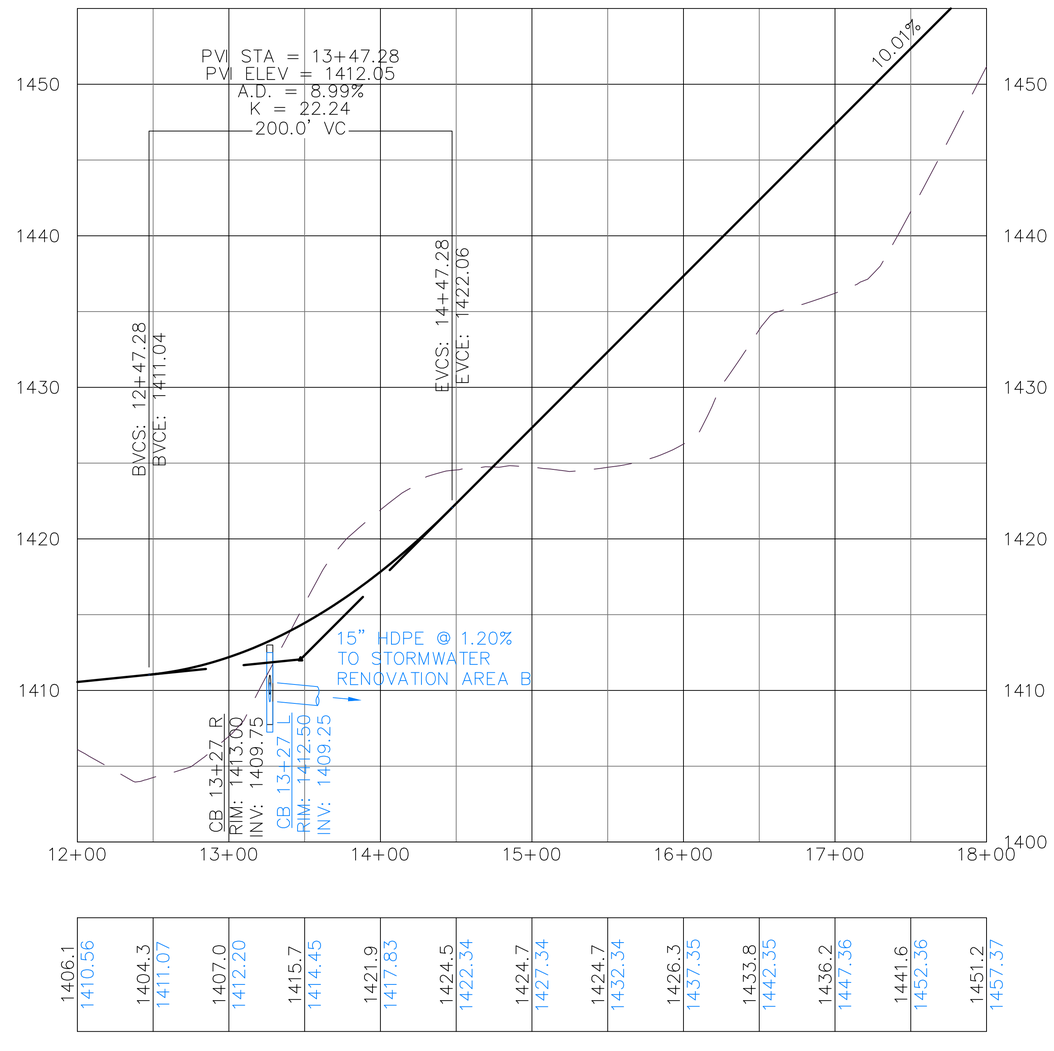
STATE OF CONNECTICUT · CURTIS C. JOYNER · No. 17208 · LICENSED PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	1" = 50' HOR. 1" = 5' VER.
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	**C401**



DRIVEWAY PLANVIEW STA: 12+00–18+00

SCALE: 1"=50' HOR.



DRIVEWAY CENTERLINE PROFILE

SCALE: 1"=50' HOR. 1"=5' VER.

NO.	REVISION	DATE
1	ELECTRICAL ROUTING REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 20 50

1 inch = 50 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

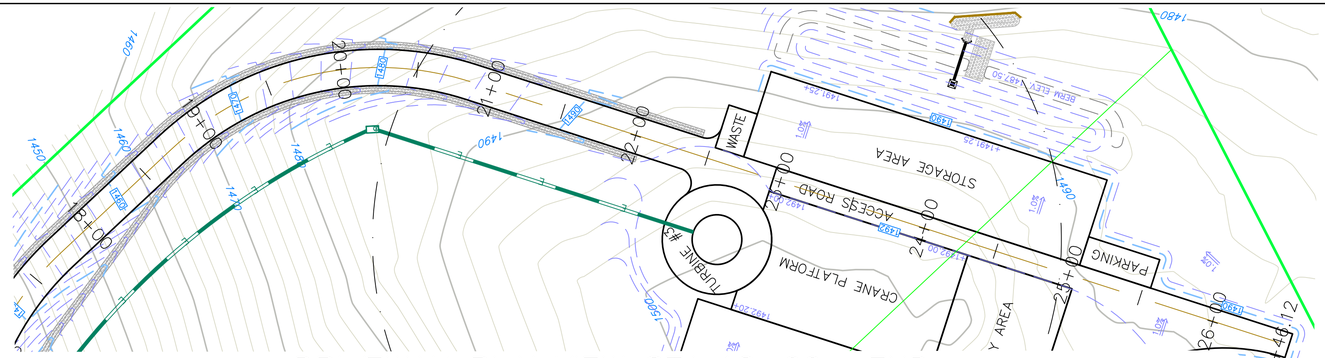
ACCESS ROAD
PLAN & PROFILE
12+00 TO 18+00

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JONES · No. 23206 · LICENSED PROFESSIONAL ENGINEER

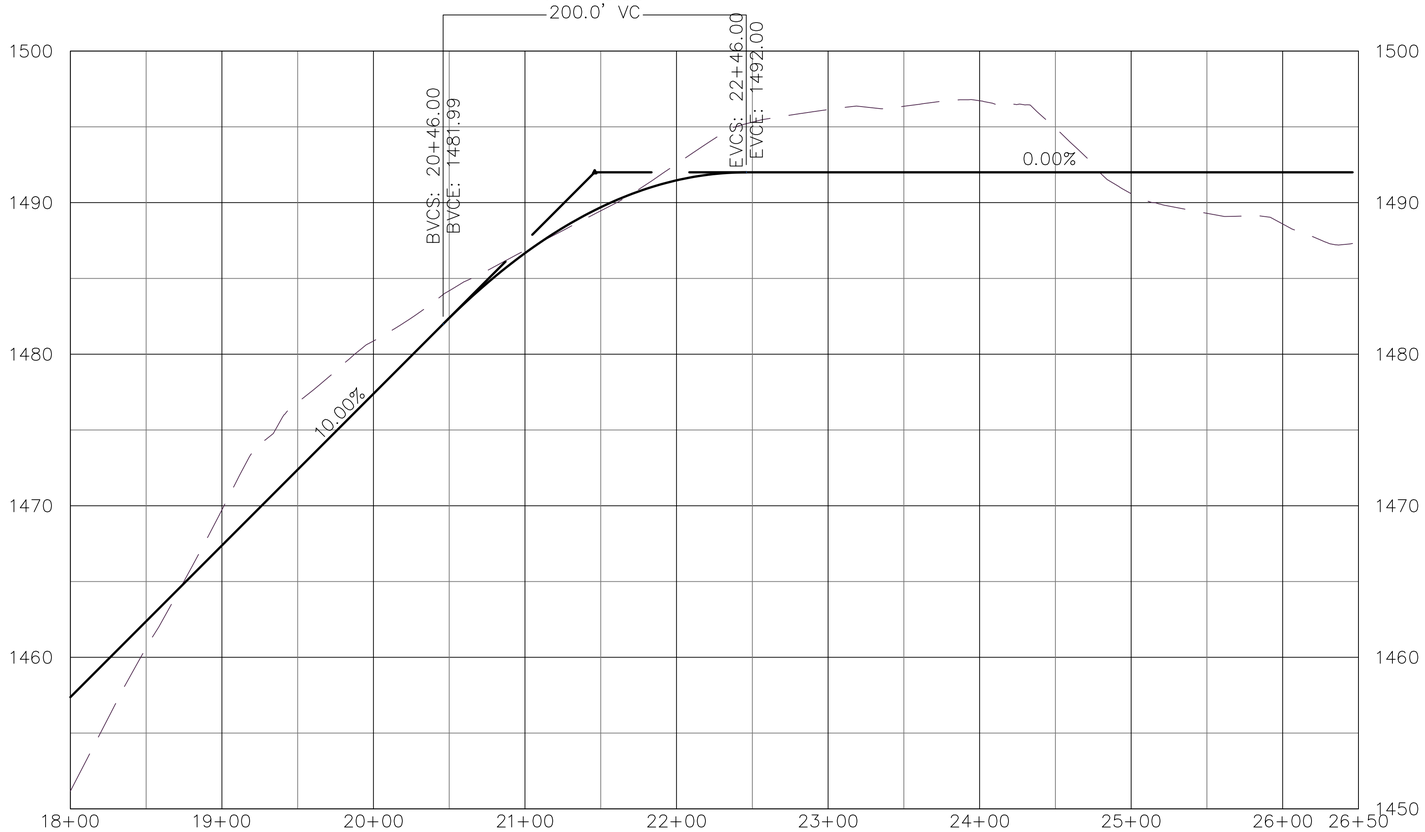
DRAWN: SC	APPROVED: CJ
SCALE:	1" = 50' HOR. 1" = 5' VER.
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	**C402**



DRIVEWAY PLANVIEW STA:18+00 –END

SCALE: 1"=50' HOR.

PVI STA = 21+46.00
PVI ELEV = 1492.00
A.D. = –10.01%
K = 19.98
200.0' VC



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DRIVEWAY CENTERLINE PROFILE

SCALE: 1"=50' HOR. 1"–5' VERT.

NO.	REVISION	DATE
1	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 20 50

1 inch = 50 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

ACCESS ROAD
PLAN & PROFILE
18+00 TO 26+50

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
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STATE OF CONNECTICUT
CURTIS C. JONES
No. 23206
LICENSED PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	1" = 50' HOR. 1" = 5' VER.
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C403

LEGEND

PROPERTY LINE

EXISTING CONTOUR

CONTOUR FROM CONSTRUCTION GRADING TO REMAIN

CONTOUR FROM CONSTRUCTION TO BE MODIFIED

PROPOSED GRADING AFTER CONSTRUCTION

PERMANENT STORM DRAINAGE

WETLANDS/WATERCOURSE BOUNDARY

100' WETLANDS REVIEW AREA

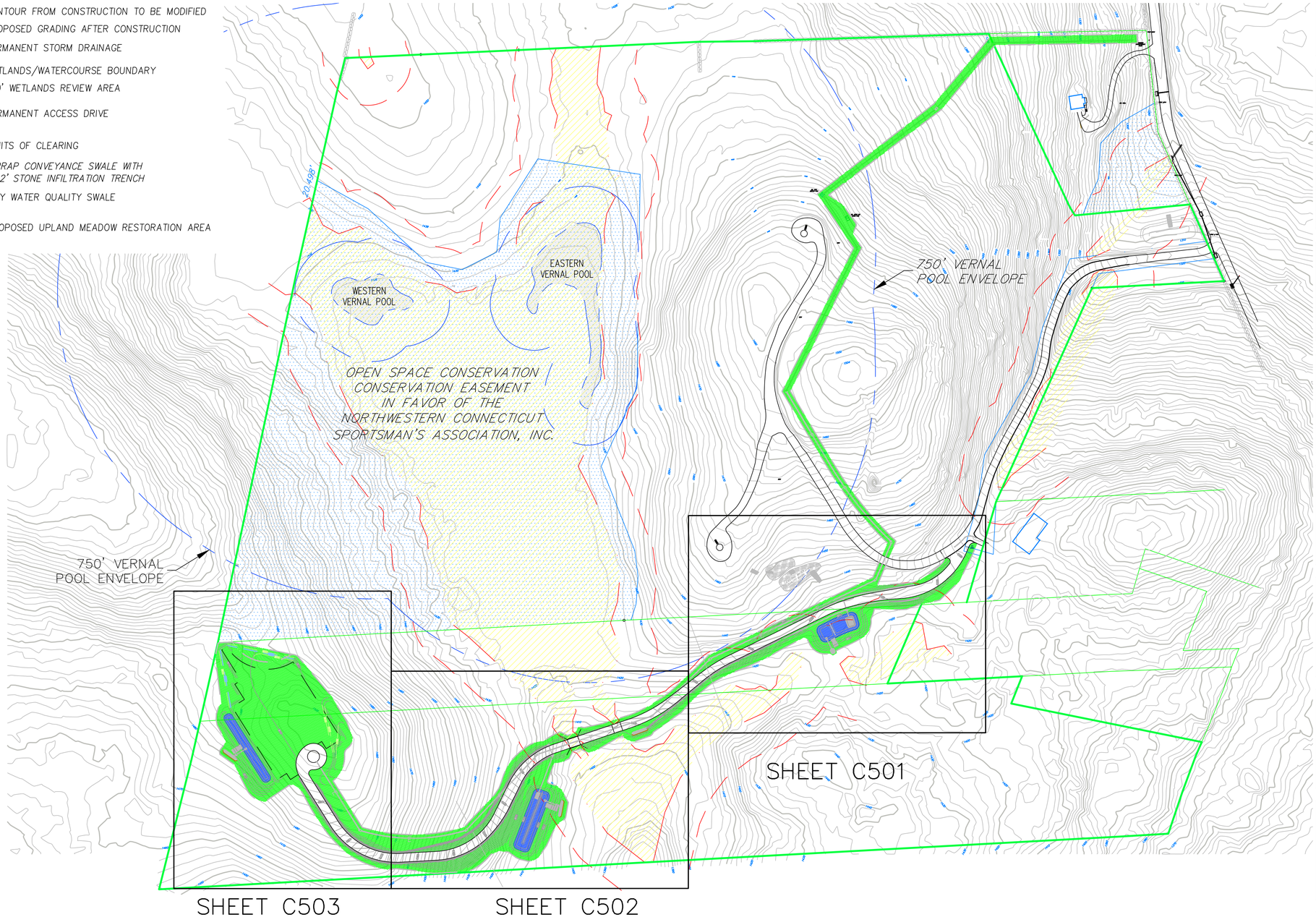
PERMANENT ACCESS DRIVE

LIMITS OF CLEARING

RIPRAP CONVEYANCE SWALE WITH
2'x2' STONE INFILTRATION TRENCH

DRY WATER QUALITY SWALE

PROPOSED UPLAND MEADOW RESTORATION AREA



NO.	REVISION	DATE
1	ACCESS DRIVE REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 60 150

1 inch = 150 ft.

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COLEBROOK, CT 06021

OVERALL
POST CONSTRUCTION
GRADING PLAN

WIND COLEBROOK SOUTH
FLAGG HILL ROAD

COLEBROOK CONNECTICUT

CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT
CURTIS C. JONES
No. 17808
LICENSED PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	1" = 150'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C500

TURBINE #1

EXISTING WATER QUALITY BASIN

XFMR

1460 1450 1440 1430 1420 1410

1426 1430 1436

142

14

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- CONTOUR FROM CONSTRUCTION GRADING TO REMAIN
- CONTOUR FROM CONSTRUCTION TO BE MODIFIED
- PROPOSED GRADING AFTER CONSTRUCTION
- PERMANENT STORM DRAINAGE
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- PERMANENT ACCESS DRIVE
- LIMITS OF CLEARING
- RIPRAP CONVEYANCE SWALE WITH 2'x2' STONE INFILTRATION TRENCH
- DRY WATER QUALITY SWALE
- PROPOSED UPLAND MEADOW RESTORATION AREA

NO.	REVISION	DATE
1	ACCESS DRIVE REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 15 30

1 inch = 30 ft.

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17 FLAGG HILL ROAD
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POST CONSTRUCTION GRADING PLAN
0+00 TO 9+00

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL 1
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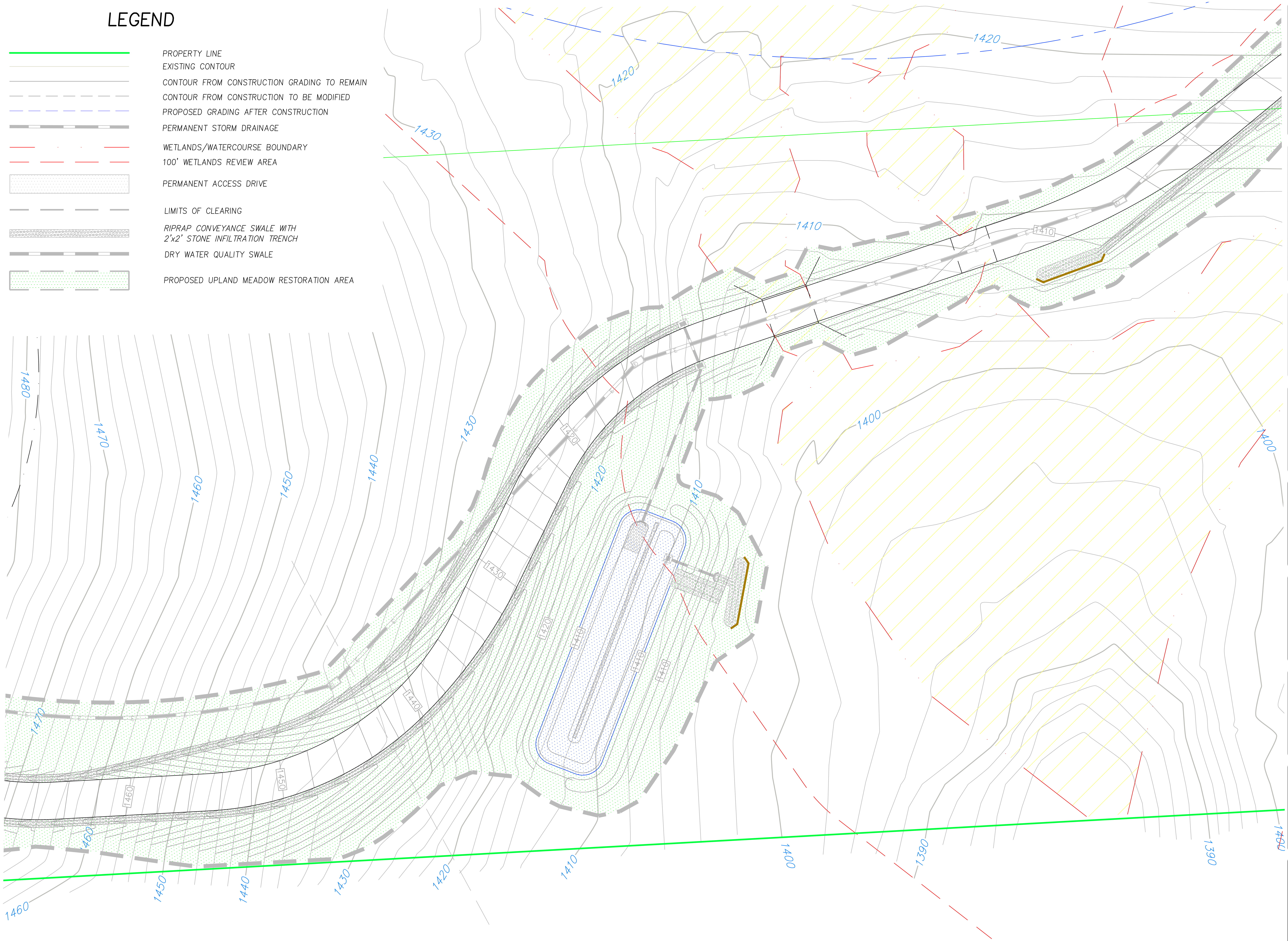
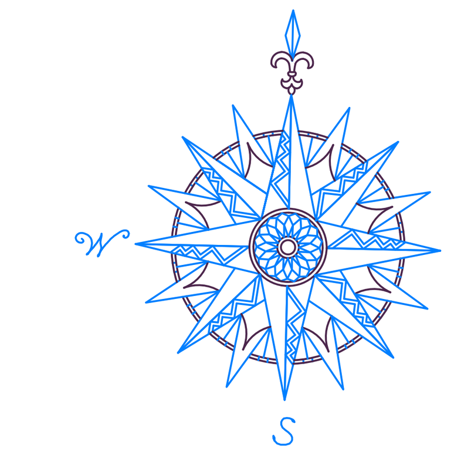
STATE OF CONNECTICUT CURTIS C. JOINER No. 17008 LICENSED PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	1" = 30'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C501

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- CONTOUR FROM CONSTRUCTION GRADING TO REMAIN
- CONTOUR FROM CONSTRUCTION TO BE MODIFIED
- PROPOSED GRADING AFTER CONSTRUCTION
- PERMANENT STORM DRAINAGE
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- PERMANENT ACCESS DRIVE
- LIMITS OF CLEARING
- RIPRAP CONVEYANCE SWALE WITH 2'x2' STONE INFILTRATION TRENCH
- DRY WATER QUALITY SWALE
- PROPOSED UPLAND MEADOW RESTORATION AREA





NO.	REVISION	DATE
1	ELECTRICAL ROUTING REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20
	Previous Editions Obsolete	

0 15 30

1 inch = 30 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

POST CONSTRUCTION GRADING PLAN
9+00 TO 19+00

WIND COLEBROOK SOUTH

FLAGG HILL ROAD

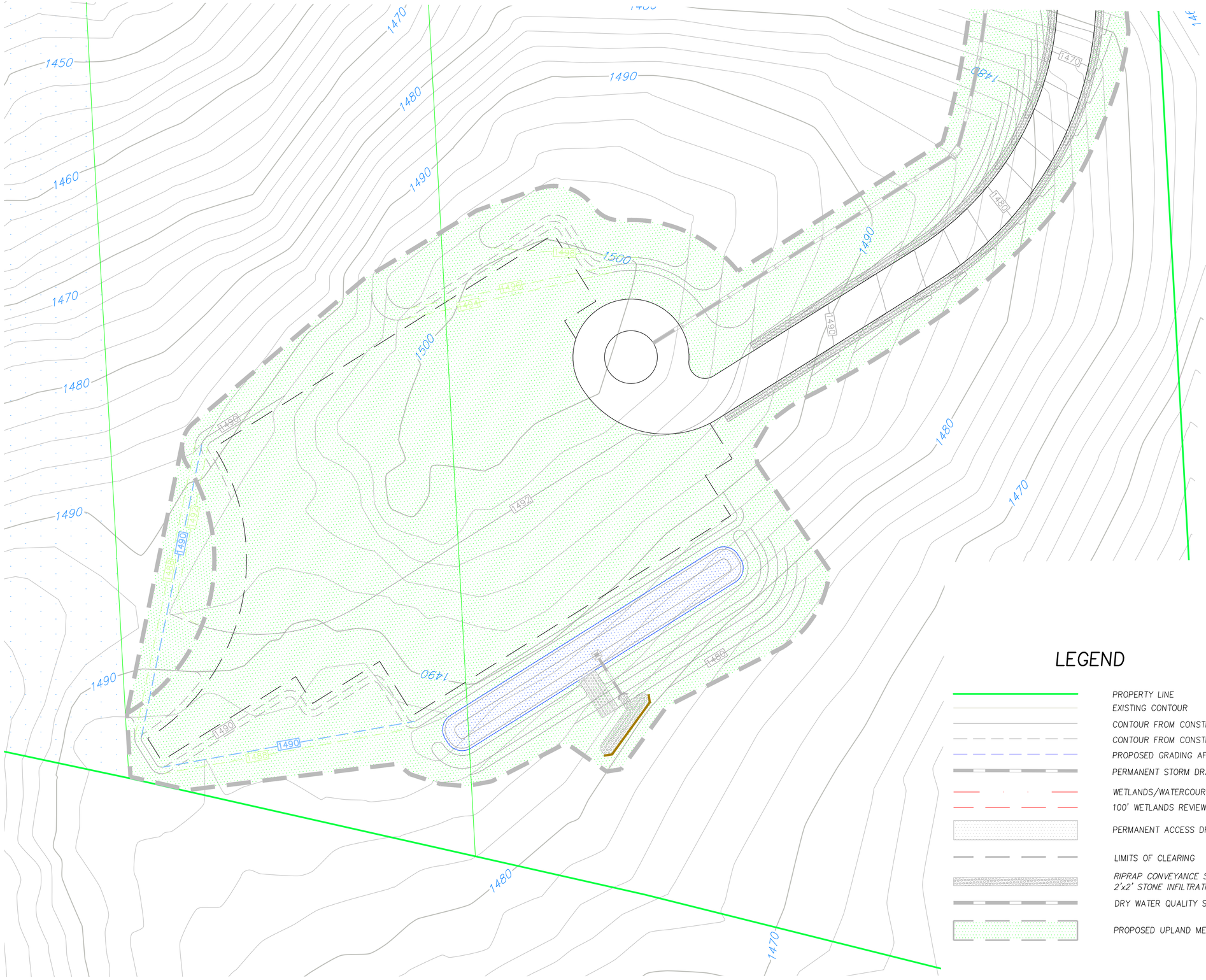
COLEBROOK CONNECTICUT

CIVIL 1

CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
(203) 266 - 0778
WOODBURY CONNECTICUT

STATE OF CONNECTICUT ★ CURTIS C. JONES ★ No. 17206 LICENSED PROFESSIONAL ENGINEER

DRAWN: SC APPROVED: CJ
SCALE: 1" = 30'
DATE: 15 NOV 19
PROJ. NO.: 3092 ARCH D_EJ
CADD FILE NAME: 3092 ARCH D_EJ
DRAWING NO.: C502



LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- CONTOUR FROM CONSTRUCTION GRADING TO REMAIN
- CONTOUR FROM CONSTRUCTION TO BE MODIFIED
- PROPOSED GRADING AFTER CONSTRUCTION
- PERMANENT STORM DRAINAGE
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- PERMANENT ACCESS DRIVE
- LIMITS OF CLEARING
- RIPRAP CONVEYANCE SWALE WITH 2'x2' STONE INFILTRATION TRENCH
- DRY WATER QUALITY SWALE
- PROPOSED UPLAND MEADOW RESTORATION AREA

NO.	REVISION	DATE
1	REVISED PER CT SITING COUNCIL	07 FEB 20

Previous Editions Obsolete

0 15 30

1 inch = 30 ft.

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

POST CONSTRUCTION GRADING PLAN
19+00 TO 26+50

WIND COLEBROOK SOUTH
FLAGG HILL ROAD

COLEBROOK CONNECTICUT

CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
(203) 266 - 0778
WOODBURY CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JONES · No. 17208 · LICENSED PROFESSIONAL ENGINEER

DRAWN:	SC
APPROVED:	CJ
SCALE:	1" = 30'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C503

CONSTRUCTION SEQUENCE

STEPS TO BE TAKEN TO PREVENT THE SILTING OF THE WETLANDS DURING CONSTRUCTION OF THE ACCESS DRIVE AND LAYDOWN AREAS FOR THE 'WIND COLEBROOK SOUTH' PROJECT, FLAGG HILL ROAD, COLEBROOK, CT.

THE SEQUENCE OF CONSTRUCTION WILL BE AS FOLLOWS:

Field stakeout the limits of all construction activities.

Clear all vegetation within the construction area from the access drive and from all turbine laydown and assembly areas. All trees/shrubs less than 6" in diameter shall be chipped. Install silt fence, hay bales and other perimeter siltation controls as shown on the erosion and sediment control plans prior to removal of stumps.

Remove stumps from the the access drive from station 0+00 to 12+50. Stumps shall be removed from the site. Stumps are not to be buried.

Strip topsoil material and stockpile prior to rough grading of roadways, turbine laydown and assembly areas. Stockpile material at locations shown on the plans. Ensure adequate erosion control measures are in place around stockpile areas.

Rough grade the access drive from station 0+00 to 12+50. The cuts and fills will be made and material processed on site as necessary. All finished slopes loamed, seeded and mulched unless specified to be finished with riprap.

Construct temporary sediment traps 1. Install storm drainage from Station 0+00 to 12+50. Install all temporary and permanent water diversions to keep clean water away from construction areas and divert sediment laiden water toward temporary sediments traps and staked haybale barries.

Temporary diversion ditches with haybales may need to be installed to control lateral runoff along both sides of the proposed road prior to importing processed gravel.

Place gravel on drive, compact in 3–8" lifts per detail on proposed drives.

Install Bridge Crossing.

Remove stumps from the area of the proposed access drive from Station 12+80 to 26+50, the assembly area, storage area, crane pad and turbine 3 location. Stumps shall be removed from the site. Stumps are not to be buried.

Water bars, haybale traps and silt fence will be used to control erosion during rough grading of access drive as shown.

Strip topsoil material and stockpile prior to rough grading of roadway. Stockpile material at locations shown on the plans. Ensure adequate erosion control measures are in place around stockpile areas.

Rough grade access drive to station proposed access drive from Station 12+80 to 26+50, the assembly area, storage area, crane pad and turbine 3 location.

Install drainage and construct TST 2 & 3. The cuts and fills will be made and material processed on site as necessary. All finished slopes loamed, seeded and mulched unless specified to be finished with riprap.

Additional haybales shall be placed across unpaved roads at the end of each work day to prevent sedimentation and soil erosion as required.

Construct riprap swales, stone infiltration trenches and water quality trenches as shown on plans. The swales and water quality trenches need to be protected from sedimentation during construction. If sedimentation occurs they will need to be cleaned or reconstructed as necessary until vegetation has been established.

Provide temporary seeding measures on all exposed soils which were damaged due to construction activities and are not to be permanently restored or are outside of construction traffic zones for a period in access of 30 days.

Seed all disturbed areas. Clean all silt from drainage structures. Remove temporary sediment traps and erosion control measures after site is stabilized with vegetation.

After turbine construction is complete grade site in accordance with the post–construction grading plans and plant the upland meadow restoration areas as shown.

The starting time for the construction is unknown, however the time limit for the construction of the drive should be limited to 180 days.

BRIDGE CONSTRUCTION & INSTALLATION SEQUENCE

Construction of timber mat for temporary stream crossing shall be completed prior to commencing bridge construction.

Contractor shall take whatever precautions necessary to prevent construction material(s) from falling into riverbed. Any and all material(s) that fall into riverbed shall be removed immediately.

Install sandbags along edge of proposed bridge footing installation locations in as minimally invasive manner as possible. Sandbags to be located outside edge of river. Install sandbags in such a way to minimize inflow of river water into proposed footing excavation areas and maintain existing river flow.

Maintain/reset dewatering equipment as necessary to evacuate any water within the proposed bridge footing installation excavations. Discharge of dewatering wastewater shall be to an appropriately sized dewatering wastewater discharge area through filter media bag(s) attached to the pump discharge hose(s). Dewatering wastewater discharge areas to be situated to provide a measure of overland flow of the effluent prior to reaching the river to further prevent sedimentation and turbidity.

Excavate for the installation of the proposed bridge footings. Precast footing segments shall be used to expedite construction and minimize construction time adjacent to edge of river. Upon completion of bridge footing installations, install precast concrete bridge arches, wingwalls and headwalls per manufactures standards and specifications.

Upon completion of footing placement, remove sandbags and restore disturbed portions of the riverbank to pre–construction conditions using in situ stones.

Upon completion of installation of precast concrete bridge elements, place suitable fill material to proposed grade elevations per bridge manufacturer's specifications.

Install railings per bridge manufacturer's specifications. contractor shall take whatever precautions necessary to insure no railing / masonry materials (hardware, stone, mortar, etc.) fall into the riverbed during this activity. Any and all such materials that fall into the riverbed shall be removed immediately.

Upon completion of railings dispose of any and all remaining masonry materials, trash, debris, etc. Restore areas of riverbed disturbed during this activity to pre–construction conditions using in situ riverbed material and stabilize appropriately.

Upon finalization of complete bridge installations, disassemble and remove temporary stream crossing. Restore areas disturbed during the construction activities to their pre–construction condition or better. Provide and install loam and seed, perform aeration, irrigate, etc as necessary and/or directed by the landscape architect.

EROSION CONTROL NARRATIVE

RESPONSIBILITY FOR THE PLAN

Whenever sedimentation is caused by stripping vegetation and/or grading, it shall be the responsibility of the person, corporation or other entity having responsibility to remove sedimentation from all lower properties, drainage systems and watercourses and to repair any damage at their expense as quickly as possible.

All control measures will be maintained in effective condition throughout the construction period. Surface inlets shall be kept open and free of sediment and debris. The system shall be checked after every major storm and sediment shall be disposed of at an approved location consistent with the plan.

It shall be the responsibility of any person, corporation or other entity engaging in any act on or near any stream, watercourse or swale or upon the flood plain or right–of–way thereof to maintain as nearly as possible in its present state that same stream, watercourse, swale, flood plain or right–of–way for the duration of the activity and to return it to its original or equal condition after such activity is completed.

No person, corporation or other entity shall block, impede the flow of, alter, construct any structure or deposit any material or thing or commit any act which affects normal or flood flow in any communal stream or watercourse without having obtained prior approval from the Town.

THE PARTY RESPONSIBLE FOR THE IMPLEMENTATION AND OVERSIGHT OF THE EROSION CONTROL PLAN SHALL BE:

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021
PHONE: (800) 450–0503

SEEDING AND PLANTING REQUIREMENTS

Seedbed Preparation
Fine grade and rake surface to remove stones larger than 2" in diameter. Install needed erosion control devices such as surface water diversions. Grade stabilization structures, sediment basins or drainage channels to maintain grassed areas. Apply limestone at a rate of 2 tons/Ac. or 90 lbs/1000 SF unless otherwise required according to soil test results. Apply fertilizers with 10–10–10 at a rate of 300 lbs./Ac. or 77.5 lbs/1000 SF. At least 50% of the nitrogen shall be from organic sources. Work lime and fertilizer into soil uniformity to a depth of 4" with a whisk, springtooth harrow or other suitable equipment following the contour lines.

Seed Application
Apply grass mixtures at rates specified by hand, cyclone seeder or hydroseeder. Increase seed mixture by 10% if hydroseeder is used. Lightly drag or roll the seeded surface to cover seed. Seeding for selected fine grasses should be done between April 1 and June 1 or between August 15 and October 15. If seeding cannot be done during these times, repeat mulching procedure below until seeding can take place or seed with a quick germinating seed mixture to stabilize slopes. A quick germinating seed mixture (Domestic Rye) can be applied between June 15 through August 15 as approved by the Architect or Engineer.

Mulching
Immediately following seeding, mulch the seeded surface with straw, hay or wood fiber at a rate of 1.5 to 2 tons/Ac. except as otherwise specified elsewhere. Mulches should be free of weeds and coarse matter. Spread mulch by hand or mulch blower. Punch mulch into soil surface with track machine or disk harrow set straight up. Mulch material should be "tucked" approximately 2– 3" into the soil surface. Chemical mulch binders or netting, in combination with the straw, hay or wood fibers, will be used where difficult slopes do not allow harrowing by machines.

Grass Seed Mixtures

Temporary Covers		Permanent Covers
Perennial ryegrass 40 lbs/Ac.	20 lbs/Ac.	Creeping Red Fescue
Annual ryegrass 20 lbs/Ac.	20 lbs/Ac.	Canada Bluegrass

GENERAL PRINCIPLES

The following general principles shall be maintained as effective means of minimizing erosion and sedimentation during the development process.

Stripping away of vegetation, regrading or other development shall be done in such a way as to minimize erosion.

Grading and development plans shall preserve important natural features, keep cut and fill operations to a minimum, and insure conformity with topography so as to create the least erosion potential and adequately handle the volume and velocity of surface water runoff.

Whenever feasible, natural vegetation shall be retained, protected and supplemented wherever indicated on the site development plan.

The undisturbed area and the duration of exposure shall be kept to a practical minimum.

Disturbed soils shall be stabilized as quickly as possible.

Temporary vegetation and/or mulching shall be used to protect exposed critical areas during development when expected to be exposed in excess of 30 days.

The permanent (final) vegetation and mechanical erosion control measures shall be installed as soon as practical during construction.

Sediment in the runoff water shall be trapped until the disturbed areas is stabilized by the use of debris basins, sediment basins, silt traps or similar measures.

Concentration of surface runoff shall be only permitted by piping and/or through drainage swales or natural watercourses.

EXCAVATION AND FILLS

Slopes created by cuts or fills shall not be steeper than 1.5:1 and shall be restabilized by temporary or permanent measures, as required during the development process and shown on the site plans.

Adequate provisions shall be made to prevent surface water from damaging the cut face of excavations or the sloping surfaces of fills.

Cut and fills shall not endanger adjoining property.

All fills shall be compacted to provide stability of material and to prevent undesirable settlement. The fill shall be spread in a series of layers each not exceeding twelve (12) inches in thickness and shall be compacted by a sheep roller or other approved method after each layer is spread.

Fills shall not encroach on natural watercourses, constructed channels or regulated flood plain areas, unless permitted by license or permit from authority having jurisdiction in accordance with approved site plans.

Fills placed adjacent to natural watercourses, constructed channels or flood plains shall have suitable protection against erosion during periods of flooding.

Grading shall not be done in such a way as to divert water onto the property of another landowner without their express written consent.

During grading operations, necessary measures for dust control shall be exercised.

Sedimentation and erosion control shall be implemented in accordance with the Guidelines for Soil Erosion and Sediment Control (2002) – State of Connecticut DEP Bulletin 34.

The following general specifications will also be adhered to:

Land disturbance will be kept to a minimum. Restabilization will be scheduled as soon as practical.

Haybale filters will be installed at all culvert outlets and along the toe of all critical cut and fill slopes.

Culvert discharge areas will be protected with riprap channels. Energy dissipaters will be provided as necessary.

Catch basins will be protected with haybale filters throughout the construction period and until all disturbed areas are thoroughly stabilized.

All erosion and sediment control measures will be constructed in accordance with the standards and specifications of the Guidelines for Soil Erosion and Sediment Control (2002) – State of Connecticut DEP Bulletin 34.

Erosion and sediment control measures will be installed prior to construction whenever possible.

All control measures will be maintained in effective condition throughout the construction period.

Additional control measures will be installed during construction if necessary or required.

All erosion control measures shall be inspected weekly and within 24 hours of a rainfall event of 0.5 inches or greater.

UPLAND RESTORATION AND THIRD PARTY MONITORING NARRATIVE

Wind Colebrook South – Upland Restoration Plan

Disturbed upland areas will be restored following construction with New England Conservation/Wildlife Mix, a native herbaceous seed mixture that will form a permanent, maintenance free cover of grasses, forbs, wildflowers and legumes. This seed mixture will provide erosion control and wildlife habitat value. Areas that will not be subject to annual mowing will revert to forest through the natural process of succession.

Upland Restoration Plan Construction Sequence and Planting Schedule

1. Prior to all work, erosion control barriers will be installed as detailed on the Erosion Control Plan.
2. Where adequate topsoil (±6 inches) does not exist, disturbed areas shall be backfilled to a minimum depth of 6 inches with clean topsoil. Once final topsoil is in place, these areas will be planted with New England Conservation/Wildlife Mix after the completion of final grading. The seed mix will be applied at a rate of 1 lb/1,750 square feet. Soil conditioning activities, including raking, will be combined with the seed application process.
3. Where 2:1 slopes are utilized for final grading, or in areas specified on the plan sheets, biodegradable erosion control matting will be installed over the seed mixture to promote establishment of vegetation and aid in stabilization. The contractor will use "SC2" erosion control matting, available at New England Wetland Plants Inc. (413) 548–8000 or an approved equivalent.
4. The contractor will be responsible for the careful installation, maintenance (including watering) and establishment of native plant material in these areas.
5. The erosion control barriers shall be disassembled following successful stabilization of these areas. Sediment collected by these devices will be removed and disposed of in a manner that prevents erosion and transport to a wetland or watercourse.
6. Monitoring of revegetated areas will be conducted as follows by a qualified third party inspector. These areas will be monitored the first three growing seasons following establishment. Monitoring reports will be submitted to the Connecticut Siting Council no later than December 15 of each year. The reports will provide details on the three success standards described below. In the event that remediation measures are required, recommendations will be provided. The first year of monitoring will be the first year that the site has been through a full growing season after completion of construction and planting. For monitoring purposes, a growing season starts no later than May 31.
7. Revegetated areas will be assessed using three success standards. Each standard is described below. Success Standard 1: At least 75% of the surface area of these areas should be reestablished with indigenous species within three growing seasons. Success Standard 2: Vegetation should be checked to ensure that no invasive species colonize in these areas. Success Standard 3: Slopes within and adjacent to the revegetated areas are stabilized.
8. In the event that remediation measures are recommended, BNE ENERGY INC. will initiate these measures with the assistance of the qualified third party inspector.
9. If necessary to control invasive species, herbicide applications will be conducted by a state–licensed individual. If applications are required in proximity to site wetlands, the herbicide RODEO® [glyphosate (53.8% active ingredient)] shall be utilized as it is the only herbicide approved by CTDEP for application in aquatic environments.
10. Fertilizers will not be used to promote growth within these areas. The proposed seed mixture contains a variety of native herbaceous species adept at colonizing recently disturbed areas.

Planting Schedule 1: Upland Restoration Areas

Disturbed areas will be planted with New England Conservation/Wildlife Mix (or equivalent) at 1750 sq.ft./lb. or as recommended by manufacturer. This mix includes the following species: big bluestem (Andropogon gerardii), fringed brome grass (Bromus ciliates), creeping red fescue (Festuca rubra), Canada wild rye (Elymus Canadensis), Virginia wild rye (Elymus virginicus), switchgrass (Panicum virgatum), deer tongue grass (Panicum clandestinum), little bluestem (Schizachyrium scoparium), Indian grass (Sorghastrum nutans), common milkweed (Asclepias syriaca), New England aster (Aster novae–angliae), partridge pea (Chamaecrista fasciculate), showy tick–trefoil (Desmodium Canadense), grass leaved goldenrod (Euthamia graminifolia), gray goldenrod (Solidago nemoralis).

Wind Colebrook South – Third Party Environmental Inspections

1. A qualified third party environmental inspector shall inspect the installation of erosion and sedimentation controls prior to the start of construction activities. A pre–construction meeting shall be held with the third party environmental inspector and general contractor prior to the start of construction.
2. The qualified third party environmental inspector will monitor erosion and sedimentation controls throughout the construction period to ensure that controls are properly maintained and any recommendations to remediate failing controls or removal accumulated sediment are implemented by the contractor in a timely fashion.
3. The qualified third party environmental inspector shall monitor erosion and sedimentation controls on a weekly basis or within 24 hours of a rainfall event of 0.5 inches or greater.
4. Erosion and sedimentation control monitoring reports will be prepared by the third party environmental inspector on a bi–weekly basis and submitted to the Connecticut Siting Council.
5. The on–site erosion and sediment controls shall be montiored by a qualified third party environmental inspector to ensure establishment of appropriate environmental safeguards protective of amphibian and reprtile species.

WETLAND REGULATED ACTIVITY

Previous Wetlands Impacts:
Driveway Improvements at Main Entrance (Completed) – 360 sf

Proposed Wetlands Impacts:
Crossing at Turbine #3 Access Road Station 12+63 – 2,320 sf

Total Activity in Wetlands – 2,680 sf

EARTHWORK QUANTITY ESTIMATE

TOTAL CUT – 13,780 C.Y.
TOTAL FILL – 13,200 C.Y.

NET CUT – 580 C.Y.

NOTE:
1. ALL RIPRAP, PROCESSED GRAVEL AND STONE TO BE PROCESSED FROM ON–SITE MATERIAL;
2. ALL EXCAVATED (CUT) MATERIAL TO BE REUSED ON–SITE.

OVERALL SITE DISTURBANCE ASSOCIATED WITH THE PROPOSED IMPROVEMENTS – 8.45 ACRES

NO.	REVISION	DATE
1	REGULATED ACTIVITY REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20
	Previous Editions Obsolete	

BNE ENERGY INC.
17 FLAGG HILL ROAD
COLEBROOK, CT 06021

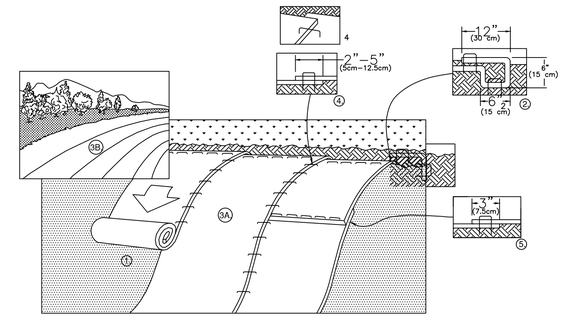
EROSION CONTROL NARRATIVE & CONSTRUCTION SEQUENCE

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL C1
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JOVINELLI · No. 17208 · LICENSED PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	N.T.S
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C600



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM™ STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH™ ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

NOTE:
*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION CONTROL BLANKETS

S150BN: Material:

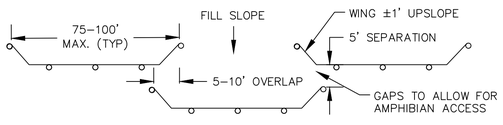
100% Straw fiber matrix sewn between two bio-degradable nets.

Net: Temporary lightweight bio-degradable (Both sides)

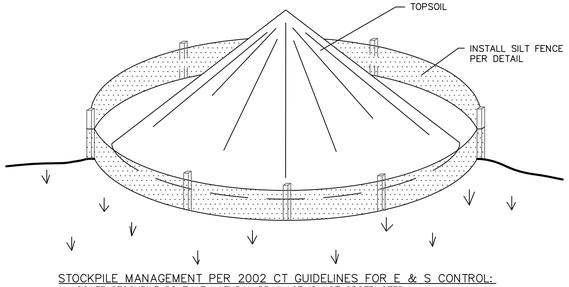
CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTE
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS IN EXCESS OF 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

EROSION CONTROL BLANKET
N.T.S.

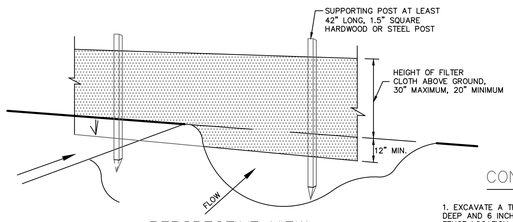


SYNCOPATED SILT FENCE INSTALLATION
PLAN VIEW
FOR AREAS WITHIN 750' OF A VERNAL POOL

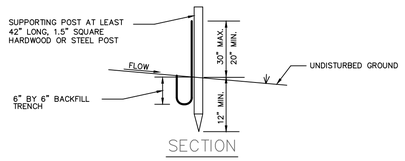


STOCKPILE MANAGEMENT PER 2002 CT GUIDELINES FOR E & S CONTROL:
1. LOCATE STOCKPILE SO THAT NATURAL DRAINAGE IS NOT OBSTRUCTED.
2. DIVERT RUNOFF WATER AWAY FROM OR AROUND THE STOCKPILE.
3. INSTALL A GEOTEXTILE SILT FENCE OR HAY BALE BARRIER AROUND THE STOCKPILE AREA APPROXIMATELY 10 FEET FROM PROPOSED TOE OF THE SLOPE.
4. THE SIDE SLOPES OF STOCKPILED MATERIAL SHOULD BE NO STEEPER THAN 2:1.
5. STOCKPILES THAT ARE NOT TO BE USED WITHIN 30 DAYS NEED TO BE SEEDED AND MULCHED IMMEDIATELY AFTER FORMATION OF THE STOCKPILE.
6. AFTER STOCKPILE HAS BEEN REMOVED, THE SITE SHOULD BE GRADED AND PERMANENTLY STABILIZED.

TEMPORARY TOPSOIL STOCKPILE
N.T.S.



PERSPECTIVE VIEW



SECTION

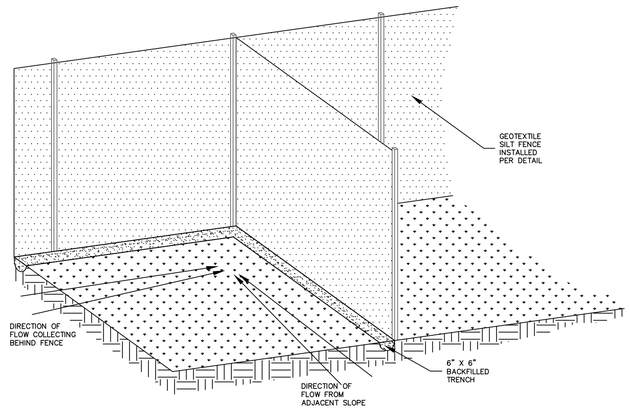
SILT FENCE DETAIL

CONSTRUCTION NOTES FOR SILT FENCE

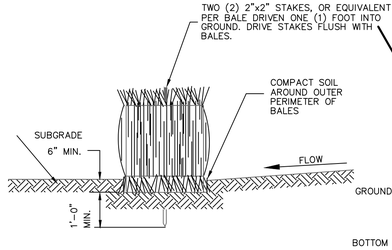
1. EXCAVATE A TRENCH A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE ON THE UP SIDE OF THE FENCE LOCATION.
2. DRIVE SUPPORT POSTS ON THE DOWN SLOPE SIDE OF THE TRENCH TO A DEPTH OF AT LEAST 12 INCHES INTO ORIGINAL GROUND.
3. STAPLE OR SECURE THE GEOTEXTILE TO THE SUPPORT POSTS PER MANUFACTURER'S INSTRUCTIONS SUCH THAT AT LEAST 6 INCHES OF GEOTEXTILE LIES WITHIN THE TRENCH.
4. BACKFILL THE TRENCH WITH TAMPED SOIL OR AGGREGATE OVER THE GEOTEXTILE.

POSTS: 1.5" SQUARE HARDWOOD OR STEEL

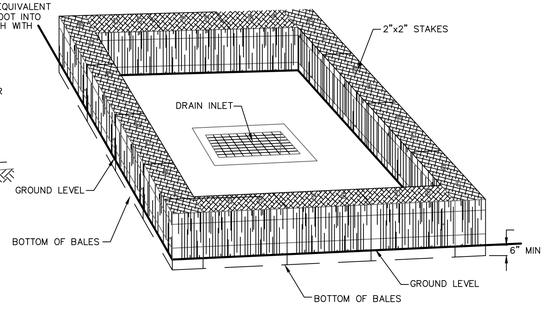
FILTER CLOTH: MIRAFI 100X, ENVIROFENCE OR APPROVED EQUAL



SILT FENCE WING
N.T.S.



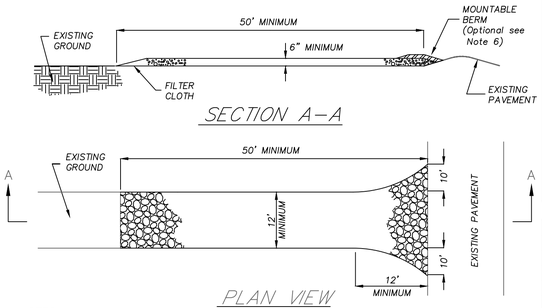
SECTION



PERSPECTIVE VIEW

NOTES:
1. ALL BALES ARE TO BE TIGHTLY BUTTED TOGETHER.
2. BALES SHALL BE EITHER STRAW OR HAY.
3. PROVIDE FREQUENT INSPECTION AND MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AND REPLACE CLOGGED BALES TO RESTORE EFFECTIVENESS OF INSTALLATION.

BALED FILTER



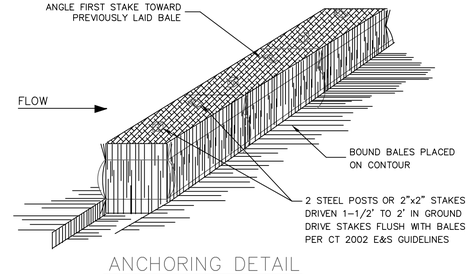
SECTION A–A

PLAN VIEW

NOTES:
1. *STONE SIZE – USE 1" – 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.*
2. *LENGTH – AS REQUIRED, BUT NOT LESS THAN 50 FEET.*
3. *THICKNESS – NOT LESS THAN SIX (6) INCHES.*
4. *WIDTH – 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FOOT MINIMUM IF SINGLE ENTRANCE TO SITE.*
5. *FILTER CLOTH – TO BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.*
6. *SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.*
7. *MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DRIPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.*
8. *WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.*
9. *PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.*

STABILIZED CONSTRUCTION ENTRANCE

BEDDING DETAIL



ANCHORING DETAIL

NOTES:
1. BALES SHALL BE EITHER STRAW OR HAY.
2. BALES SHALL BE PLACED AT THE TOE OF SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
3. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4 INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
4. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
5. INSPECTION SHALL BE FREQUENT, AND REPAIR AND/OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED TO MAINTAIN EFFECTIVENESS OF INSTALLATION.
6. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

STAKED HAY BALE BARRIER
N.T.S.

NO.	REVISION	DATE
1	REVISED PER CT SITING COUNCIL	07 FEB 20
	Previous Editions Obsolete	

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COLEBROOK, CT 06021

DETAILS

WIND COLEBROOK SOUTH
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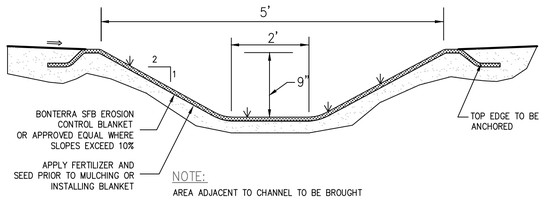
STATE OF CONNECTICUT
CURTIS C. JOYNER
No. 17208
LICENSED
PROFESSIONAL ENGINEER

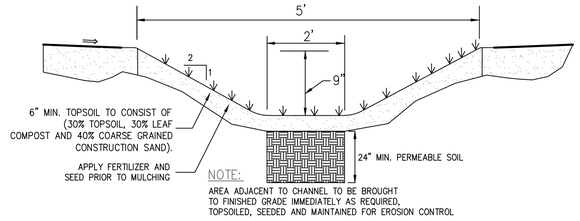
DRAWN: SC	APPROVED: CJ
SCALE:	N.T.S
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C601



NOTE:
AREA ADJACENT TO CHANNEL TO BE BROUGHT TO FINISHED GRADE IMMEDIATELY AS REQUIRED, TOPSOILED, SEEDED AND MAINTAINED FOR EROSION CONTROL

TEMPORARY DIVERSION SWALE

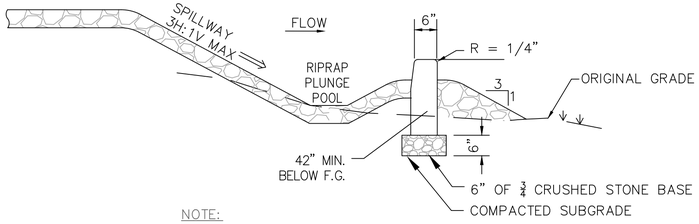
N.T.S.



NOTE:
AREA ADJACENT TO CHANNEL TO BE BROUGHT TO FINISHED GRADE IMMEDIATELY AS REQUIRED, TOPSOILED, SEEDED AND MAINTAINED FOR EROSION CONTROL

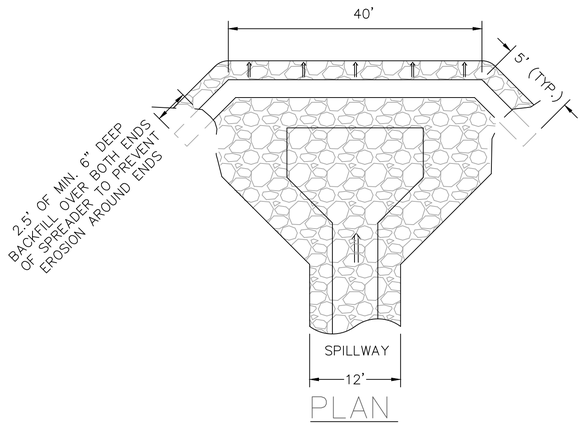
DRY WATER QUALITY SWALE

N.T.S.



NOTE:
1. AREA ADJACENT TO SWALE TO BE BROUGHT TO FINISHED GRADE IMMEDIATELY AS REQUIRED, TOPSOILED, SEEDED AND MAINTAINED FOR EROSION CONTROL.
2. BOTTOM OF THE CONCRETE SHALL BE AT LEAST 42" BELOW FINISHED GRADE

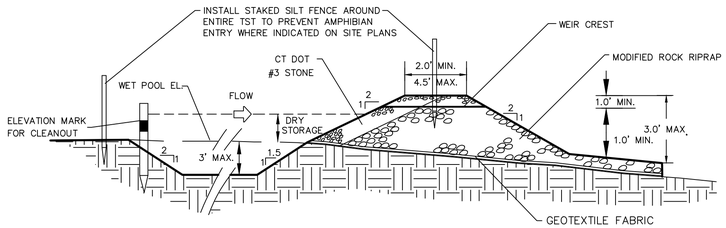
SECTION



PLAN

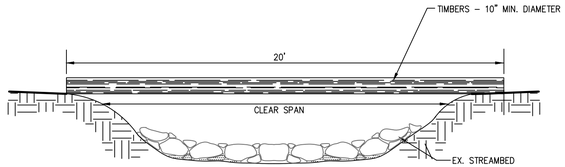
CONCRETE LEVEL SPREADER DETAIL

N.T.S.



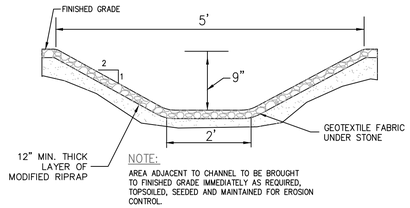
TEMPORARY SEDIMENT TRAP OUTLET

N.T.S.



NOTES:
1. REMOVE TREES & VEGETATION FROM AREA.
2. PLACE TIMBERS.
3. STABILIZE DISTURBED AREAS WITH 2" RIPRAP.

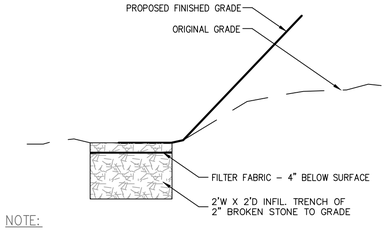
TEMPORARY TIMBER STREAM CROSSING



NOTE:
AREA ADJACENT TO CHANNEL TO BE BROUGHT TO FINISHED GRADE IMMEDIATELY AS REQUIRED, TOPSOILED, SEEDED AND MAINTAINED FOR EROSION CONTROL.

RIPRAP DIVERSION/CONVEYANCE SWALE

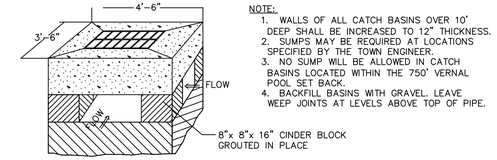
N.T.S.



NOTE:
TRENCH IS TO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION. SHOULD SEDIMENTATION OCCUR REMOVE FILTER FABRIC AND CLEAN OR REPLACE TOP 4" OF STONE.

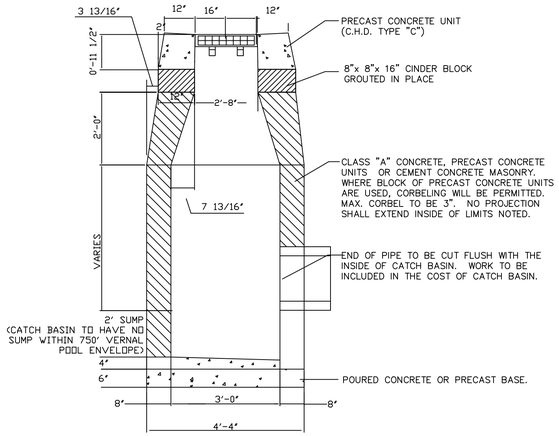
STONE INFILTRATION TRENCH

(N.T.S.)



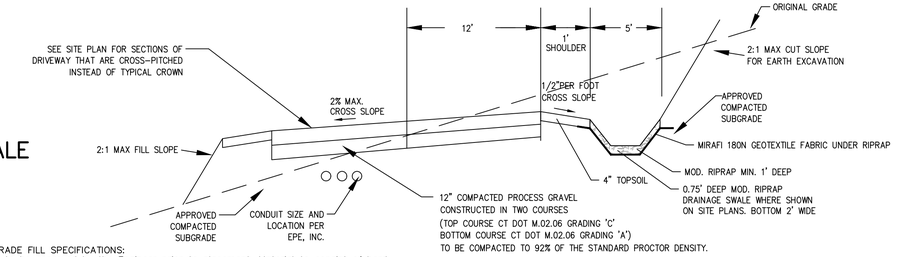
NOTE:
1. WALLS OF ALL CATCH BASINS OVER 10' DEEP SHALL BE INCREASED TO 12" THICKNESS.
2. SUMPS MAY BE REQUIRED AT LOCATIONS SPECIFIED BY THE TOWN ENGINEER.
3. NO SUMP WILL BE ALLOWED IN CATCH BASINS LOCATED WITHIN THE 750' VERNAL POOL SET BACK.
4. BACKFILL BASINS WITH GRAVEL. LEAVE WEEP JOINTS AT LEVELS ABOVE TOP OF PIPE.

PLAN VIEW



SECTION A–A

STANDARD TYPE "CL" CATCH BASIN



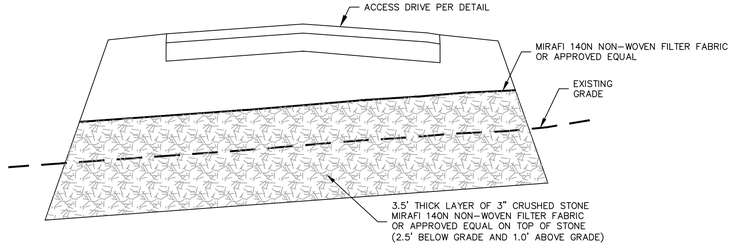
SUBGRADE FILL SPECIFICATIONS:
1. Fill to be approved by the Engineer prior to placement. Material to consist of hard and durable particles or fragments and shall be free of frozen material, sod, brush, roots, stumps, organic matter and other objectionable materials.

2. Subbase fill material shall be compacted to 90% of the standard proctor density until the required elevation is obtained.

3. Subbase and fill specifications to be confirmed and modified as necessary after site analysis by geotechnical engineer. Access drive design must be able to accommodate all proposed construction vehicles including crawler crane.

ACCESS DRIVE CROSS SECTION

N.T.S.



SEEPAGE ENVELOPE DETAIL

N.T.S.

NO.	REVISION	DATE
1	DETAIL REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20
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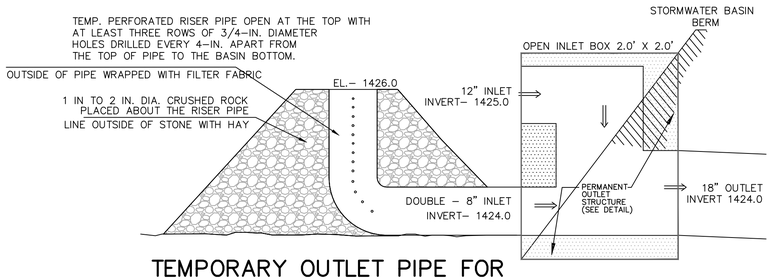
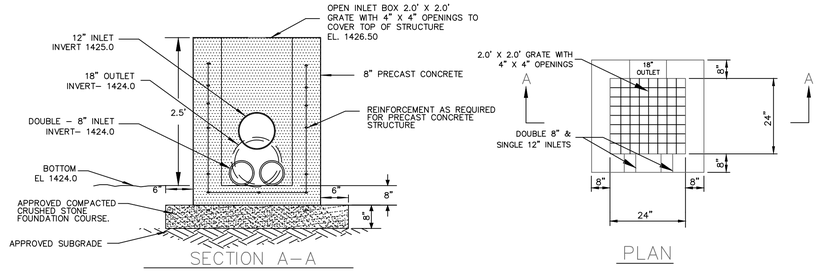
STATE OF CONNECTICUT
CURTIS C. JONES
No. 17005
LICENSED PROFESSIONAL ENGINEER

DRAWN:	SC
APPROVED:	CJ
SCALE:	N.T.S
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C602



TEMPORARY OUTLET PIPE FOR SEDIMENT CONTAINMENT STORMWATER RENOVATION AREA 'A'

N.T.S.



STORMWATER RENOVATION AREA 'A'

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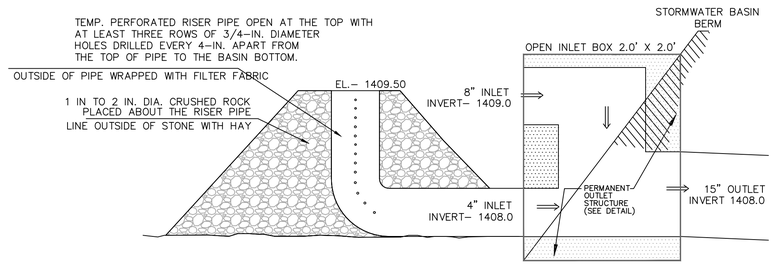

TEMPORARY OUTLET PIPE FOR SEDIMENT CONTAINMENT STORMWATER RENOVATION AREA 'B'

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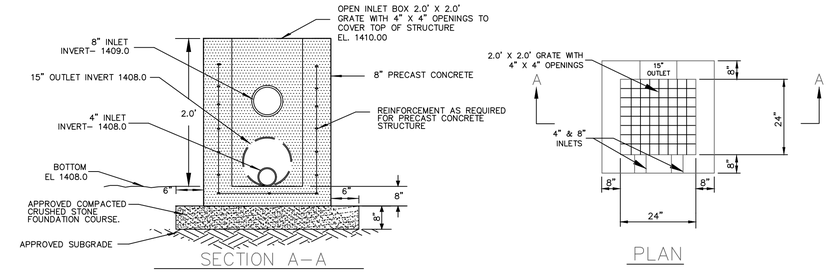

STORMWATER RENOVATION AREA 'B'

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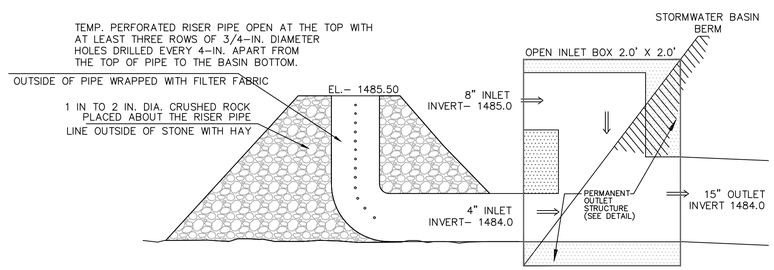

TEMPORARY OUTLET PIPE FOR SEDIMENT CONTAINMENT STORMWATER RENOVATION AREA 'C'

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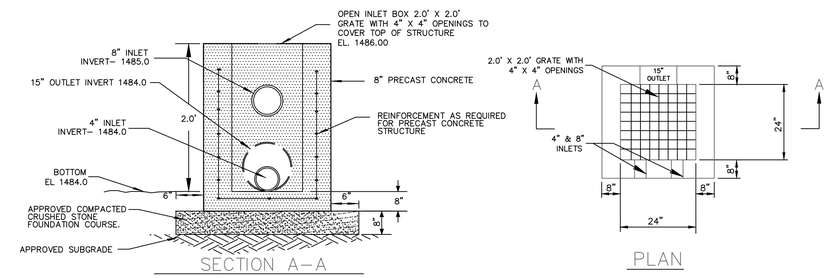

STORMWATER RENOVATION AREA 'C'

N.T.S.

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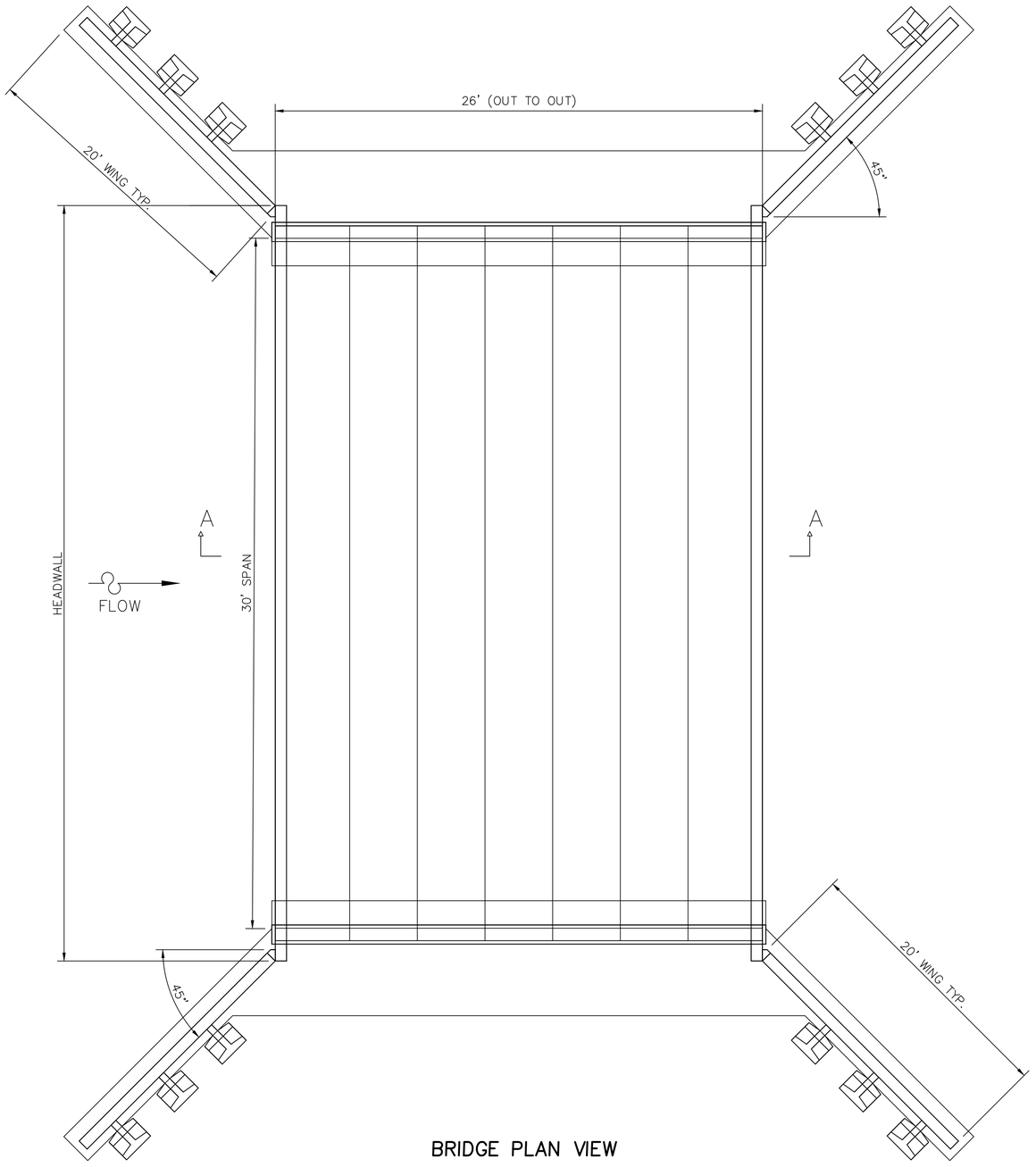
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICUT

STATE OF CONNECTICUT · CURTIS C. JONES · No. 17805 · LICENSED PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	N.T.S
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C603



BRIDGE PLAN VIEW

NO.	REVISION	DATE
1	DETAIL REVISED	17 DEC 19
	Previous Editions Obsolete	

BNE ENERGY INC.
17 FLAGG HILL ROAD
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DETAILS

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

CIVIL C1
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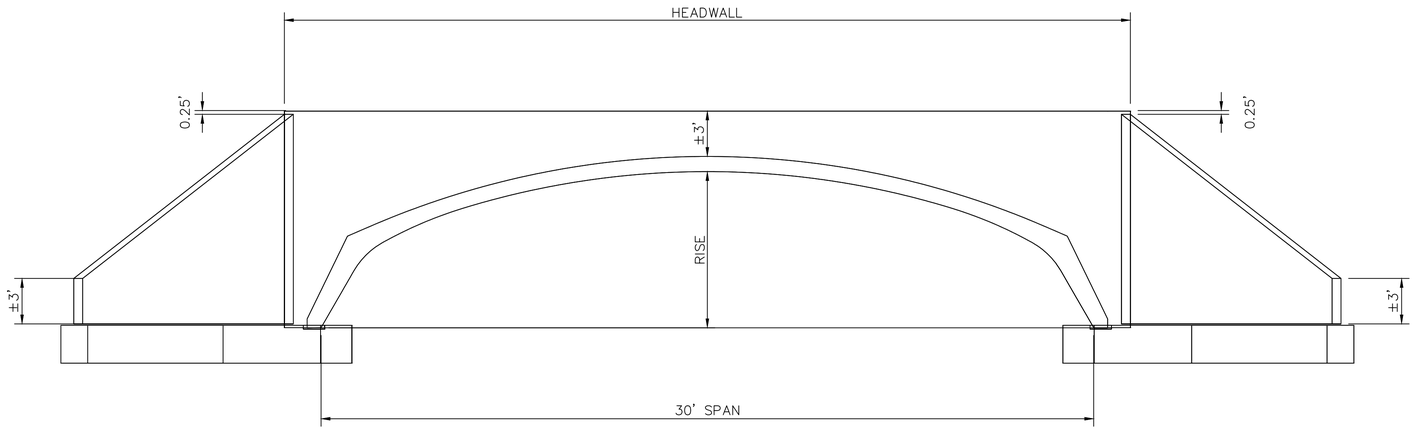
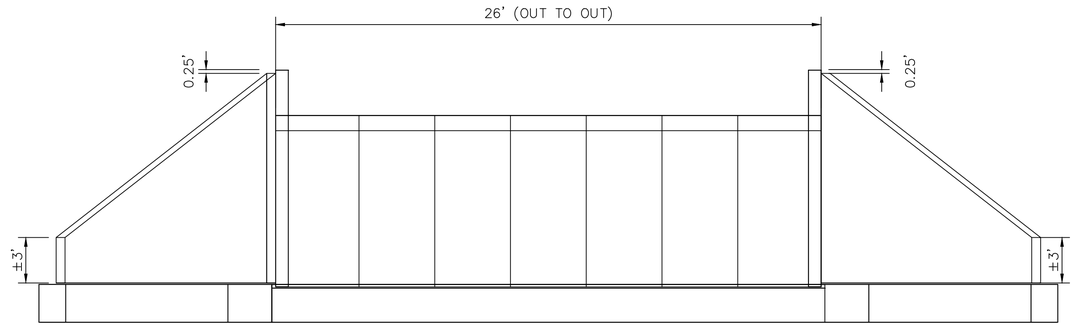
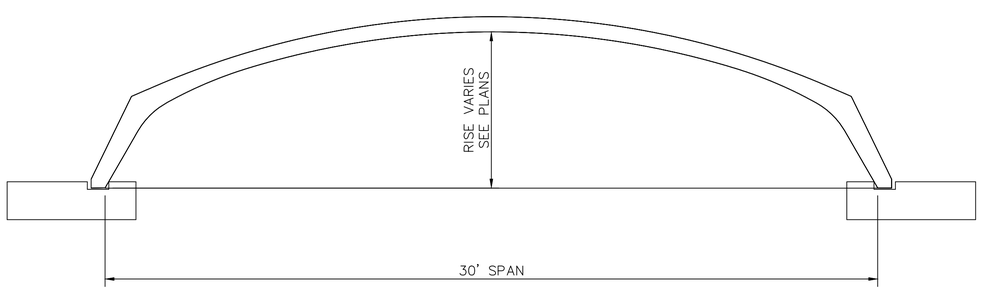
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C604



TYPICAL END ELEVATION



TYPICAL CULVERT SECTION



TYPICAL CULVERT SPAN – CROSS SECTION

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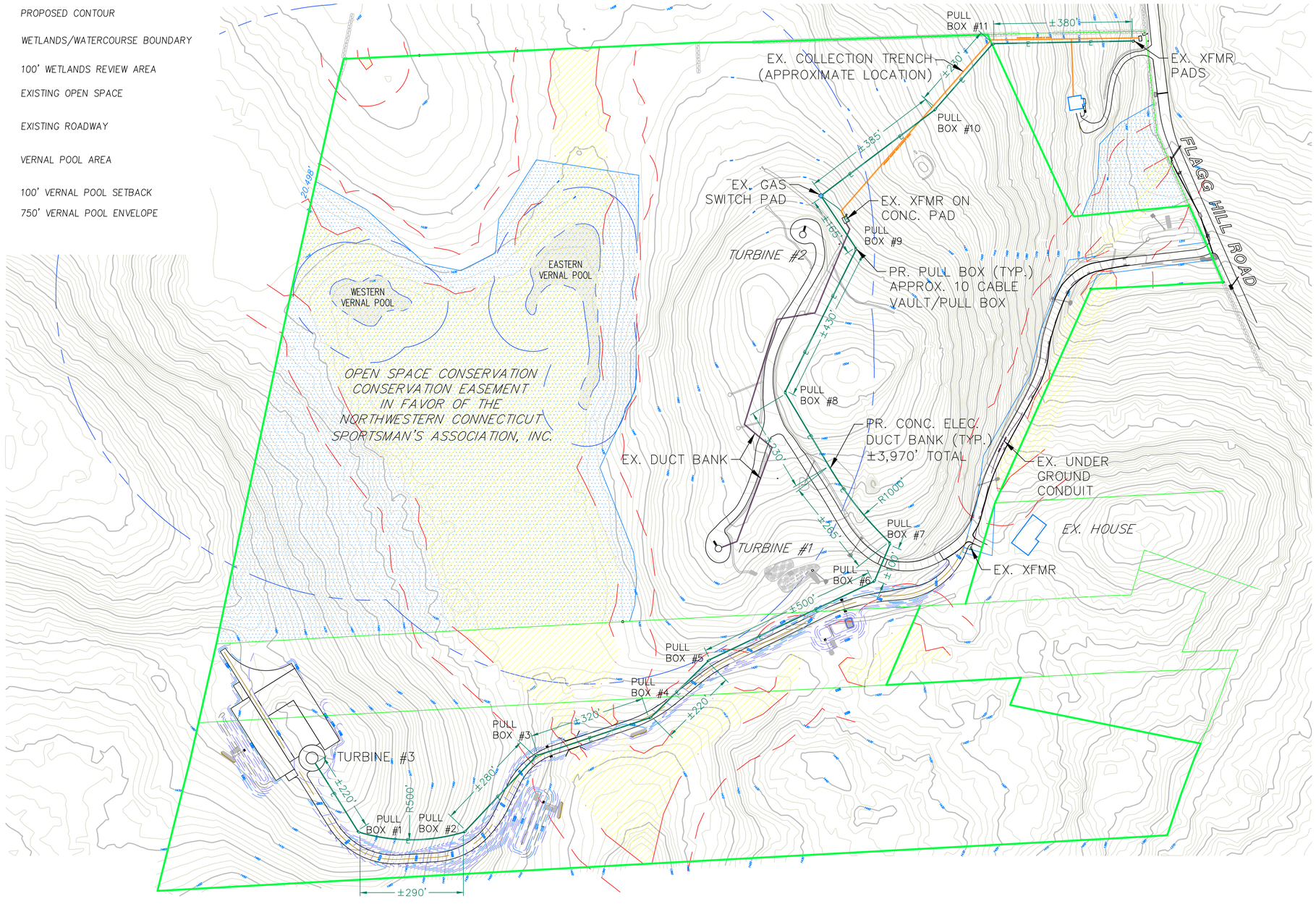
STATE OF CONNECTICUT
CURTIS C. JONES
No. 17208
LICENSED
PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	N.T.S
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	C605

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- WETLANDS/WATERCOURSE BOUNDARY
- 100' WETLANDS REVIEW AREA
- EXISTING OPEN SPACE
- EXISTING ROADWAY
- VERNAL POOL AREA
- 100' VERNAL POOL SETBACK
- 750' VERNAL POOL ENVELOPE



NO.	REVISION	DATE
1	ELECTRICAL ROUTING REVISED	17 DEC 19
2	REVISED PER CT SITING COUNCIL	07 FEB 20
	Previous Editions Obsolete	

0 60 150

1 inch = 150 ft.

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OVERALL ELECTRICAL SITE PLAN

WIND COLEBROOK SOUTH
FLAGG HILL ROAD
COLEBROOK CONNECTICUT

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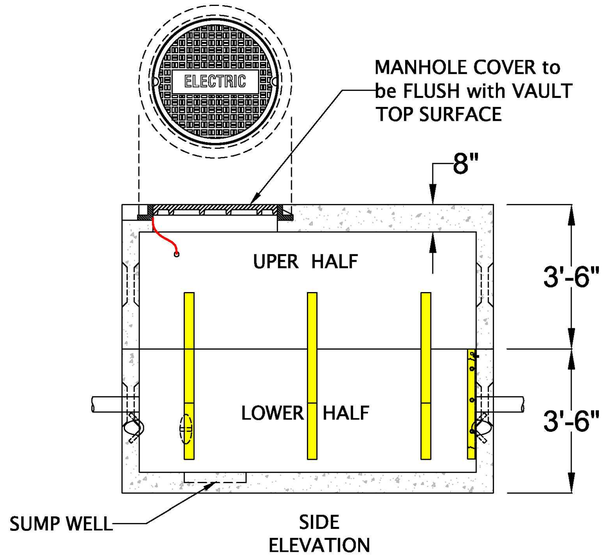
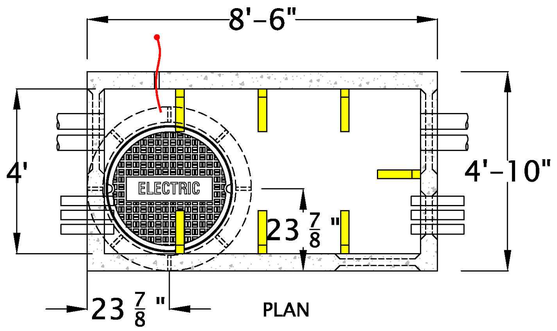
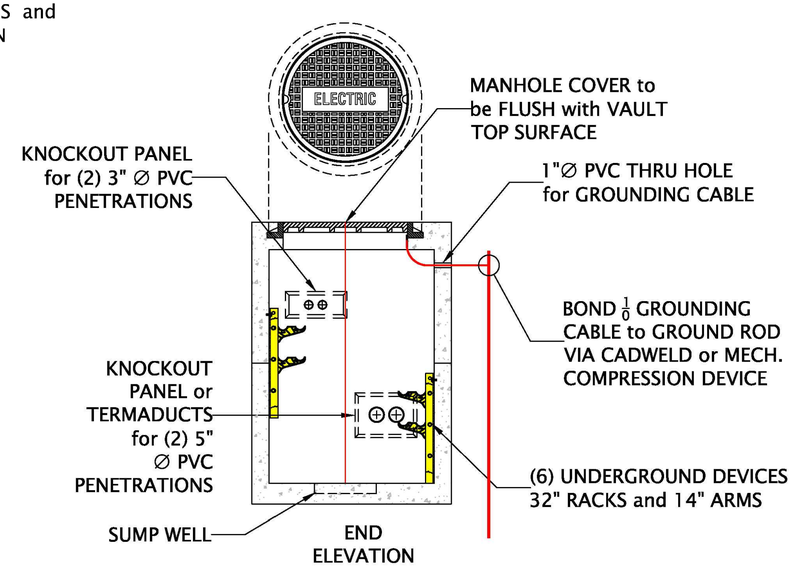
STATE OF CONNECTICUT CURTIS C. JOHNS No. 17208 LICENSED PROFESSIONAL ENGINEER

DRAWN: SC	APPROVED: CJ
SCALE:	1" = 150'
DATE:	15 NOV 19
PROJ. NO.:	3092 ARCH D_EJ
CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	E100

2 PART PRECAST REINFORCED PULL BOX: 4' x 7'8" x 6' ID
5" side walls, 6" floor and 8" roof - EQUIPPED with 36" ∅ MH COVER to be FLUSH
with VAULT ROOF - FITTED with (2) KNOCKOUT PANELS or TERM-A-DUCTS
SUITABLE for (2) 5"∅ and (2) 3" ∅ PVC CONDUIT PENETRATIONS and
1" ∅ PVC PENETRATION for GROUNDING CABLE as SHOWN







NOTES:

1. Manhole shall be designed for the following loads:
   a. The roof shall be designed for H20 loading over any square foot of roof area
   b. The walls shall be designed for the summation of the following:
      1) Soil pressure of not less than an equivalent fluid pressure of 33 pcf.
      2) Hydrostatic pressure of 5 feet measured from the base of the manhole.
      3) A surcharge of 2.5 feet of soil weighing 120 pcf.
   c. The floor shall be designed to resist the hydrostatic pressure resulting from the 5 -foot head called for in 1.b.2) above.
2. Concrete and concrete design shall be in accordance with ACI 318-1986.
3. Concrete shall have a minimum and maximum 28-day strength of 4000 and 5000 psi respectively.
4. Steel reinforcing bars shall conform to ASTM A615-1987A Grade 40 or 60. Welded wire mesh shall conform to ASTM A185-1985E1 or A497-198.
5. Pulling eyebolts, with a minimum 8000-pound pulling strength, shall be installed adjacent to conduit penetrations, typically in 6-8 places and shall be joined to the rebar.
6. Zinc alloy inserts 1/2 inch-13 X 1-1/2" shall be installed at 48 places.
7. Openings and penetrations shall be clear of reinforcement.
8. Construction joint shall be sealed with double Conseal (asphalt cement) or equivalent.
9. Manhole frame extension for (2) 38-inch cover (SPC E-945, SC 0174868) shall be cast into top section where shown. Manufacturer's identification and month/year when manufactured shall be legibly marked in/on concrete in the side of the 38-inch opening.
10. Top of MH shall have a smooth finish.
11. All exterior surfaces shall be double coated with waterproofing (bitumastic) compound.
12. All sweeps to be fiberglass or rigid steel conduit.
13. All conduit runs are to be straight.
14. Where an obstacle is encountered and/or a diversion is required a concrete thrust block of sufficient size and mass shall be incorporated into the run to prevent conduit or duct bank movement during cable installation.
15. Conduit penetrations may be specified in multiple vault locations not necessarily shown as 'typical'.
16. All vaults to be equipped with STANCOR SE-50 'OIL MINDER' Sump Pump.
17. All vaults to be grounded in 2 opposite corners with 1/0 bare copper conductor Cadwelded to 5/8" ∅ x 10' copper clad ground rods.

PRECAST REINFORCED PULL BOX

NO.	REVISION	DATE

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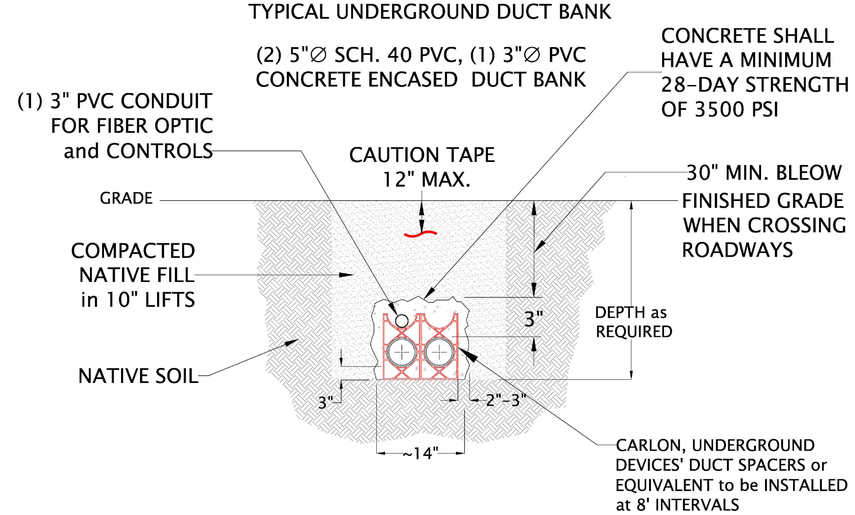
DRAWING NO.:	E101

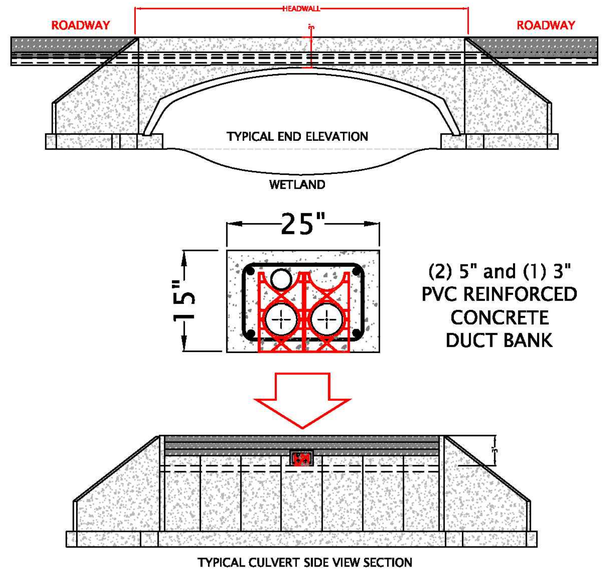
TYPICAL UNDERGROUND DUCT BANK



CONCRETE DUCT BANK DETAIL

SHOWING CONDUIT SPACERS

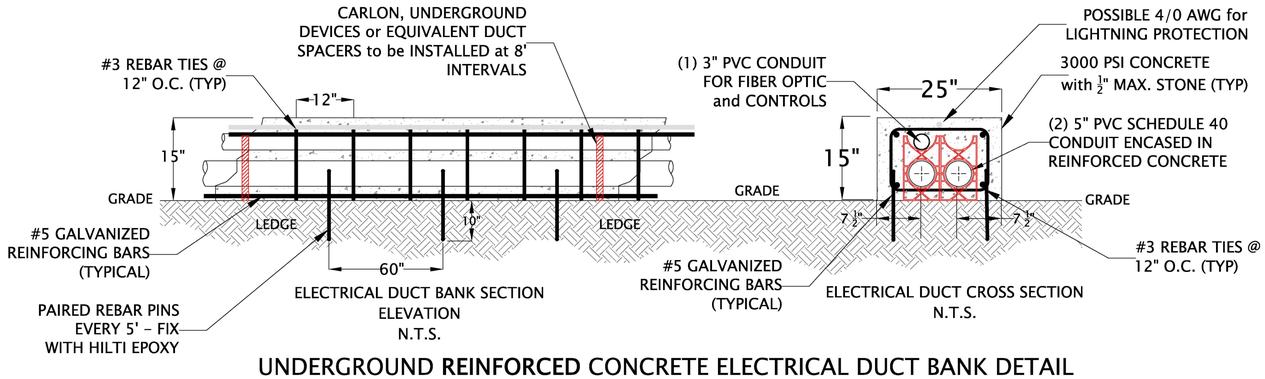
TYPICAL 25" WIDE TRENCH



ELECTRIC CONDUIT PLACEMENT ACROSS CULVERT

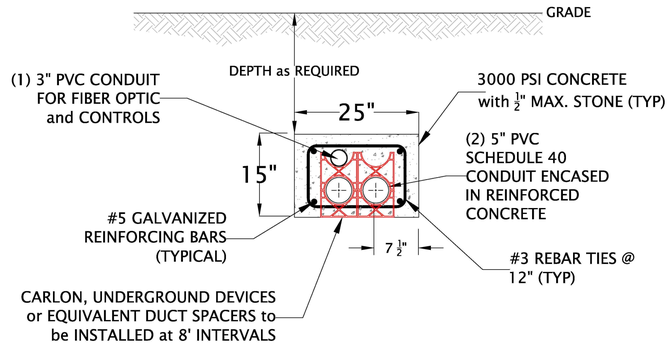
SECTIONS OF DUCT BANK IN AREAS OF SURFACE LEDGE SHALL BE CONSTRUCTED PER 'AT GRADE' **REINFORCED** CONCRETE DETAIL

N.T.S.



UNDERGROUND **REINFORCED** CONCRETE ELECTRICAL DUCT BANK DETAIL

N.T.S.



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CADD FILE NAME:	3092 ARCH D_EJ
DRAWING NO.:	E102

ICE SAFETY MANAGEMENT PLAN
WIND COLEBROOK SOUTH TURBINE 3

BNE will implement best practices and utilize the advanced capabilities of the Enercon 4.2 to enhance safety and minimize the potential for ice throw. Below are the step-by-step procedures that BNE would follow for Turbine 3 in the event of potential turbine blade icing, and the techniques that would be employed prior to restart:

- Wind Colebrook South will be monitored 24 hours per day, 7 days per week. The turbines are expected to be monitored remotely by Enercon and by onsite personnel during regular business hours and icing events.

- During winter months when there is a potential for an icing event, BNE will restrict access to the site and place fences and warning signs as appropriate for the protection of site personnel and the public.

- BNE and Enercon will be continuously monitoring weather forecasts for conditions which are favorable to producing icing events.

- The Enercon 4.2 is equipped with an ice detection system, which is based on a specially developed and patented characteristic curve analysis method. During operation, the ice detection system compares current operating data such as wind, power and blade angle with the recorded long-term mean values to determine if ice build-up on the wind turbine has changed the aerodynamic properties.

- If ice build-up is detected, the wind turbine will automatically shut down to reduce icing and prevent ice throw. The turbine can also be shut down remotely and manually on-site.

- BNE will also employ the optional blade heating system to reduce icing, prevent ice throw and enhance safety. The blade heating system will only operate after icing is detected and the wind turbine is automatically shut down. The blade heating system will automatically switch on until the ice is melted.

- The turbine can be restarted when the ice is melted in accordance the re-start procedure.

Re-start procedure:

- If the turbine is shut down due to icing, BNE will be responsible for monitoring the turbine to ensure the blade heating system has melted all ice from the blades before the turbine can resume normal operating conditions.

- BNE will thoroughly inspect the turbine to ensure that there is no remaining ice on the blades prior to restart.

- The turbine will remain shut-down until BNE can assess the operating conditions of the turbine. At that time, BNE may restart the turbine provided that the area affected by possible ice falling is appropriately monitored to prevent injury to people in the area or damage to property. A designated technician will be present at the turbine site before and after the iced turbine is started up. This individual will assess the suitability of restarting the iced turbine for any potential impact to adjacent individuals or property.

- In extreme conditions, BNE will curtail or shut down the turbine in advance of subjecting the turbine to ice build-up on the turbine blades and risk of ice throw. Depending on the wind direction and conditions of the icing event, the turbine may be manually positioned (by yawing) out of the upwind position to reduce direct ice build-up on the turbine and blades. The turbine will remain shut-down until weather conditions improve. BNE will thoroughly inspect and validate the turbine to ensure that there is no remaining ice on the blades prior to restart. A designated technician will be present at the turbine site before and after the turbine is started up to ensure safe operations.