City of Keene Planning Board

AGENDA

Monday, August 25, 2025 6:30 PM City Hall, 2nd Floor Council Chambers

A. AGENDA ITEMS

1) **Call to Order** – Roll Call

2) **Minutes of Previous Meeting** – July 28, 2025

3) **Extension Request**

   a) **PB-2025-01 – 2-lot Subdivision – Keene State College, 238-268 Main St** – Owner, the University System of New Hampshire, requests a first extension to the deadline to satisfy the precedent conditions of approval for the proposed 2-lot subdivision of the parcel at 238-260 Main St (TMP# 590-101-000) into two lots ~0.48-ac and ~0.46-ac in size. The property is located in the Downtown Transition District.

4) **Final Vote on Conditional Approvals**

5) Boundary Line Adjustment

   a) **PB-2025-16 – Boundary Line Adjustment – 124-126 & 130 Eastern Ave** – Applicant HG Johnson Real Estate, on behalf of owner Bishop 2024 Revocable Family Trust, proposes to transfer ~0.22-ac of land from the ~0.57-ac parcel at 130 Eastern Ave to the ~0.95-ac parcel at 124-126 Eastern Ave (TMP#s 588-031-000 & 588-032-000). Both parcels are located in the Low Density District.

6) **Public Hearings**

   a) **PB-2025-15 – Cottage Court Conditional Use Permit – Barn Conversion, 429 Elm St** – Applicant HG Johnson Real Estate, on behalf of owner JC&C Rentals LLC, proposes to convert a barn into 2 dwelling units on the property at 429 Elm St (TMP# 520-005-000). The parcel is ~0.48-ac and is located in the Low Density District.

7) **Continued Public Hearing**

   a) ***Continuation Requested*** **PB-2024-20 – Earth Excavation Permit Major Amendment & Hillside Protection Conditional Use Permit – Gravel Pit, 21 & 57 Route 9** – Applicant Granite Engineering LLC, on behalf of owner G2 Holdings LLC, proposes to expand the existing gravel pit located at 21 & 57 Route 9 (TMP#s 215-007-000 & 215-008-000). A

Hillside Protection CUP is requested for impacts to steep slopes. Waivers are requested from Sections 25.3.1.D, 25.3.3, 25.3.6, and 25.3.13 of the LDC related to the 250' surface water resource setback, excavation below the water table, toxic or acid forming materials, and the 5-ac excavation area maximum. The parcels are a combined ~109.1-ac in size and are located in the Rural District.

8) **Master Plan Steering Committee Referral: 2025 Comprehensive Master Plan –** The Master Plan Steering Committee voted to recommend that the Planning Board set a public hearing date for the adoption of the 2025 Comprehensive Master Plan, and refer the plan to City Council to endorse.

9) **Correspondence**
   a) Letter from Ariane Ice dated August 8th, 2025

10) **Staff Updates**

11) **New Business**

12) **Upcoming Dates of Interest**
   - Joint Committee of the Planning Board and PLD – September 8th, 6:30 PM
   - Planning Board Steering Committee – September 16th, 12:00 PM
   - Planning Board Site Visit – September 24th, 8:00 AM – To Be Confirmed
   - Planning Board Meeting – September 29th, 6:30 PM

B. MORE TIME ITEMS

1. Potential Modifications to the Site Plan Review Thresholds
2. Training on Site Development Standards – Snow Storage & Landscaping

C. ADJOURNMENT

City of Keene
New Hampshire

PLANNING BOARD
MEETING MINUTES

Monday, July 28, 2025 **6:30 PM** **Council Chambers, City Hall**

Members Present:
Harold Farrington, Chair
Mayor Jay V. Kahn
Councilor Michael Remy
Sarah Vezzani
Armando Rangel
Ryan Clancy
Kenneth Kost
Michael Hoefer, Alternate

Staff Present:
Mari Brunner, Senior Planner
Evan Clements, Planner
Megan Fortson, Planner

Members Not Present:
Roberta Mastrogiovanni, Vice Chair
Tammy Adams, Alternate
Randyn Markelon, Alternate
Stephon Mehu, Alternate

I) Call to Order – Roll Call

Chair Farrington called the meeting to order at 6:30 PM and a roll call was taken. Mr. Hoefer was invited to join the meeting as a voting member.

II) Minutes of Previous Meeting – June 23, 2025

A motion was made by Mayor Kahn to accept the June 23, 2025, meeting minutes. The motion was seconded by Councilor Remy.
Chair Farrington raised the following correction to Lines 140 and 141: change the sentence to indicate that SWRPC had already had their quarterly meeting and the Chair had already attended the meeting. Councilor Remy noted the Planning Board meeting was actually three days before the roundtable. It was agreed the sentence would be left as is. The motion carried on a unanimous vote.

III) Final Vote on Conditional Approvals

Chair Farrington stated this is a new, standing agenda item. As a matter of practice, the Board will now issue a final vote on all conditionally approved plans after all of the "conditions precedent" have been met. This final vote will be the final approval and will start the 30-day appeal clock. He asked staff whether there were any applications tonight that were ready for a final vote.

Ms. Brunner stated there is one application tonight that is ready for a final vote.
Boundary Line Adjustment Project PB-2025-10 for 37 and 38 Grimes Road.
There were four conditions precedent, including the owner's signature appear on the proposed plan; Submittal of four full size paper copies and a digital copy of the final plans; Submittal of a check to cover the cost of recording; Inspection of lot monuments by the Public Works Director or their designee. All of these conditions have been met.

A motion was made by Councilor Remy that the Planning Board issue final site plan approval for PB-2025-10. The motion was seconded by Mayor Kahn and carried on a unanimous vote.

IV) Extension Request

a) PB-2025-03 – Major Site Plan – Douglas Company Inc., 0 Black Brook Rd - Owner Douglas Company Inc., requests a first extension to the deadline to satisfy the precedent conditions of approval for the proposed construction of an ~98,323-sf office and warehouse building on two parcels at 0 Black Brook Rd (TMP#s 221-023- 000 & 221-024-000). The parcels are a combined ~5.33-ac in size and are located in the Corporate Park District.

Mr. John Noonan of Fieldstone Land Consultants addressed the Board on behalf of Douglas Company. He stated his client, Douglas Company, was looking for a time extension on the conditional approval.
He stated the applicant has almost all of the necessary items to meet the conditions of approval; however, tariffs have impacted their business, and they are waiting to see how much more of an impact tariffs are going to have on their operations.

A motion was made by Councilor Remy that the Planning Board grant a six-month extension to satisfy the precedent conditions of approval for PB-2025-03. The motion was seconded by Mayor Kahn.

The Mayor stated he has been in contact with the applicant and felt this is an unfortunate situation that the applicant is facing. The Mayor continued by stating this is a concern that has been shared with the congressional delegation and the Governor's Office. He hopes this situation would be resolved soon, because Douglas Company is an important business in Keene and has a huge economic impact for the City.

The motion for extension carried on a unanimous vote.

b) PB-2024-23 – Major Site Plan & Surface Water Protection Conditional Use Permit – Shooting Range, 19 Ferry Brook Rd – Owner Cheshire County Shooting Sports Education Foundation Inc., requests a first extension to the deadline to satisfy the precedent conditions of approval for the proposed modification to the approved site plan for the shooting range at 19 Ferry Brook Rd (TMP #214-021-000). A Surface Water Protection Conditional Use Permit was requested to allow a gravel shooting berm and other existing site features to be located within the 75' surface water buffer. The parcel is 55-ac in size and is located in the Rural District.

The Chair asked to be recused from this application.

A motion was made by Armando Rangel to elect Councilor Remy to serve as the Chair Pro-Tempore. The motion was seconded by Kenneth Kost and was unanimously approved.

Ms. Liza Sargent of SVE Associates, representing the Cheshire County Shooting Sports Education Foundation (CCSSEF), and Mr. Otto Busher of CCSSEF addressed the Board. Ms. Sargent stated that the applicant has met three out of the five conditions precent and are looking for a time extension, particularly for financial reasons, so that they can pay for the expense of the landscape security. She also added they could not replicate the wetlands in the winter and are going to address that during the summer.

A motion was made by Councilor Remy that the Planning Board grant a six-month extension to satisfy the precedent conditions of approval for PB-2024-23. The motion was seconded by Sarah Vezzani and was unanimously approved.

Chair Farrington rejoined the Board.

Item VI was moved up in the agenda.

V) Correspondence & Board Discussion – Alleged Violation of the Earth Excavation Regulations – Mr. James Manley of 67 Tyler Lane in Sullivan has submitted a complaint related to the visibility of the gravel pit located at 21 & 57 Route 9 (TMP#s 215-007-000 & 215-008-000) from the adjacent state highway. The Board will consider whether further investigation of the alleged violation is warranted and whether to delegate enforcement to Code Enforcement staff.

Mari Brunner, Senior Planner, addressed the Board and stated the Planning Board is the Regulating Body for earth excavation regulations, as stated in State Statute and the Local Ordinance, specifically in Article 25 of the Land Development Code. She stated the City received this complaint in May, which is for five separate sections of the earth excavation regulations that are cited in the complaint.
She stated Staff recommend that the Board delegate its authority of enforcement to Code Enforcement Staff, because there is an ongoing and active application for an expansion of the same gravel pit. She stated the reasoning for that is to keep the two items separate and reduce any potential conflicts of interest.
Alternatively, the Board could choose to adjudicate the complaint, in which case the Board would need to make a decision as to whether or not the Board wants to continue looking into this

and set a public hearing for the next meeting date. If the Board takes this approach, there would be a deliberation about the complaint as to whether or not there is a violation, and, if so, what the remedy would be.

Councilor Remy felt this Board is not set up to do enforcement. He continued by stating the City does have full time Code Enforcement Staff and felt it made sense to assign this task to Staff.

A motion was made by Councilor Remy that the Planning Board authorize Code Enforcement Staff to enforce the earth excavation regulations in Article 25 of the Land Development Code, including the current complaint and all future complaints in the chapter. The motion was seconded by Sarah Vezzani.

Mr. Clancy agreed with Councilor Remy. Mr. Clancy added if the Board does choose to delegate the enforcement of the current complaint to Staff, would Staff mention how the public can follow along for the minutes and to anyone watching at home. Ms. Brunner responded by saying to check the status, there is an online portal that the public has access to, and the public can also reach out to Community Development Staff as to an update.

The motion was unanimously approved.

VI) Public Hearings

a) SPR-440, Mod. 1 – Major Site Plan - Veterinary Hospital Addition, 686 Court St

– Applicant HDA Architects, Inc, on behalf of owner Court Street Veterinary Hospital, proposes to construct an ~2,092-sf addition and renovate the existing veterinary hospital located at 686 Court St (TMP# 228-008-000). The parcel is 4.2-ac in size and is located in the High Density District.

A. Board Determination of Completeness

Planner Evan Clements stated the applicant has requested exemptions from submitting a grading plan, landscape plan, lighting plan, and all technical reports. After reviewing each request, Planning Staff have made the preliminary determination that granting the requested exemptions would have no bearing on the merits of the application and recommend that the Board accept the application as complete.

A motion was made by Michael Hoefer to accept Application PB-2025-10 as complete. The motion was seconded by Councilor Remy.

The Mayor stated he agrees with Staff in waiving these three requirements. He drives past this site often and notices grading, landscape and lighting are in place and understands the request for this waiver.

Completeness waiver carried on a unanimous vote.

B. Public Hearing

Mr. Peter Hill from HDA Architects and Mr. Timothy Russett, one of the owners, addressed the Board. Mr. Hill stated the existing concrete block façade has faded and they would like to replace it with siding. The building would also have a new entrance, and the overall exterior of the building is being enhanced. The site would offer services, such as physical therapy, which is not available in the area right now.

Mayor Kahn stated one of the concerns many pet owners have in the community is relative to after hour calls for emergency services. He asked whether this expansion is something the applicant was planning on offering. Mr. Tim Russett, one of the owners, stated the Veterinary Hospital doesn't offer emergency services after hours currently and the proposed addition would not provide that service. This is not a service any facility in the area offers. He stated they have a working program with a Telemed company if someone chooses not to take their pet to emergency care. He stated the Telemed is referred to as Vet Triage and is a site that is available on their website. This site enables you to talk to a live veterinarian.
The Mayor asked whether this site expects to see an increase to traffic. Mr. Hill stated the volume will remain neutral. He stated this site has a grooming facility that is being taken out and explained grooming services brings in a lot more traffic compared to a typical vet service.

Staff comments were next. Mr. Clements addressed the Board and stated the subject parcel is an existing 4.2-acre lot located on the western side of Court Street and approximately 0.5 miles from the Cheshire Medical Center roundabout. The property abuts the Ashuelot River to the rear and contains an existing 7,106 square foot one story building that serves as the location of Court Street Veterinary Hospital. He noted the associated site improvements on the property include two street access points with driveways and a parking lot that wraps around the building and provides 33 parking spaces.

He went on to say that the existing non-conforming use of the property is a veterinary hospital, which is considered an Animal Care Facility under Article 8.3.2.B of the Land Development Code. The use is considered non-conforming as an Animal Care Facility is not normally allowed in the High-Density District. In 1984, the property received approval from the Zoning Board of Adjustment (ZBA) for a change of Nonconforming Use from a tree service business to a veterinary hospital.

In 1989, the property received approval from the ZBA for an Enlargement of a Nonconforming Use to build an addition. In 2020, again the property received approval from the ZBA for another Enlargement of a Nonconforming Use and in 2025 the property received approval from the ZBA for a third Enlargement of a Nonconforming Use, which is the reason the applicant is here before the Board this evening.

Mr. Clements went on to say the purpose of this application is to seek approval for the 2,100 square foot addition. No additional changes to the site are proposed besides the construction of the addition. The project meets the threshold for major site plan review, because this addition is greater than 15% of the gross floor area of the existing principal building.

With reference to drainage, sediment and erosion control, snow storage, landscaping. screening, lighting, sewer and water, filling and excavation, surface water and wetlands, hazardous and toxic materials and noise, the proposed changes to the site are minimal.

Those standards are either not applicable, or they meet the requirements as needed.

The traffic and access management, with the removal of the pet grooming facility that the applicant referred to, would result in a minimal net change in trips. The site is well designed to handle vehicular and pedestrian traffic through the site itself. The standard appears to be met.

Mr. Clements stated architectural and visual appearance is the focus of this application. The applicant has stated in their narrative that the proposed addition was designed to preserve the harmonious character of the existing building. The gable entry that is supported by tapered columns and large windows are incorporated to promote visual interest on the street facing facade. The applicant also notes that the design reduces the massive aesthetic effects and is harmonious with the City's distinctive architectural identity, unique character, and prevailing scale. Proposed materials include vinyl siding, fiber cement trim and decorative wood trusses.

He added the proposed color palette is a muted gray and cream. He noted
21.14.2 Visual Interest - Front facades and exterior walls shall be articulated to express an architectural identity to avoid a uniform appearance, and architectural details shall give the impression of being integral to and compatible with the overall design.

Architectural features shall conform to accepted architectural principles of design and construction.

Exterior materials, textures, and colors shall minimize visual aggressiveness and shall harmonize with the City's distinctive architectural identity and unique character. Surfaces with glossy finishes, reflective glass or dark tinted exteriors, or untreated aluminum, stainless steel, or metal exterior finishes shall be discouraged.

Modifications and additions to existing structures shall be harmonious with the character of the existing structure.

Mr. Clements stated Staff doesn't really weigh in on this but would encourage the Board to discuss the proposed architectural changes in the addition to see if those standards are met. He added Staff is recommending final approval on this application this evening, considering the nature of the lot, the minimal amount of earth work that will be required to construct the addition, no additional landscaping, no work in the public right of way, and no normal securities. The only outstanding item was the final plan sets signed by the property owner, which Staff did receive this evening. He added that as long as there are no changes necessitated from the Planning Board, Staff believe this application is ready for final approval.

The Chair asked for public comment. Ms. Paula Souza, Director of Sophia's Hearth and abutter to the north, addressed the Board. Ms. Souza stated, as a neighbor, they are in support of this application and wish the applicant well. With no further comments, the Chair closed the public hearing.

C. <u>Board Discussion and Action</u>

A motion was made by Councilor Remy that the Planning Board approve SPR-440, Mod. 1 as shown on the plan set identified as "Court Street Vet Hospital" prepared by HAD Architects, Inc. at varying scales dated June 20, 2025 and last revised July 10, 2025 with no conditions. The Councilor stated he sees no regional impact from this application. The motion was seconded by Sarah Vezzani.

The Chair stated he agrees with Councilor Remy that there is no regional impact and felt this was an attractive building.

Ms. Vezzani stated this site fits in with the neighborhood and is happy to see it come to fruition.

The motion carried on a unanimous vote.

b) PB-2025-14 – Surface Water Protection Conditional Use Permit – Eversource T198 Transmission Line – Applicant Normandeau Associates, Inc, on behalf of owner Public Service Company of New Hampshire (dba Eversource Energy), proposes to 1 of 83 The full agenda packet can be found on the Planning Board webpage at: keenenh.gov/planning-board. replace twelve structures along the T198 Transmission Line. The proposed work area begins north of NH Route 101 and continues south to the Swanzey town border. This project will temporarily impact ~102,332-sf of the Surface Water Protection Buffer for temporary access and work pad placement.

A. Board Determination of Completeness

Planner, Megan Fortson, stated the applicant has requested exemptions from submitting a grading plan, landscaping plan, lighting plan, and all technical reports. After reviewing each request, Planning Staff have made the preliminary determination that granting the requested exemptions would have no bearing on the merits of the application and recommend that the Board accept the application as complete.

A motion was made by Councilor Remy to accept Application PB-2025-14 as complete. The motion was seconded by Sarah Vezzani and was unanimously approved.

B. Public Hearing

Elizabeth Oliver, Normando Associates, and Jeremy Fennell, Licensing and Permitting for Eversource Energy, addressed the Board. Ms. Oliver stated they are before the Board regarding the T198 structure line maintenance project. She indicated they would like to replace 12 existing utility structures, which have reached the end of their expected lifespan. Impacts are related to the removal of the pole butts for the existing structures and the replacement of those poles with weathered steel metal structures. All other impacts will consist of temporary timber matting to allow access and construction of work pads necessary to complete the structure replacements.

Councilor Remy clarified the applicant just mentioned weathered steel and asked whether this was going to be different from what is seen today. Ms. Oliver stated what they have today are

wooden poles and these are being replaced with weathered steel poles. There will be some visual differences but not a lot. Mr. Fennell added the wooden poles in existence have been around since the 60's and are now weathered to a lighter brown, so the new ones will blend well. Mr. Kost asked whether the steel poles would add to the resiliency of the system. Mr. Fennell answered in the affirmative and stated the hope is that these new poles would have a life span of 50 years. The wood poles are susceptible to things like insects over time.

Councilor Remy asked whether there would be any interruption to service during construction. Mr. Fennell stated they are not anticipating any outages.

Chair Farrington noted the narrative indicated the work extends to the Swanzey border but noted 133 and 132 actually are in Swanzey. Mr. Fennell stated not all poles are being replaced; specifically, they are starting at structure 145, which is on the north side of Route 101, and ending on structure 133, which straddles Swanzey. The Chair asked whether the applicant anticipates any impacts to accessing the Keene State College athletic fields or the Rail Trail. Mr. Fennell stated they will be accessing Krif Road and they are working with Keene State College to minimize impact. He added this project has quite a few "time of year" restrictions for wildlife, which is pushing the project into the fall and winter seasons. He added there will be no impact on the rail trail.

Councilor Remy asked whether the impacted wetland area will be brought back to its original condition. Ms. Oliver answered in the affirmative.

Mr. Kost clarified that the impact to the 300 square feet of 75-foot wetland buffer wetland will not be mitigated. Ms. Oliver stated those are associated with placement of the poles and they are assuming a certain square footage of permanent disturbance for each pole footing; in addition, each structure has two pole footings.

The Chair commended the applicant for working with Keene State and encouraged them to do the same with the group who represent the Rail Trail.

Mayor Kahn asked what happens to the wires and whether they would be crossing the road. Mr. Fennell stated structure work is being done on both sides of the road but are not anticipating any kind of disruption to those roads. He added they might retain the service of police detail on Route 101 when transferring wires but are not anticipating replacing wires on those roads. The Mayor stated he is referring to the dashed line. Ms. Oliver stated the yellow dashed line represents the center line of the access route that the construction teams will follow for building the access roads. This has nothing to do with the wires. The plans do not represent wires as they are overhead and won't have any impact on road closures.

Staff comments were next.

Ms. Fortson stated, as was mentioned by the applicants, that the T198 transmission line runs through portions of Keene, Swanzey, Marlborough and Troy for about 11 miles and has a right of way width of 150 feet. Within the City of Keene, the proposed project area will cross through several different zoning districts, including the high density, commerce, industrial and agricultural districts. These different districts require different buffer widths from surface waters and wetlands. They range from 30 feet up to 75 feet.

Ms. Fortson noted this project is for the replacement of 12 existing utility structures and there are temporary impacts proposed of around 56,000 square feet to wetlands, 102,000 square feet to the surface water buffer area, permanent impacts of about 140 square feet in the wetlands and 300 square feet in the surface water buffer.

This application required the submittal of a conditional use permit under two different sections of Article 11, which are the surface water protection overlay district standards.
One of the standards is for the construction of the temporary access roads. The applicant would use this to access the work areas. The other standard is for the removal and replacement of new structures within the surface water buffer. Ms. Fortson noted any impacts to actual wetlands is reviewed through a wetlands permit by the State. The Board has purview over the surface water buffer, either 30 feet or 75 feet, and for consistency's sake, the applicant has provided a blanket 75-foot buffer through the entire work area.

In terms of regional impact, although the project is going to span municipal boundaries, this is an ordinary maintenance and repair project. Hence, Staff do not feel this project had the potential for regional impact.

Ms. Fortson stated the only departmental comments the application received were that under the State of New Hampshire Regulations, public utility transmission line associated structures are exempt from the local building permit process. However, portions of the structure are located within the floodplain, which will require the submittal of a floodplain development permit.

Ms. Fortson next reviewed the applicable standards. The first standard states that the *proposed use and/or activity cannot be located in a manner to avoid encroachment into the surface water protection overlay district.* Because this is an existing transmission line where work is being done, due to site constraints and the existing structure locations, it would be unreasonable to ask the applicant to relocate the entire utility line.

The second standard states that *encroachment into the buffer area has been minimized to the maximum extent possible.*
Ms. Fortson stated the applicant has indicated in the narrative that because the proposed project area is located within an existing right of way and current utilities are at the end of their life expectancy, there are inherent limitations in terms of the changes that can be made. The applicant will be using timber matting to establish temporary work pads and access routes to minimize impacts to the wetlands and upland structures. Access routes will be created to follow existing upland walking trails and structures will be shifted further away from the wetlands when possible.

The third standard relates to minimizing impacts to the surface water buffer.
The applicant has provided several examples of where they are trying to create wetland crossings in areas where there are already walking trails. They plan to move structures out of the surface water buffer. They are also going to be using timber matting to minimize disturbance and the wetlands areas will be reclaimed with an appropriate native seed mix.

Ms. Fortson stated the applicants did attend the Conservation Commission meeting last Monday and the feedback provided by the Conservation Commission was that they recommend that a

pollinator friendly seed mix be used and that any material brought onto the site be checked for invasive species.

Ms. Fortson reviewed the Board's last standard, which states that the Board can use certain items to determine whether or not the proposed encroachment will result in adverse impacts on the surface water resource. In that section of their narrative, the applicant provided an interesting breakdown of the wetlands that run through this area. They indicate that the wetlands consist of scrub shrub emergent and wet meadow wetlands. The wetlands north of Krif Road are hydrologically separate from the Ashuelot River due to the surrounding development. The wetlands south of Krif Road are part of the complex of flood plain wetlands contiguous to the Ashuelot River, which makes them more valuable.

Ms. Fortson stated the recommended motion included in the staff report is for final approval. The department has received final plan sets that have been signed by the property owner. She noted this type of application is not something the City would typically require security for due to the size of the area that is going to be affected as part of this work. She reviewed what is outlined in the motion.

Mr. Clancy asked whether it would be the City's responsibility to make sure the proper plantings have been planted at the conclusion of the project, or whether it would be up to the State. Ms. Fortson stated this would be the City's responsibility.

The Chair asked for public comment, with no comment from the public, the Chair closed the public hearing.

C. Board Discussion and Action

A motion was made by Councilor Remy that the Planning Board issue final approval on PB-2025-14 as shown on the plan set identified as, "T198 Maintenance Project" prepared by Normandeau Associates Environmental Consultants at varying scales on June 17, 2025 with the following conditions subsequent to final approval and signature of the plans by the Planning Board Chair:

1. Prior to the commencement of work, the following conditions shall be met:
    a. The submittal of approved permit numbers for all necessary local, state, and federal permit applications, including but limited to:
        i. An approved Floodplain Development Permit from the City of Keene Community Development Department.
        ii. Temporary Street Access Permits for each access point from the public right-of-way from the City of Keene Public Works Department.
        iii. Approved Wetlands, Alteration of Terrain, and Shorelands Permits from the New Hampshire Department of Environmental Services.
        iv. An approved General Permit from the US Army Corps of Engineers and a 2022 General Construction Permit from the US Environmental Protection Agency.
        v. Any other local, state, or federal permits deemed applicable to the proposed scope of work by the appropriate decision-making authority.
    b. The submittal of a Stormwater Pollution Prevention Plan to the Community Development Department for review and comment by the City Engineer.

The motion was seconded by Sarah Vezzaani.

Councilor Remy stated he agrees with the recommended conditions of approval. He felt the last pole is outside the Swanzey line and hence there was no regional impact.

The Chair asked whether the Conservation Commission's recommendation should be included in the recommended motion. Mr. Clancy felt this was a standard recommended motion but felt the applicant has worked in the State and is probably aware of what should or should not be planted and did not feel that recommendation needs to be included.

Mr. Kost stated this was standard operating practice but adding the pollinator friendly seed mix would be helpful. He noted the statement regarding invasive species and felt that should be included.

Councilor Remy amended his motion to add the following language: During construction, all materials brought in are inspected for invasive species of plants and animals and that remediation is done with local pollinator friendly seed mix.
The amendment was seconded by Sarah Vezzani.
The applicant was in agreement to the amendment.

The amended motion carried on a unanimous vote.

The Mayor asked the applicant for the status of approvals from the other communities.

Ms. Oliver stated they received special exception to work in the floodplain in Swanzey from their Zoning Board of Adjustment. They will be attending a public hearing in Troy at their Planning Board meeting in August. The Mayor asked for the timing of this project. Mr. Fennell stated some structure work would start in October and continue through the end of the year. Once the wetland permits are obtained, they will continue with the rest of the work next year, and finish around 2027. The agreement with the wildlife group is that there will be periods when the work is stopped.

The Mayor asked whether the Board has a basis to include some kind of acknowledgment from the college regarding the scope of work. Councilor Remy stated the applicant has indicated they are working with the college and that any impact to access will be mitigated. He added if the lines are not coming down, he wasn't sure how much impact there would be to this access. The Mayor felt there are cross country paths along that way and there is a parking lot that could be impacted due to the proximity to those lines and did not feel this is an onerous request to ask for this acknowledgement.

Ms. Fortson, in response, stated in 2021-2022, Keene had a few surface water protection applications for different transmission lines to replace wires and poles similar to what is proposed today. She stated it is not standard practice that the City would facilitate that type of communication between a property owner and another property owner who is doing the work. She noted Eversource is not the property owner, but there are easements in place.

She stated it is not the role of the Planning Board to try to facilitate communication between two different parties. She felt the Board can make it a recommendation as it is being discussed but did not feel it was appropriate to make it a condition of approval.

Councilor Remy agreed with Staff and felt the Board will be singling out this one user. He agreed that this project has a very large impact, based on the footprint, but stated he does not feel comfortable adding a condition.

Ms. Brunner stated, in looking back at applications before this Board, one application the Board had approved on Old Gilsum Road functions as a trail and is a popular Class 6 Road. She stated the City worked very closely with Eversource to understand the schedule and communicated that information to the public. She stated a potential motion could be to recommend clear communication with the City and then the City, when appropriate, could provide communication to the public in general, which would include Keene State College.

Chair Farrignton stated he agrees with Staff and Councilor Remy, and felt it was comparable to the application the Board recently approved on Island Street on a parcel of land which was used for construction storage. This was an area where kayakers would usually walk through so a note to communicate was not made a condition, but signs were located to warn the public.

A motion was made by Mayor Kahn that the Planning Board add an additional condition that the schedule of work be shared through public announcements and communication to abutters. The motion was seconded by Councilor Remy.

Mr. Rangel clarified Ms. Brunner had indicated communication would be provided to the City and the City would then notify abutters. However, the motion seems to indicate the applicant would notify the public and asked whether this was the Mayor's intention. Councilor Remy felt the motion leaves it open to the applicant to notify the City and then the City notify the public or the applicant would notify the public. The Mayor stated that was his intention.

The motion failed 1-7 vote with Mayor Kahn voting in favor.

The original motion for PB-2025-14 carried on a unanimous vote.

c) PB-2024-20 – Earth Excavation Permit Major Amendment & Hillside Protection Conditional Use Permit – Gravel Pit, 21 & 57 Route 9 – Applicant Granite Engineering LLC, on behalf of owner G2 Holdings LLC, proposes to expand the existing gravel pit located at 21 & 57 Route 9 (TMP#s 215-007-000 & 215-008-000). A Hillside Protection CUP is requested for impacts to steep slopes. Waivers are requested from Sections 25.3.1.D, 25.3.3, 25.3.6, and 25.3.13 of the LDC related to the 250' surface water resource setback, excavation below the water table, toxic or acid forming materials, and the 5-ac excavation area maximum. The parcels are a combined ~109.1-ac in size and are located in the Rural District.

Chair Farrington addressed the public and indicated all comments would be directed through the Chair. He indicated he would first invite direct abutters to address the Board, followed by residents of Keene and Sullivan, and then other interested parties. He stated, because of the number of people present today, he will be setting a three-minute limit for each speaker. Once everyone has had a turn, he would provide an opportunity for a speaker to address the Board a second time, only if they have new information to share.

Attorney Ariane Ice, representing G2 Holdings, addressed the Board first and stated she is surprised to hear all of the instructions about how the hearing will be moving forward tonight. She stated her understanding was that Staff were recommending a continuance of the application. She stated they have also submitted their own request for continuance. Attorney Ice explained Code requirement in Keene indicates if you are submitting an earth excavation permit, the applicant is required, at their expense, to pay for third party reviewers to assist Staff and the Board in reviewing the application. She noted they were before the Board a couple months ago and the applicant is anxious to get this completed application submitted with all the required information. However, at the 11th hour, the third-party reviewer, Fieldstone Land Consultants, has indicated that certain elements of the application were not under their purview and has requested a different third-party reviewer to be brought on board, which is a hydrogeologist. This work has begun but is not complete yet.

Attorney Ice noted the applicant has paid nearly $20,000 to these reviewers to complete the technical elements of this application. She indicated the new third-party reviewer, Sanborn, is still asking for additional data, and this is the reason for the continuance. She noted the applicant is not present today as they were requesting continuance. Attorney Ice asked that the continuance be granted and that no testimony is taken from members of the public. She noted one of the waivers as part of this application has been withdrawn, based on feedback from the third-party reviewers. She felt taking comments from the public is premature as they are not ready to response to those comments.

The Chair stated he is sympathetic to the applicant's situation and the additional cost being incurred. He stated the reason the Board is permitting public comment is because this meeting was noticed prior to becoming evident a continuance was going to be requested by the applicant. Attorney Ice felt this would be very unfair to the applicant, and stated this continuance was requested by staff. She felt they would now need to rebut testimony made tonight at next month's meeting. She felt it was prejudicial to hold a hearing and not permit the continuance, which the Board's Staff is recommending. She felt taking testimony from the public is denying the continuance. The Chair disagreed and added public comment is not a debate. She questioned if the Board was moving forward with a hearing, even though they were advised the application was going to be continued. She asked for Staff comment on this issue.

Councilor Remy felt it wouldn't be prejudicial to see what the concerns the public has and give the applicant a month to respond to those concerns.

Attorney Ice stated the application is in flux amd is constantly changing based on the third-party reviewers' comments. She stressed, again, that the applicant is not present, and their engineers are not present. The public has made their concerns known in the paper and felt the Board should tune out that noise and have it heard at the proper time. She felt the applicant has done everything the City has asked, and it seems extremely punitive for the Board to go against what

Staff has recommended. She stated elements of this application could change based on the City's reviewers who are also not here tonight.

Attorney Ice continued by stating when the public raise their grievances, there should be somebody in the room to address those concerns. She stated it seems like the only purpose is punitive to the applicant and to give a forum for the public to air grievances, which she felt was not the purpose of a public hearing that has been asked to be continued when all experts can be present at the next meeting.

The Chair asked for Staff comments. Ms. Brunner addressed the Board and indicated that Ms. Fortson was also present and is the Staff person who has been working closely with the applicant.
Ms. Brunner stated the only update from the last meeting, as the applicant indicated, is that the City's third-party reviewer, Fieldstone Land Consultants, an engineering and land surveying firm, made a recommendation in their review of the application materials. Fieldstone Land Consultants recommended the City hire an independent third-party hydrogeologist to review a couple aspects of the application, because they were outside their realm of expertise. Even though this consultant has expertise with earth excavation projects that they have reviewed for other applicants, in this instance there were questions around the water table heights, as well as the potential for acid or acid forming compounds being present in the material to be excavated. Those are areas that were outside of Fieldstone's realm of expertise.

Hence, on the Board's behalf, as required under the Board's regulations, the City contracted with Sanborn and Associates to do the hydrogeologic review. They started their work very quickly, but they haven't quite been able to review everything. As a result, Staff do recommend that the Board continue the application to allow time for that review to conclude. In addition, Staff is still waiting on information related to a revised stormwater management report.

Ms. Brunner noted each Board member has been provided with a packet that includes all of the waivers that were requested and the applicant's rationale for each waiver. There is a request to withdraw the waiver for the water table height. Staff has asked the hydrogeologist from Sandborn to review to make sure this is no longer needed. Staff is waiting on that analysis as well. Ms. Brunner added it sounds likely that this waiver can be withdrawn.

Mr. Clancy, with respect to regional impact, stated that last month, it was noted that the Town of Sullivan and Southwest Region Planning Commission were notified and asked if other communities were also notified. He felt with Roxbury, especially with water and the perennial streams, might also be included in regional impact and was wondering if they have been contacted.

Ms. Brunner stated the issue with regional impact was raised at the January Board meeting and at the time, the Board determined that the Town of Sullivan should be given abutter status due to the fact that it was proposed to be expanded into the Town of Sullivan. Southwest Region Planning Commission and the Town of Sullivan have been given abutter status. The Town of Roxbury was not included in that. She stated if the Board was to revise its determination of regional impact at this point, it would require additional notice.

The Chair asked if there was some definitive way to determine if Roxbury is impacted.

Ms. Brunner stated there is some basic guidance in the State Statutes, but it is up to the Board to decide and noted this question has already been discussed by this Board. Councilor Remy stated he agrees with Staff regarding that this issue has been discussed quite a few months ago and has received a lot of public scrutiny; he felt it would be unfair to include Roxbury at this time. Mr. Clancy stated he agrees, but because this issue has received a lot of public comment, residents in Roxbury might not have heard about this until recently and feel they could be impacted.

The Chair asked Ms. Brunner what the impact would be to add Roxbury as an abutter at this point in the process. Ms. Brunner stated the development of regional impact vote is supposed to happen before the Board opens the initial public hearing. She stated she wasn't sure what the process is for adding a town partway through the process. She stated it might involve sending notice to that town.
Ms. Brunner continued by stating as to Mr. Clancy's question about what the repercussions would be, the only body that can decide if this is a development of regional impact and who should be notified is the Planning Board. The Board has already taken a vote on the issue, even if another town feels like they should have been notified. There is no process for them to challenge that, because the Board has already considered the question and voted on it and gone through the proper procedure.
If the Board were to decide to add another town, Ms. Brunner stated her best guess would be to pause the process and notify the towns. Ms. Brunner stated she would like to consult with the City Attorney. Mr. Clancy felt that because Southwest Region Planning Commission was notified, it could be up to them to notify the appropriate towns. Ms. Fortson stated that Southwest Region Planning Commission has confirmed they have been working with smaller towns in the region.

The Chair asked for public comment next.

Mr. Jim Manley of 67 Tyler Lane, Sullivan, addressed the Board and stated he shares property boundaries with G2 Holdings of approximately one mile, which splits directly on to his southern and eastern borders. Mr. Manley referred to a mural on the north wall of the area, which dates back to 1775, honoring the men who mustered after the battles of Lexington and Concord. He referred to the history of Nims Hill and its attraction to this area and did not feel this hill should be exploited.

Mr. Manley stated he purchased his property in 2021. Prior to G2's proposal, he wanted to build his dream home on this site. This has now been put on hold. He felt 13 years of blasting would reduce his property value and he is not alone. He stated there are nearly 25 homes within the 2,500-foot radius of this proposal. If the Town of Roxbury is included, that number goes up.

Mr. Manley noted most of these 25 homes consist of retirees along with several young families with children. This proposal is a threat to children, pets, wildlife and quiet enjoyment.
He notes it is disconcerting that G2 does not carry liability insurance for potential damages to foundations and wells from 13 years of blasting, as evidenced by G2 operations in Gilsum.
All the residents in the impact area travel Route 9 daily. The intersection of Sullivan Road and Route 9 has been identified as a dangerous intersection, and the current improvement is quizzical at best. He added, in their initial application, G2 reported no increase in traffic to Route 9.
However, at the April 15th public hearing in Sullivan, Cody Gordon stated that there will be 60 to 75 truckloads per day.

Ms. Elizabeth Newcomb of 501 South Road, Sullivan, stated she is also a resident of Keene. She stated she purchased land in Sullivan to build her dream home for her family, but her plans are on hold due to this proposed expansion, which will negatively impact her land value. She expressed her concern that the current project has many violations that were only discovered upon review of the proposed expansion. She asked if the City was not monitoring violations and getting them remedied, what will happen if there continues to be violations and the project proceeds not in accordance with the proposed plan. This is what happened originally—the project was not constructed in accordance with many elements of the approved plan.

Ms. Newcomb stated she is also concerned about noise, the impact from blasting, potential hazards to her children with the multiple 50-foot cliffs in her backyard, as well as the visual impact along the road. She stated she understands violations are not being discussed tonight, but felt it was germane to the decision that the current site is in noncompliance of multiple regulations.

The Chairman next asked for comments from residents of Keene.

Mr. Mike Perez of 419 South Road, Keene, stated he is within approximately 4,000 feet of the proposed area. He asked that the Planning Board to keep in mind language in the land development code that exists to protect homeowners like himself from hazards, nuisance and detriment to property values. Mr. Perez stated, even though he is not a direct abutter, it is clear he will still be negatively affected by G2's proposal for expansion.

Mr. Davis Jacoway of 416 South Road, Keene, addressed the Board next and stated he is concerned about his well. He lives 1/8th of a mile from this site and is concerned about the disturbance of bedrock and how that would contaminate his well. He also expressed concern about the increase of dust that would enter his home. He questioned if blasting was permitted on Saturdays, which happened two months ago.

Ms. Jan Albano, Selectwoman for the Town of Roxbury, addressed the Board and stated they are aware that Roxbury does not have abutter status. She read the following statement on behalf of the Roxbury Select Board:
In 2022, G2 began operations at the gravel pit in Keene. They now propose to expand the gravel pit in Keene and Sullivan, although they will not be excavating on land in Roxbury. The site includes property in Roxbury and impacts not just the adjacent properties, but any property within hearing distance. G2 asked to expand because they realize they can't extract as much gravel from their existing site as previously thought; we now realize a few things too.
We reference the Fieldstone report that cites several instances of G2 failing to fulfill the requirements of their existing permit. Some of these have now been addressed or are being tended to, but would that be the case if they were not now seeking approval for their expansion?
We also call your attention to G2's narrative "detailing how each development standard has been addressed. In particular, Item 11 is the means to avoid and/or mitigate adverse impacts caused by dust, noise and traffic." Their response addresses dust and traffic. There is no mention of noise. Yet, noise is of a significant concern of Roxbury residents living within earshot of the existing pit. Those people are currently subjected to constant noise that disrupts the quiet and solitude that they used to enjoy, and if the exemption is approved, they can expect more of that

six days a week for the next 13 years. Other concerns that other people have talked about today include the potential for damage to foundations, contamination of wells and the failure of retention ponds.

We ask that you carefully weigh the impact of this proposed expansion on the residents of Keene, Sullivan, and Roxbury. There are multiple reasons to deny this request. What compelling reason is there to grant it?

Ms. Yulia Sokol of Sullivan addressed the Board next. Ms. Sokol stated she has lived in Sullivan for the last three years. Ms. Sokol referred to an article the City of Keene had sent out asking what the City should look like in 2040. She noted the article mentions six key pillars that reflect what matters most to Keene and Sullivan residents and residents of Monadnock region.
Ms. Sokol pointed out that Route 9 and 10 are the gateways to New Hampshire. Everybody who comes to visit our beautiful region and the state comes through Keene. Route 9 and 10 bring us people from Massachusetts, Vermont, New York, Connecticut and other states.
Local small-town population is declining, as per the last census. The goal of Sullivan and Keene residents and the small business community is to save our small towns from deteriorating effects of industrial scale mining and gravel operations on Route 9 and Route 10, which is ongoing by G2 Holdings and Gordon Services. The goal of Sullivan and Keene residents is, first, to make our towns a vibrant place to live healthier lives and thrive as a local community. Second, is to attract more residents, especially young families, to make Sullivan and Keene their forever home.

She noted the applicant's proposal affects nearly 31,329 residents from towns of Keene, Sullivan Gilsum, Surry, Nelson, Munsonville, Marlow, Stoddard, Harrisville, Roxbury and Marlborough. She indicated that quality of life, health implications, property values, property tax implications and school children attendance at local schools are a concern.

Jennifer Schmidt of 39 Old County Road, Gilsum, was the next speaker. Ms. Schmidt stated her property is directly across the valley from the current excavation site in Gilsum on Route 10. She stated she wakes up to the sound of hammering, blasting, beeping of trucks that goes on all day. She stated this goes on Monday through Saturday starting at 7:00 AM.

Ms. Schmidt stated she moved to this area three years ago, partly because of the quiet and the beauty of this area. She stated it is unlikely that they will be able to sell their property at this time with all the noise that they have to endure. She noted the blasting activity last week caused her well to spew black water. She complained to the select board and Cody Gordon sent people over. It was discovered she had bedrock in her well water and was told it was probably from a thunderstorm. Ms. Schmidt indicated again, this was the day after the blast.
In addition, she stated her pressurization tank no longer works. It worked the day before the blast but no longer worked after the blast. She cautioned allowing the expansion to move forward because of what the residents currently have to live through.

Ms. Keegan Brasso from Sullivan, NH stated the five-acre rule is what the applicant is requesting a waiver from. He noted preventing the expansion would protect nature, wildlife, people's ability to access and enjoy nature. G2 Holdings is requesting waivers to all these regulations. He stated he cares about noise and dust but specifically, the five-acre rule seems to prohibit expansion and asked that this rule stand.

Mr. Peter Vogel of Sullivan addressed the Board. He stated what concerns him is 13 years of blasting, which means 13 years of dust and disruption to wildlife, 13 years of disruption of quality of life for the residents—not just abutting properties, but in the entire area. He indicated these things are not in question.
He felt this project would leave a scar in this area and sees many problems with this project, with no benefit to the community but would greatly benefit the applicant.

Ms. Amelia Perrin of 98 Apple Hill Roard, Sullivan, addressed the Board next. Ms. Perrin stated she has lived in her property for nearly 12 years and also works for the Apple Hill Center for Chamber Music where she runs a summer music camp. She noted this project will profit G2 Holdings and Granite Engineering, whereas the adverse effects of this project will be borne by the local community. As such, felt there should be the highest possible standard set to mitigate these adverse impacts.

Ms. Perrin stated she is concerned about 13 years of sound and pollution for the music camp, as well as the community and neighbors. She stated she is also concerned about the air and water pollution this project will cause. Allowing this project to move forward with these waivers would be a failure to adequately protect the water and health of the local community.

Mr. Dwayne Edelton of 33 Lowell Drive, Gilsum, stated he is an abutter to this project. He stated this project has caused 64 cliffs around his property and a building that has been split in half, which the applicant won't take responsibility for. He indicated the applicant installed a blasting sensor on his property last week, which he indicated needs to be set on solid surface. Mr. Edelton stated the sensor was installed instead on his leach field, which he had requested that the applicant does not do. He showed the public present a rendering from Route 10 as to what his backyard looks like and indicated his property is severely damaged because of this work.
He noted G2 Holdings owns the land, but the blasting company has destroyed his barn and his house. They refused to admit to it and are requesting Mr. Edleton use his homeowners' insurance to cover the repairs to his property. He indicated that G2 Holding is not bonded or insured.

Mr. Edelton stated his neighbors have sinkholes on their property, damage to foundations and the noise and stress of blasting caused his neighbors to lose their exotic birds.

Attorney Friedrich Mukhal from Concord NH, representing Mr. Manley, addressed the Board next.
Attorney Mukhal stated he agrees with everything that has been stated today by the other speakers. He noted excavation pits are governed by a statute, RSA 155-E, but there are City regulations that are more stringent and referred to a couple of those requirements that exist in this City:
When an issue would present a potential hazard to human health, safety and welfare, or to the environment caused by adverse impacts associated with an excavation project.
Examples of such hazards include adverse visual impacts. The attorney handed *S*taff copies of meeting minutes from August 2022 when the Board first approved G2 Holdings application as well as the meeting minutes from the Sullivan Zoning Board of Adjustment from April 2025.

He called the Board's attention to page 15, which refers to what the applicant is indicating to Sullivan that they are going to do as part of the present application. They are going to blast this

mountain down, which will result in three steps of 50-foot ledges. He noted this is what the applicant would like the Board to approve. He added what G2 does not have to do is to reclaim ledges and 50-foot slopes.

Attorney Mukhal also referred to the City's Land Development Code Sections 25.2 C and E: Health, Safety, Welfare, Visual Impacts. The same would be true regarding the Land Development Code Sections 25.2-D: Noise. All abutters are complaining about noise, which is a big issue.

Mr. Andrew Newcomb of 64 Center Street, Sullivan, stated he has lived in Sullivan with his family since 2023. He stated they own a 209-year-old home on fieldstone foundation, fed by well water. He stated G2 has been expanding into the town and wants to continue to do so. Mr. Newcombe pointed out that they are now requesting waivers and exceptions so that they can essentially bypass the code that this town has when they have demonstrated in the past that they don't really care about those codes to begin with. He noted G2 has violated their plans, they have violated state law, town ordinances both in Keene and in Sullivan, and are now requesting waivers are asking that they will abide by those waivers. Mr. Newcombe indicated they have not given the city reason to trust them in the past and there is no reason to trust them in the future.

Mr. Joseph Anzo on 501 South Road, Keene, was the next speaker. Mr. Anzo stated, as Mr. Newcombe just indicated, G2 makes a lot of promises; however, G2 had repeated violations of municipal, state and federal regulations, many of which have not yet been remediated and may never be remediated. He noted they have advanced into Sullivan without seeking any approval at all. G2 is also in arrears on a number of tax obligations and, as others have noted, it is not actually possible to return the land to a pre-impact state in many cases, especially in the case of these 350-foot cliffs, millions of tons of bedrock are being removed from the site. Mr. Anzo noted what G2 is suggesting is that they replace at least a certain portion of this bedrock with loam on the side of an extremely steep hill that descends into a ravine with a pretty significant river at the bottom of it and into the Otter Brook watershed. The project has the potential to cause ferric oxide runoff into local and Keene waterways, especially with flooding becoming an issue nationwide.

He went on to say the gravel pit would cause dust trucks, mud, noise and traffic and will be the defining feature of Keene for all visitors for decades to come. He felt what is visible now is nothing compared to what's to come. Mr. Anzo stated we can already see the scar beginning to appear on the hillside as you come into Keene. There is going to be blasting for 13 years and taking down that hillside for 13 years. He questioned whether the City can trust G2 Holdings or will this become a constant problem for the City as it is already proven to be.

Mr. Manley addressed the Board again and reminded the Board that they could deny this application and technical data is not needed as the Board can see what is already happening. He referred to a rendering of what can be seen from Route 9, which he indicated was a direct violation of RSA 155 E and Keene's Ordinances.

He referred to the applicant's initial application where G2 reported no increase in Route 9 traffic. However, at the April 15th public hearing in Sullivan, Cody stated that there will be 60 to 75 truckloads per day. Mr. Manley noted what Cody Gordon failed to say is that truckload consists of two trips, inbound and outbound, resulting in 120 to 150 trips each day. He noted the

intersection of Sullivan Road and Route 9 was deemed hazardous. What the State implemented is not acceptable and questioned what impact this increase to traffic is going to have on this intersection.

Mr. Manley noted it is a documented fact that G2 Holdings conducted forestry and excavation operations in Keene and Sullivan without permits, as well as forestry operations in Brattleboro. State and Keene regulations state clearly that a gravel pit should not be visible except for the entrance to the operation. He noted this is clearly not the case.

Mr. Manley asked the Board how approval of this proposal is going to enhance property values of property owners in the region. He also questioned why Granite Engineering drew a one-mile perimeter when the City's regulations indicate it should be 2,500 feet, and this will impact nearly 25 homes.

Ms. Yulia Sokol of 40 Mine Road, Sullivan, addressed the Board again and stated her house shakes every time there is a blast, and she is not a direct abutter. She indicated she heard a recent study that indicated the only county that gained population in New Hampshire was Carroll County, and the reason for this is natural beauty, peace and a healthy environment that people are drawn to.
She stated she does not want to see people driving through Keene to get to better places and that is what this application would contribute to.

Mr. Edelton addressed the Board again and stated, with reference to blasting, blasts were felt for more than a mile and a half away and stated he has documentation indicating this. Mr. Edelton stressed that the applicant refuses to follow regulations. He talked about the lack of road maintenance from the applicant, which he has had to address with the town.

Ms. Liz referred to a few final thoughts. The original plans showed many instances of inaccuracy and misrepresentation, as highlighted in the Fieldstone report. At the meeting in Sullivan, the representatives from G2 consistently downplayed the negative impacts that residents would face from the operation and continue to need many waivers to regulations, which exist for a reason, just to be able to proceed with the operation.

She encouraged the Board to remember that these regulations are here for a reason: to protect the residents, community and wildlife. If G2 needs so many exceptions to the rules just to be able to operate, perhaps this isn't the correct location for this sort of operation, and certainly not the expansion.

Attorney Ice addressed the Board next and stated this is the most egregious example of lack of due process she has seen. She stated that they reject 99% of the complaints that have been made, as the public is raising items that have not been found to be violations. She raised her concern that the applicant was not able to make it to the meeting. She noted the process should have been the applicant's presentation, then Staff comments and opening the hearing up to the public for their comments. She indicated she spoke just to the continuance and then the public was given the opportunity to air their grievances. She felt this entire night should be stricken from the record.

She stated they will present their case in August and address the legitimate concerns the Staff and their engineers have raised and asked that the Board give this applicant the same due process afforded to other applicants.

Attorney Mukhal addressed the Board again and stated the applicant filed, at the 11th hour, a request for a continuance and then the applicant made the choice not to attend the meeting tonight. He noted the applicant's attorney is present, but perhaps the Engineers should have been here to answer questions, maybe not on the hydrology portion, but at least the portions that are before the board tonight. He added it is the applicant's burden to be ready to go and felt it was dangerous to make these arguments that it is prejudicial to the applicant for this Board to proceed when there was no decision on that motion to continue. He did not feel there was any procedural irregularity, except maybe for the hydrology component. He did not feel the testimony made today needs to be stricken and if this hearing is continued to August, the Board can hear about hydrology.

With that the Chair closed the public hearing.

A motion was made by Councilor Remy that the Planning Board continue PB-2024-20 to the Planning Board meeting scheduled for August 25th, 2025 at 6:30 PM in the City Hall, 2nd Floor Council Chambers. The motion was seconded by Sarah Vezzani.

The Mayor noted, as Staff had stated, there is information yet to be brought to the Board and information will be received next month, and felt the continuation was an appropriate action.

The Chair stated public input was important to the Board but not necessarily to have the same weight as professional engineers and analysis from licensed professionals in this field of hydrogeology. He stated he appreciates everyone's patience and civility throughout this process.

The motion carried on a unanimous vote.

VII) Master Plan Update (KeeneMasterPlan.com)

Ms. Brunner stated the July meeting was rescheduled for August 12. She indicated the consultants are working on a revised draft of the master plan, which will be sent out to Steering Committee members. She stated most of the edits at this point are not significant changes. It is more about reorganization, formatting items and a few "tweaks." She noted the biggest change Staff requested, with respect to the implementation section, is to make it more user friendly. She stated the draft should be ready for the next Master Plan Steering Committee meeting to get the adoption process started. She added the Board can expect, if the Master Plan Steering Committee is ready, they would send it back to the Board. At that point, the Board would refer it to Council for Council to endorse and then a public hearing will be scheduled.

Ms. Brunner called the Board's attention to a display on the second floor of different departments going back 100 years of community planning.

The Mayor stated he would not be present at the August 12th Steering Committee as this meeting falls during council break and expressed his disappointment.

The Chair asked whether the draft would be red-lined. Ms. Brunner stated it wont be red-lined but staff could submit to the Board a summary of the changes that have been made. With respect to the Mayor's comments, she apologized the way the timeline worked out and thanked the Mayor and the Chair for all their in-depth comments during the master plan process. She added when the draft is sent to the Board, the Mayor would have the opportunity to add comments that will be forwarded to the committee.

VIII) Staff Updates

a) Overview of Administrative and Minor Project approvals issued from January 1, 2025- June 30, 2025.

Ms. Brunner stated, with respect to an overview of administrative and minor project approvals, Staff have previously provided annual updates. After a previous conversation with this Board, Staff are now doing bi-annual updates of approvals that are being issued. She noted what is before the Board tonight
are more administrative approvals. There are no minor project reviews for the first six months (January – June). She stated the Minor Project Review Committee sees very few items, as most projects don't qualify for minor project review. Most applications might have a waiver request, the City might be a direct abutter, the City might hold an easement, etc. and hence are getting forwarded to the Planning Board for review.

She went on to say there have been a number of comments from Board members regarding the site plan review process and an item will be brought before the Board in the next couple of months.

b) b) Correspondence received from NH Dept. of Environmental Services regarding a Waiver Request for the Transportation Heritage Trail (informational).

Ms. Brunner stated if the Board had any questions regarding this correspondence the Board received, they should reach out to the City Engineer, Bryan Ruoff. The letter is on page 83 of the Board packet.

IX. New Business

None

X. Upcoming Dates of Interest

• Joint Committee of the Planning Board and PLD – September 8th, 6:30 PM
• Planning Board Steering Committee – August 12th, 12:00 PM
• Planning Board Site Visit – August 20th, 8:00 AM – To Be Confirmed
• Planning Board Meeting – August 25th , 6:30 PM

B. MORE TIME ITEMS

1. Potential Modifications to the Site Plan Review Thresholds
2. Training on Site Development Standards – Screening & Lighting C.

There being no further business, Chair Farrington adjourned the meeting at 9:17 PM.

Respectfully submitted by,
Krishni Pahl, Minute Taker

Reviewed and edited by,
Emily Duseau, Planning Technician

PB- 2025-01

Huntley Survey & Design, PLLC

New Hampshire & Vermont - Land Surveying * Wetlands Delineation & Permitting * Septic System Design

Two Lot Subdivision
Land of The University System of NH
238–260 Main Street, Keene, NH

August 11, 2025

RE: 180-Day Conditional Approval Extension Request

On behalf of the University System of New Hampshire, Keene State College, we respectfully request a 180-day extension to the conditional approval for the two-lot subdivision of 238–260 Main Street.

There are a few outstanding items noted in the conditional approval that remain to be addressed:

- Submission of four signed, full-size paper copies identical to the approved mylar plats
- Submission of a check for $51.00 payable to the City of Keene for recording purposes
- Verification that the proposed lot markers/monuments have been set

As the conditional approval is set to expire prior to the next Planning Board meeting, this request is being submitted in accordance with your requirements, along with the $25.00 extension request fee.

Sincerely,

Russell Huntley
NH Licensed Land Surveyor #877
Certified Wetland Scientist #156
Huntley Survey & Design, PLLC

RECEIVED
AUG 13 2025
By

659 West Road, Temple, New Hampshire 03084 * (603) 924-1669 Office * (603) 381-3227 Cell
Email: Russ@huntleysurvey.com

CITY OF KEENE
NEW HAMPSHIRE

MEMORANDUM

TO: Planning Board

FROM: Community Development Staff

DATE: June 13, 2025

SUBJECT: Agenda Item A.4 - Final Vote on Conditional Approvals

Recommendation:

To grant final approval for any projects that have met all their "conditions precedent to final approval."

Background:

This is a standing agenda item in response to the "George Stergiou v. City of Dover" opinion issued by the NH Supreme Court on July 21, 2022. As a matter of practice, the Planning Board issues a final vote on all conditionally approved projects after the "conditions precedent to final approval" have been met. This final vote will be the final approval and will start the 30-day appeal clock.

As of the date of this packet, there are no applications ready for final approval.

If any projects meet their conditions precedent between date of this packet and the meeting, they will be identified and discussed during this agenda item.

All Planning Board actions, including final approvals, are posted on the City of Keene website the day after the meeting at KeeneNH.gov/planning-board.

STAFF REPORT

PB-2025-16 – BOUNDARY LINE ADJUSTMENT – 124-126 & 130 EASTERN AVE

Requests:

Applicant HG Johnson Real Estate, on behalf of owner Bishop 2024 Revocable Family Trust, proposes to transfer ~0.22-ac of land from the ~0.57-ac parcel at 130 Eastern Ave to the ~0.95-ac parcel at 124-126 Eastern Ave (TMP#s 588-031-000 & 588-032-000). Both parcels are located in the Low Density District.

Background:

The subject parcels are located on the east side of Eastern Ave., in southeastern Keene, ~1,700 ft from the Marlboro St. intersection to the south and ~350 ft from the Bellevue St intersection to the north. The property at 124-126 Eastern Ave. contains an existing three-unit multi-family building, an existing single-family building, car port, shed, and associated site improvements. There is a stream that runs along the northwest corner of the parcel and under Eastern Ave. The property at 130 Eastern Ave. contains an existing single-family building, detached garage, shed, and associated site improvements.

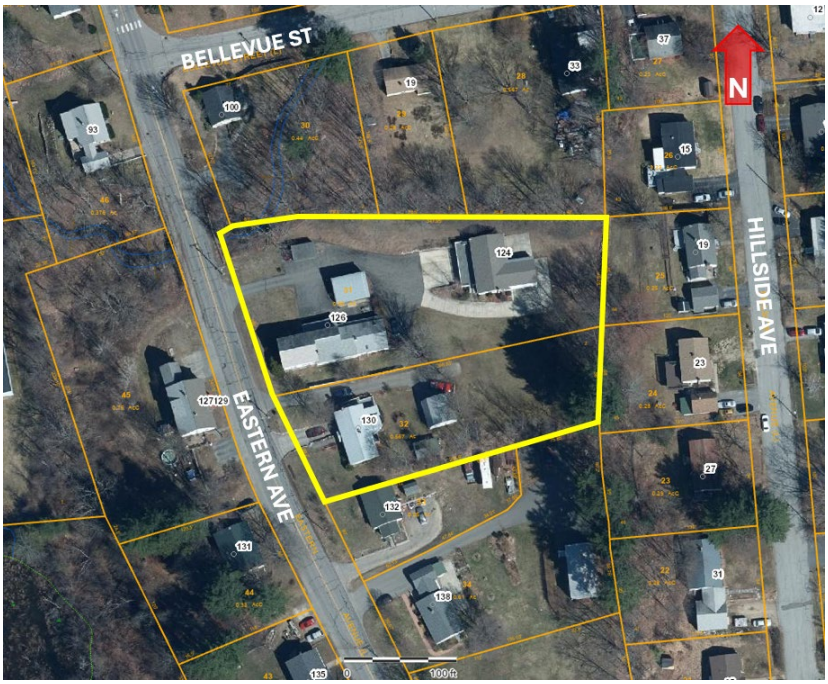


Fig 1: The subject properties at 124-126 & 130 Eastern Avenue outlined in yellow.

The purpose of the application is to adjust the common property boundary between the two subject parcels to accommodate the transfer of ~0.22 ac of land from 130 Eastern Ave. to 124-126 Eastern Ave. There is no new development proposed with this application.

Determination of Regional Impact:

After reviewing the application, staff have made a preliminary evaluation that the proposed boundary line adjustment does not appear to have the potential for "regional impact" as defined in RSA 36:55. The Board will need to make a final determination as to whether the proposal, if approved, could have the potential for regional impact.

Completeness:

The applicant has requested an exemption from submitting separate existing and proposed condition plans and all technical reports. After reviewing each request, Planning Staff have made the preliminary determination that granting the requested exemptions would have no bearing on the merits of the application and recommend that the Board accept the application as "complete."

Application Analysis:

SECTION 20.2.1 – LOTS: The applicant proposes to transfer ~0.22 ac of land from the ~0.57 ac parcel at 130 Eastern Ave to the ~0.99 ac parcel at 124-126 Eastern Ave. Following this transfer of land, both parcels will still comply with the zoning dimensional requirements for the Low Density District, as shown in Table 1. This standard appears to be met.

Table 1. Area of Land Affected by Proposed Boundary Line Adjustment		
Lot Sizes	**124-126 Eastern Ave.**	**130 Eastern Ave.**
	Low Density	**Low Density**
Required in District	10k SF (~0.23 ac)	10k SF (~0.23 ac)
Before BLA	0.99 ac	0.57 ac
Amount of Land Transferred	+0.22 ac	-0.22 ac
After BLA Parcel Size	**1.21 ac**	**0.34 ac**

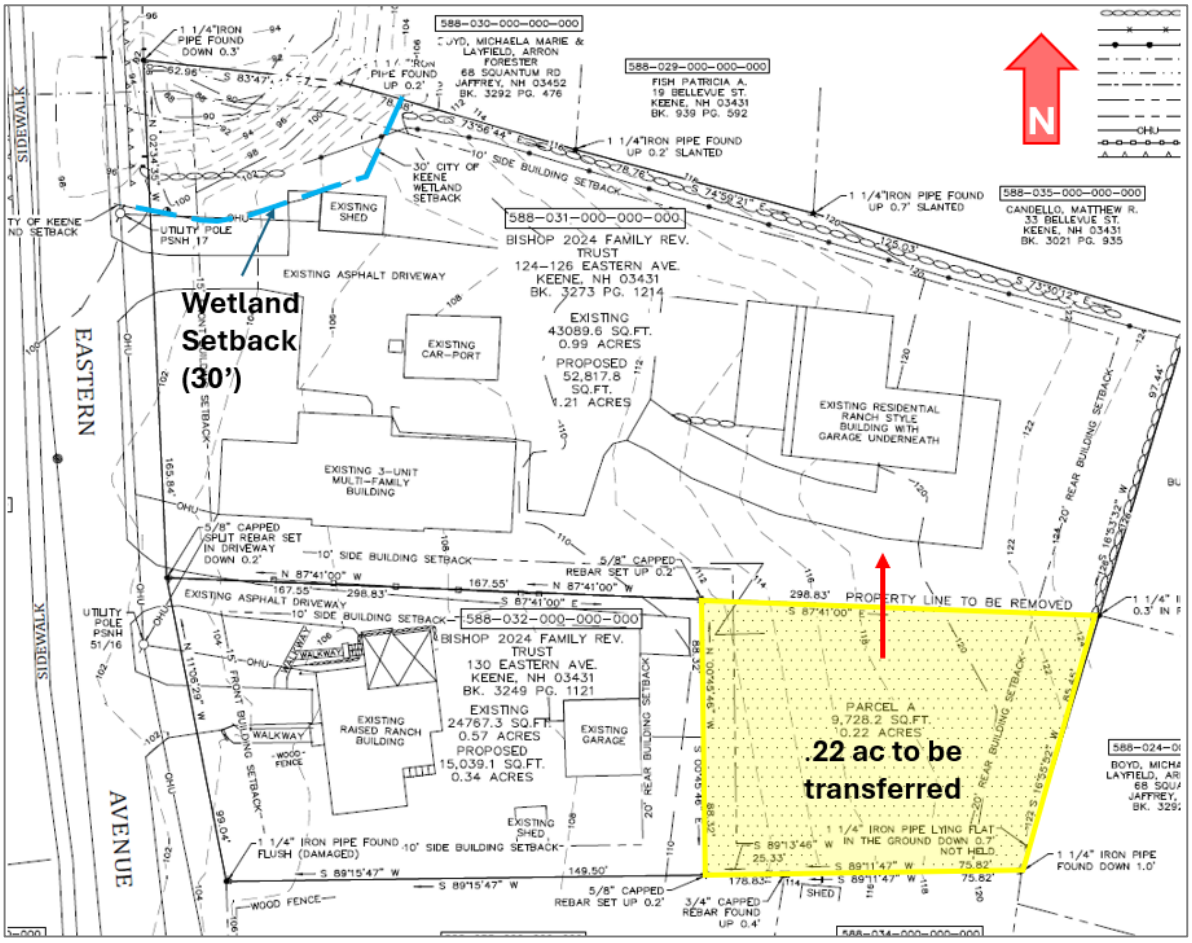


Fig 2: Proposed land to be transferred

SECTION 20.2.2 – CHARACTER OF LAND FOR SUBDIVISION: The plan shows the developed parcels gently sloping towards Eastern Ave with a low point located to the northern edge of 124-126 Eastern Ave. where the stream is located. A portion of the stream is located on the northwestern corner of the parcel, and the plan shows the delineated wetland and 30 ft surface water buffer. The portion of the land to be transferred is a gently sloping open lawn area. No development is currently proposed for this area. This standard appears to be met.

SECTION 20.2.3 – SCATTERED OR PREMATURE DEVELOPMENT: Both properties are developed with residential uses and associated site improvements. No new development is proposed with this application. It appears that this standard has been met.

SECTION 20.2.4 – PRESERVATION OF EXISTING FEATURES: There will be no impacts to existing site features as no additional development is proposed with the application. It appears that this standard has been met.

SECTION 20.2.5 – MONUMENTATION: The submitted plan shows that boundaries will be marked using 5/8" capped rebar posts that will be set at all corners. Planning Staff recommend that the Board include a condition of approval related to the inspection of the lot monuments or the submittal of a security to cover the cost of a lot monument inspection prior to the final approval of this application. This standard appears to be met.

SECTION 20.2.6 – SPECIAL FLOOD HAZARD AREAS: The plan states that the subject parcels are not located within a Special Flood Hazard Area as shown on the Federal Emergency Management Agency's (FEMA's) Flood Insurance Rate Maps (FIRM). This standard is not applicable.

SECTION 20.2.7 – FIRE PROTECTION & WATER SUPPLY: There is no development proposed that would require the installation of fire protection or additional water supply services. This standard is not applicable.

SECTION 20.2.8 – UTILITIES: Both subject parcels are served by municipal water and sewer service with no change proposed to those services. This standard is not applicable.

Recommended Motion:

If the Board is inclined to approve this request, the following motion is recommended:

> ***"Approve PB-2025-16 as shown on the plan identified as "Boundary Line Adjustment Plan" prepared by Envirespect Land Services, LLC at a scale of 1 inch = 20 feet dated June 28, 2025 and last revised August 2025 with the following conditions precedent prior to final approval and signature of the plans by the Planning Board Chair:***
>
> 1. ***Owners' signatures appear on the proposed BLA plan.***
> 2. ***Submittal of two (2) mylar copies of the plans.***
> 3. ***Submittal of a check in the amount of $51 made out to the City of Keene to cover recording fees.***
> 4. ***Inspection of the lot monuments by the Public Works Director, or their designee, following their installation, or the submittal of a security in a form and amount acceptable to the Public Works Director to ensure that the monuments will be set."***

City of Keene, NH

Planning Board
Boundary Line Adjustment (BLA) Application

If you have questions about how to complete this form, please call: (603) 352-5440 or email: communitydevelopment@keenenh.gov

SECTION 1: PROJECT INFORMATION

PROJECT NAME: Boundary Line Adjustment - 124-126 Eastern Ave & 130 Eastern Ave

NUMBER OF PARCELS AFFECTED: 2

PROJECT ADDRESS(ES): 124-126 Eastern Ave., 130 Eastern Ave

SECTION 2: CONTACT INFORMATION

PROPERTY OWNER #1	PROPERTY OWNER #2
NAME/COMPANY: Bishop 2024 Revocable Trust	**NAME/COMPANY:** Bishop 2024 Revocable Trust
MAILING ADDRESS: 124 Eastern Ave., Keene, NH 03431	**MAILING ADDRESS:** 124 Eastern Ave., Keene, NH 03431
PHONE: 603-748-1232	**PHONE:** 603-748-1232
EMAIL:	**EMAIL:**
SIGNATURE: Terry Bishop	**SIGNATURE:** Terry Bishop
PRINTED NAME: Terry Bishop, Trustee	**PRINTED NAME:** Terry Bishop, Trustee

APPLICANT / AUTHORIZED AGENT	FOR OFFICE USE ONLY:
NAME/COMPANY: George Hansel/HG Johnson Real Estate	**TAX MAP PARCEL #(s):** 588-031-000-(124-126 Eastern Ave) 588-032-000-(130 Eastern Ave)
MAILING ADDRESS: 17 Elm St, Suite B202, Keene, NH 03431	
PHONE: 603-903-3677	
EMAIL: george@hgjohnson.com	**PARCEL SIZE:** 0.95ac (124-126 Eastern) 0.57ac (130 Eastern)
SIGNATURE:	**ZONING:** Low Density (Both)
PRINTED NAME: George Hansel	**PROJECT #:** PB-2025-16

RECEIVED
JUL 16 2025
By

H.G. Johnson
REAL ESTATE

PB-2025-16

RECEIVED
JUL 16 2025
By

7/15/2025

City of Keene, Community Development Department
3 Washington St., Keene, NH 03431
Attn: Planning Staff, Planning Board Chair

Re: 124-126 Eastern Ave., 130 Eastern Ave. – Narrative for Boundary Line Adjustment Review

Project Name: Boundary Line Adjustment - 124-126 Eastern Ave., 130 Eastern Ave.

Chair Farrington and Planning Staff,

HG Johnson Real Estate, on behalf of the property owner Bishop 2024 Revocable Trust, submit the following information to aid in the granting of a boundary line adjustment between 124-126 Eastern Avenue (TMP#: 588-031-000-000-000) and 130 Eastern Avenue (TMP#: 588-032-000-000-000). Both parcels are owned by the Bishop 2024 Revocable Trust and have separate access/frontage along Eastern Avenue. Both properties are served by city water and sewer. 124-126 Eastern Avenue currently has (2) buildings; (1) three-unit multifamily structure, and (1) single-family home. 130 Eastern Avenue has a single-family home and a detached garage.

No new development is anticipated with this request. This boundary line adjustment will transfer 0.22 acres (9,728.2 square feet) from 130 Eastern Avenue to 126-130 Eastern Avenue. The adjusted lots will both conform to the Low-Density zoning district requirements outlined in the Land Development Code (LDC).

The sizes of the existing and proposed lots are as follows:

124-126 Eastern Avenue
Existing: 0.99 acres (43,089.6 square feet), Proposed: 1.21 acres (52,817.8 square feet)

130 Eastern Avenue
Existing: 0.57 acres (24,767.3 square feet), Proposed: 0.34 acres (15,039.1 square feet)

This boundary line adjustment as proposed complies with Article 20 of the LDC. As no new development or changes of use are being considered, the Site Development Standards outlined in Article 21 of the LDC do not apply to this request.

H.G. Johnson
REAL ESTATE

We request exemptions from providing an existing conditions plan or a proposed conditions plan. The lot line proposed for adjustment is highlighted on the attached survey prepared by Envirespect Land Services LLC and Dated June 28, 2023.

Thank you for your consideration of this application. Please feel free to reach out to me with any questions or concerns.

Best regards,

George Hansel, HG Johnson Real Estate

Submitted on behalf of:

Terry Bishop, Trustee, Bishop 2024 Revocable Trust

Attachments:

1) Boundary Line Adjustment Application
2) Abutter's list and mailing labels
3) Site Survey

REFERENCE PLANS

"LAGERBERG PROPERTY 126 EASTERN AVENUE, KEENE, N.H. PLAN FOR SUBDIVISION"; PREPARED BY ARMAND R. PAQUETTE; DATED FEBRUARY 28, 1975; SCALE 1"=50'; RECORDED AT CCRD IN PLAN BOOK 32 PAGE 63 (P0032–0063)

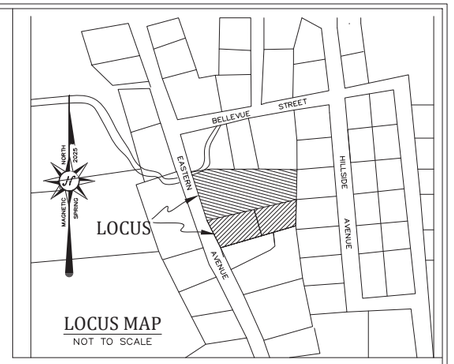
"LAGERBERG PROPERTY 126 EASTERN AVENUE, KEENE, N.H. PLAN FOR SUBDIVISION"; PREPARED BY ARMAND R. PAQUETTE; DATED FEBRUARY 28, 1975; SCALE 1"=50'; APPROVED BY KEENE PLANNING BOARD 1976? RECORDED AT CCRD IN PLAN BOOK 35 PAGE 69 (P0035–0069)

"LOCATION OF PURPOSED STREETS IN SUBDIVISION OWNED BY FORREST L. CAREY ";SCALE 1" = 50'; RECORDED IN PLAN BOOK 7 PAGE 53 (P0007–0053) AT THE CCRD.

"PROPOSED SUBDIVISION OF F.L. CAREY BELLEVIEW STREET EXTENSION WITH PLAN OF COMPLETE PROJECT WOODSIDE AND HILLSIDE AVENUES"; PREPARED BY G.G. PHILBROOK; DATED AUGUST 1956; SCALE 1"=50'; RECORDED IN PLAN BOOK 9 PAGE 67 (P0009–0067)AT THE CCRD.

LEGEND

- PIN FOUND
- REBAR SET
- UTILITY POLE
- GUY ANCHOR
- SEWER MANHOLE
- STONE WALL
- WIRE FENCE
- CHAIN LINK FENCE
- ORDINARY HIGH WATER MARK
- CENTERLINE OF STREAM
- CITY OF KEENE 30' WETLAND SETBACK
- APPROXIMATE ABUTTER LINE
- BUILDING SETBACK LINE
- OVERHEAD UTILITIES
- WHITE PLASTIC FENCE
- WOOD FENCE WITH STEEL POSTS



LOCUS MAP
NOT TO SCALE

588–046–000–000–000
LUSCOMBE, DAVID P.
93 EASTERN AVE.
KEENE, NH 03431
BK. 2582 PG. 842

588–030–000–000–000
BOYD, MICHAELA MARIE & LAYFIELD, ARRON FORESTER
68 SQUANTUM RD
JAFFREY, NH 03452
BK. 3292 PG. 476

588–029–000–000–000
FISH PATRICIA A.
19 BELLEVUE ST.
KEENE, NH 03431
BK. 939 PG. 592

588–035–000–000–000
CANDELLO, MATTHEW R.
33 BELLEVUE ST.
KEENE, NH 03431
BK. 3021 PG. 935

588–026–000–000–000
ROGERS, SCOTT A. & MAUREEN N.
15 HILLSIDE AVE.
KEENE, NH 03431
BK. 1486 PG. 836

588–031–000–000–000
BISHOP 2024 FAMILY REV. TRUST
124–126 EASTERN AVE.
KEENE, NH 03431
BK. 3273 PG. 1214

588–032–000–000–000
BISHOP 2024 FAMILY REV. TRUST
130 EASTERN AVE.
KEENE, NH 03431
BK. 3249 PG. 1121

588–045–000–000–000
SJD PROPERTIES LLC
PO BOX 381
SPOFFORD, NH 03462
BK. 3247 PG. 767

588–025–000–000–000
BUCKLEY, CONNOR & CHICKERELLA, RACHEL
19 HILLSIDE AVE
KEENE, NH 03431
BK. 3241 PG. 763

588–024–000–000–000
BOYD, MICHAELA MARIE & LAYFIELD, ARRON FORESTER
68 SQUANTUM RD
JAFFREY, NH 03452
BK. 3292 PG. 476

588–044–000–000–000
ROBLES, ADAM DANIEL
ROBLES, BRITTANY LEIGH
131 EASTERN AVE.
KEENE, NH 03431
BK. 3101 PG. 325

588–033–000–000–000
AUDET PHILIP
132 EASTERN AVE.
KEENE, NH 03431
BK. 3102 PG. 120

588–034–000–000–000
BALLOU, MARY B.
93 MATTHEWS RD.
SWANZEY, NH 03446
BK. 2944 PG. 744

588–023–000–000–000
PIGNATIELLO II, VINCENT M
HALVORSEN LAURA A.
27 HILLSIDE AVE.
KEENE, NH 03431
BK. 3151 PG. 643

1 1/4"IRON PIPE FOUND DOWN 0.3'
1 1/4"IRON PIPE FOUND UP 0.2'
1 1/4"IRON PIPE FOUND UP 0.2' SLANTED
1 1/4"IRON PIPE FOUND UP 0.7' SLANTED
3/4" CAPPED (LLS 963) REBAR FOUND UP 0.5' SLANTED
1 1/4" IRON PIPE FOUND UP 0.3' IN ROOT OF TREE SLANTED
1 1/4" IRON PIPE FOUND DOWN 1.0'
1 1/4" IRON PIPE LYING FLAT IN THE GROUND DOWN 0.7' NOT HELD.
5/8" CAPPED REBAR SET IN DRIVEWAY DOWN 0.2'
5/8" CAPPED REBAR SET UP 0.2'
3/4" CAPPED REBAR FOUND UP 0.4'
1 1/4" IRON PIPE FOUND FLUSH (DAMAGED)
UTILITY POLE PSNH 17
UTILITY POLE PSNH 51/16
UTILITY POLE PSNH 51/15

30' CITY OF KEENE WETLAND SETBACK
10' SIDE BUILDING SETBACK
15' FRONT BUILDING SETBACK
20' REAR BUILDING SETBACK
20' REAR BUILDING SETBACK
124-20' REAR BUILDING SETBACK
PROPERTY LINE TO BE REMOVED

EXISTING SHED
EXISTING ASPHALT DRIVEWAY
EXISTING CAR-PORT
EXISTING 3-UNIT MULTI-FAMILY BUILDING
EXISTING RESIDENTIAL RANCH STYLE BUILDING WITH GARAGE UNDERNEATH
EXISTING RAISED RANCH BUILDING
EXISTING GARAGE
EXISTING SHED
WALKWAY
WOOD FENCE
SIDEWALK
EASTERN AVENUE

EXISTING 43089.6 SQ.FT. 0.99 ACRES
PROPOSED 52,817.8 SQ.FT. 1.21 ACRES
EXISTING 24767.3 SQ.FT. 0.57 ACRES
PROPOSED 15,039.1 SQ.FT. 0.34 ACRES
PARCEL A 9,728.2 SQ.FT. 0.22 ACRES

N 87°41'00" W 167.55'
S 87°41'00" E 298.83'
N 87°41'00" W 167.55'
S 87°41'00" E 298.83'
S 83°47'44" E 62.96'
S 73°56'44" E 78.88'
S 74°59'21" E 78.76'
S 73°30'12" E 125.03'
S 16°53'32" W 97.44'
S 16°55'52" W 85.45'
N 02°34'35" W 165.84'
N 11°06'29" W 99.04'
N 00°45'46" W 88.32'
S 00°45'46" E 88.32'
S 89°13'46" W 25.33'
S 89°11'47" W 75.82'
S 89°11'47" W 75.82'
S 89°15'47" W 149.50'
S 89°15'47" W 178.83'

NOTES

THE PURPOSE OF THIS PLAN IS TO ADJUST THE BOUNDARY LINE BETWEEN PARCEL 588–031–000–000–000 AND 588–032–000–000–000.

OWNERS OF RECORD:

MAP 588–031–000–000–000
BISHOP 2024 REVOCABLE FAMILY TRUST
TERRY A. BISHOP &
FREDERICA A. BISHOP TRUSTEES
124–126 EASTERN AVE
KEENE, NH 03431
VOLUME 3273 PAGE 1214

MAP 588–032–000–000–000
BISHOP 2024 REVOCABLE FAMILY TRUST
TERRY A. BISHOP &
FREDERICA A. BISHOP TRUSTEES
130 EASTERN AVE
KEENE, NH 03431
VOLUME 3249 PAGE 1121

EXISTING AREA OF PARCEL 588–031–000–000–000: 43,089.6 SF OR 0.99 ACRES
EXISTING AREA OF PARCEL 588–032–000–000–000: 24,767.3 SF OR 0.57 ACRES

PROPOSED AREA OF PARCEL 588–031–000–000–000: 52,817.8 SF OR 1.21 ACRES
PROPOSED AREA OF PARCEL 588–032–000–000–000: 15,039.1 SF OR 0.34 ACRES

AREAS:

PARCEL 588–031–000–000–000
EXISTING: 43,089.6 SF OR 0.99 ACRES
PARCEL A: + 9,728.2 SF OR 0.23 ACRES
ADJUSTED: 52,817.8 SF OR 1.21 ACRES

PARCEL 588–032–000–000–000
EXISTING: 24,767.3 SF OR 0.57 ACRES
PARCEL A: – 9,728.2 SF OR 0.23 ACRES
ADJUSTED: 15,039.1 SF OR 0.34 ACRES

MAP AND LOT NUMBERS REFER TO THE CITY OF KEENE PARCEL MAPS.

BOOK & PAGE NUMBERS ARE FOR THE CHESHIRE COUNTY REGISTRY OF DEEDS UNLESS OTHERWISE NOTED.

ELEVATIONS ARE ASSUMED

CONTOUR INTERVAL IS 2.0'

CURRENT ZONING: LOW DENSITY

MIN. LOT AREA – 10,000 SQ.FT.
MIN. FRONTAGE – 60' FEET
MIN. WIDTH AT BUILDING LINE – 70 FEET

BUILDING SETBACKS:
FRONT – 15 FEET
SIDE – 10 FEET
REAR – 20 FEET

THE RIGHT OF WAY OF EASTERN AVENUE WAS DETERMINED BASED ON THE LAYOUT FROM THE COURT ON MARCH 24, 1868 RECORDED IN VOLUME 3 PAGE 185 ON FILE AT THE CITY OF KEENE CLERK'S OFFICE. THE ORIGINAL LAYOUT WAS FOR 50' WIDE AND ALSO MENTIONED IN THE WADSWORTH FILES FOR THE ORIGINAL LAYOUT.

JURISDICTIONAL WETLANDS WERE OBSERVED.

PARCEL 588–031–000–000–000 AND PARCEL 588–032–000–000–000 ARE NOT WITHIN THE 100 YEAR FLOOD PLAIN.

THE PARCEL MAY BE SUBJECT TO OTHER EASEMENTS AS THEY EXIST OF RECORD OR IN FACT. ENVIRESPECT LAND SERVICES DOES NOT INTEND OR REPRESENT THAT ALL RIGHTS AND EASEMENTS AFFECTING THE SUBJECT PROPERTY ARE SHOWN. A SPECIFIC AND THOROUGH TITLE EXAMINATION IS SUGGESTED TO DETERMINE THE NATURE AND EXTENT OF RIGHTS AND EASEMENTS AFFECTING THE SUBJECT PROPERTY.

THE LOCATION OF ANY UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. ENVIRESPECT LAND SERVICES MAKES NO CLAIMS TO THE ACCURACY OR COMPLETENESS OF THE UTILITIES SHOWN. FIELD VERIFICATION IS REQUIRED PRIOR TO ANY EXCAVATION ON THE SITE.
CALL DIG–SAFE @ 811.

NORTH 2025 MAGNETIC SPRING

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

_____ 2025
APPROVED AS A _____
IN ACCORDANCE WITH THE PROVISIONS OF RSA 674.
THE CITY OF KEENE PLANNING BOARD
BY _____, CHAIRMAN

OWNER CERTIFICATIONS

WE, TERRY A. BISHOP AND FREDERICA A. BISHOP, CERTIFY THAT WE ARE THE OWNERS OF PARCEL 588–031–000–000–000 AND PARCEL 588–032–000–000–000, AND APPROVE OF THIS BOUNDARY LINE ADJUSTMENT.

TERRY A. BISHOP DATE

FREDERICA A. BISHOP DATE

WETLAND DISCLOSURE:

JURISDICTIONAL WETLAND DELINEATION WAS COMPLETED IN THE AREA(S) SHOWN IN THE SPRING, SUMMER, FALL, WINTER OF 20__ ACCORDING TO THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2, JANUARY 2012 (ERDC/EL TR–12–1)

STATE OF NEW HAMPSHIRE JON C. BUSCHBAUM CERTIFIED WETLAND SCIENTIST No. 210

SURVEYOR'S CERTIFICATION

THIS SURVEY IS THE RESULT OF A RANDOM TRAVERSE USING AN ELECTRONIC TOTAL STATION AND MEETS THE MINIMUM REQUIREMENTS OF AN URBAN SURVEY AS SPECIFIED IN NH LAN TABLE 500.1.

I HEREBY CERTIFY THAT THIS PLAT CONFORMS TO ALL APPLICABLE LOCAL ZONING ORDINANCES AND RULES.

STATE OF NEW HAMPSHIRE No. 01061 JON C. BUSCHBAUM LICENSED LAND SURVEYOR
SIGNATURE

NO.	DATE	REVISION	BY
1.	8/2025	UPDATED WETLAND INFORMATION	JCB

JOB NO: 1140 SURVEY DATE: 5/1/2025 FB: 3/19–20

BOUNDARY LINE ADJUSTMENT PLAN

588–031–000–000–000 124–126 EASTERN AVE. KEENE, NH 03431
588–032–000–000–000 130 EASTERN AVE. KEENE, NH 03431

DATE: JUNE 28, 2025 SCALE: 1"=20'

PREPARED FOR & OWNED BY:
BISHOP 2024 REVOCABLE FAMILY TRUST

ENVIRESPECT LAND SERVICES, LLC
80 MURDOUGH HILL ROAD
NELSON, NEW HAMPSHIRE 03457
Tel. (603) 847-9984

SHT 1/1

STAFF REPORT

PB-2025-20 – COTTAGE COURT CONDITIONAL USE PERMIT – 429 ELM ST

Request:

Applicant HG Johnson Real Estate, on behalf of owner JC&C Rentals LLC, proposes to convert a barn into 2 dwelling units on the property at 429 Elm St (TMP# 520-005-000). The parcel is ~0.48-ac and is located in the Low Density District.

Background:

The subject parcel is an existing 0.48 ac lot located on the eastern side of Elm St. directly across the street from Fuller Elementary School and ~330 ft from the Timberlane Dr. intersection. The property contains three existing detached single-family residences, a shed, barn, and associated site improvements including a U-shaped gravel driveway with two street access connections.

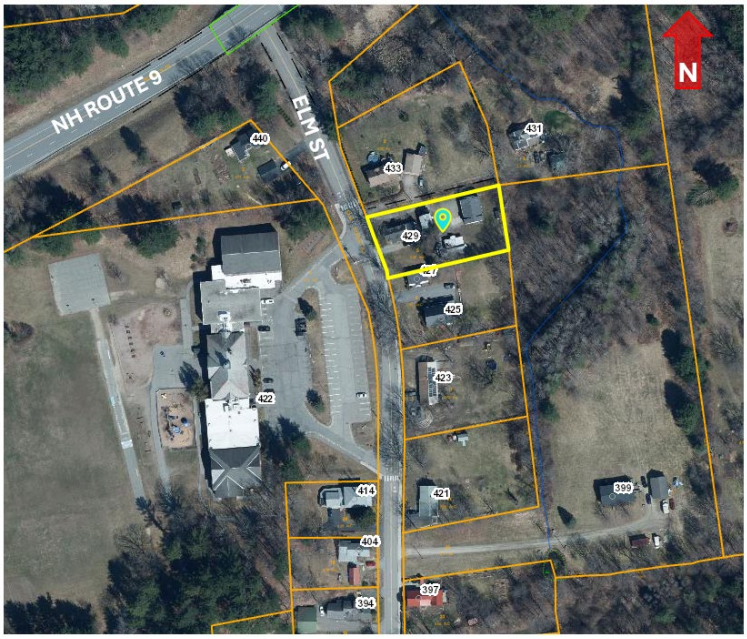


Figure 1. Aerial image of 429 Elm St. (outlined in yellow).

The purpose of this application is to convert the existing ~1120 SF barn into a duplex with a two bed, one bath unit and a one bed one bath unit. This will increase the total count of residential units on the property to five units. The property contains eight existing parking spaces where only five spaces are required. There is no proposed alteration to site besides the barn conversion. This project does not meet the threshold for site plan review.

Determination of Regional Impact:

After reviewing the application, staff have made a preliminary evaluation that the proposed duplex does not appear to have the potential for "regional impact" as defined in RSA 36:55. The Board will need to make a final determination as to whether the proposal, if approved, could have the potential for regional impact.

Completeness:

The applicant requests exemptions from submitting separate existing and proposed conditions plan, a grading plan, a lighting plan, a landscaping plan, and all technical reports. Staff recommend that the Board grant these exemptions and accept the application as "complete."

Application Analysis: The following is a review of the Cottage Court Overlay requirements.

17.5.1 Development Types Allowed

The proposal is to convert an existing barn into a duplex. The development types allowed under the Cottage Court Overlay for the Low-Density Zoning District include single-family, duplex, triplex, townhome, and dwelling above ground floor. The three existing detached single-family units were constructed between 1936-1940. The existing development pattern of the site is considered legal non-conforming as multiple principal uses are not permitted on a lot in a residential zoning district. Approval of the Cottage Court Conditional Use Permit will bring the property into conformance with the City's Zoning Regulations in terms of allowed uses. All requirements appear to be met.

17.5.3 Conditional Use Permit Standards

A. Dwelling unit size: This standard requires a maximum average size of 1,250 SF gross floor area (gfa) and a maximum building footprint of 900 SF per unit. The proposed project will result in an average gfa of 900 SF per unit with 5 dwelling units. The total building footprint of all existing buildings is 3,185 SF with an average of 637 SF per unit. Each building footprint appears to be less than 900 SF. This standard has been met.

B. Parking: This standard requires a minimum of one parking space per unit and a maximum of one parking space per bedroom. Each unit within the property has access to one of the eight existing parking spaces on site. This standard has been met.

C. Building Separation: All buildings are existing on site. The conversion of the barn to a duplex will require a building permit application that meets all applicable building, fire, and life safety codes. This standard has been met.

D. Driveways: The property contains an existing driveway that appears to be at least 20 ft wide to accommodate vehicular traffic to parking area. This standard appears to have been met.

E. Internal Roads: No internal roads are proposed; this standard does not apply.

F. Screening: This standard states that either a six-foot tall fence or a landscaped buffer is required for screening if the proposed building type (not density) is more intense than the adjacent building type. The proposed conversion of an existing barn to a duplex with no significant changes to the overall site does not constitute a more intense building type to the surrounding properties. This standard does not apply.

17.5.4 Architectural Guidelines

This section includes guidance to promote developments that are respectful of the context of the surrounding neighborhood. Photos of the existing barn and the other buildings on the property are included below.

Figure 2. Picture of existing barn

Figure 3. Picture of site from Elm St.

Figure 4. Picture of single-family unit 2

Figure 5. Picture of single-family unit 3

The applicant proposes the conversion of the existing barn into a duplex. The conversion will include the removal of the garage doors, adding new entrances to the western side of the building, enlargement of the existing dormers, and the installation of new insulated windows. The overall architectural style of the building is not proposed to be altered. The Board will need to determine if this standard has been met.

Recommended Motion:

If the Board is inclined to approve this request, the following motion is recommended:

> **Approve PB-2024-15 as shown on the site plan identified as "429 Elm Street, Keene" prepared by H.G. Johnson Real Estate at a scale of 1 inch = 15'8" dated July 8, 2025 and in the application materials received July 9 2025, and August 4, 2025, with the following conditions:**
>
> 1. **Prior to final approval and signature of the plans by the Planning Board Chair, the following conditions shall be met:**
>   a. **Owner's signature appears on the site plan.**
>   b. **Submittal of five (5) paper copies and one digital copy of the site plan.**

Authentisign ID: 3B30A33E-E45C-F011-8F7C-000D3A8A9962

City of Keene, NH

Cottage Court Conditional Use Permit (CUP) Application

If you have questions about how to complete this form, please call: (603) 352-5440 or email: communitydevelopment@keenenh.gov

SECTION 1: PROJECT INFORMATION

PROJECT NAME: 429 Elm Street

NUMBER OF NEW DWELLING UNITS PROPOSED: 2

(Please note: Proposals that include the creation of 5 or more new units will require concurrent Major Site Plan review. See the Major/Minor Site Plan application for additional information.)

PROJECT ADDRESS(ES): 429 Elm Street
Keene, NH 03431

DOES THIS PROJECT INCLUDE A PROPOSAL TO SUBDIVIDE ONE OR MORE PARCELS?

☐ YES
☐ NO

(If yes, a Subdivision application will need to be submitted and reviewed currently with the Cottage Court application. See the Article 20 of the Land Development Code (LDC) for additional information.)

AVERAGE GROSS FLOOR AREA OF ALL PROPOSED UNITS *(In SF):* 900

SECTION 2: CONTACT INFORMATION

PROPERTY OWNER	APPLICANT
NAME/COMPANY: Cheryl & Joe Bagster/JC&C Rentals LLC	**NAME/COMPANY:** JC&C Rentals LLC
MAILING ADDRESS: 83 Eastern Ave. Keene, NH 03431	**MAILING ADDRESS:** 83 Eastern Ave. Keene, NH 03431
PHONE: 603-313-5909	**PHONE:** 603-313-5909
EMAIL: jccb00@aol.com	**EMAIL:** jccb00@aol.com
SIGNATURE: Authentisign Joe and Cheryl Bagster	**SIGNATURE:** Authentisign Joe and Cheryl Bagster
PRINTED NAME: Joe and Cheryl Bagster	**PRINTED NAME:** Joe and Cheryl Bagster

AUTHORIZED AGENT (if different than Owner/Applicant)	FOR OFFICE USE ONLY:
NAME/COMPANY: George Hansel/HG Johnson Real Estate	**TAX MAP PARCEL #(s):** 520-005-000-____-____
MAILING ADDRESS: 17 Elm Street, Suite 202B, Keene, NH 03431	____-____-____-____-____
PHONE: 603-903-3677	**PARCEL SIZE:** 0.48
EMAIL: george@hgjohnson.com	**ZONING DISTRICT:** Low Density
SIGNATURE: Authentisign George Hansel	**PROJECT #:** PB-2025-15
PRINTED NAME: George Hansel	**DATE STAMP:** RECEIVED JUL 09 2025 By

Authentisign ID: 3B30A33E-E45C-F011-8F7C-000D3A8A9962

PB-2025-15

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JUL 09 2025
By

H.G. Johnson
REAL ESTATE

7/8/2025

City of Keene, Community Development Department
3 Washington St., Keene, NH 03431
Attn: Evan Clements, Community Development Department

Re: 429 Elm Street – Narrative for Cottage Court CUP Review
Project Name: 429 Elm Street Project

Mr. Clements,

HG Johnson Real Estate, on behalf of the property owner JC & C Rentals, submit the following information to aid in the granting of a conditional use permit (CUP) to utilize the Cottage Court Overlay district for proposed work on the lot located at 429 Elm Street (TMP#: 520-005-000-000-000).

In accordance with the Conditional Use Permit Standards 17.5.5.B described in the Land Development Code, we offer the following analysis to aid in the consideration of our request:

Written Narrative
The property currently has (3) buildings that contain (3) housing units. An unfinished barn and shed are also on the property. This project will involve renovating the interior of the existing barn to create (2) new residential apartments: (1) two-bed, one-bath units and (1) one-bed, one-bath unit. To accommodate this change, new entrances will be added to the western side of the building. Additionally, the existing garage doors will be eliminated, existing dormers will be enlarged or replaced, and new insulated windows will be installed. No other exterior modifications are planned as part of this project. The entire property is served by city water and sewer.

There are (8) existing parking spaces on the property. Once complete, there will be (5) housing units on site with an average gross living area per unit of 900 SF. The total footprint of all buildings on the site is 3,185 SF (637 SF per unit). The parcel is 0.48 acres in size and located in the Low Density (LD) zoning district.

In accordance with the Site Development Standards described in Article 21 of the Land Development Code, we offer the following analysis to aid in the consideration of our request:

21.2 Drainage & Stormwater Management
The existing drainage patterns on the site will be maintained and no major exterior improvements are planned beyond the addition of a new entrance on the southwest side of the building.

21.3 Sediment & Erosion Control
See above.

Authentisign ID: 3B30A33E-E45C-F011-8F7C-000D3A8A9962

21.4 Snow Storage & Removal
Snow will continue to be stored in various locations on the property.

21.5 Landscaping
No changes in landscaping are anticipated.

21.6 Screening
No additional screening is anticipated.

21.7 Lighting
New porch lights will be installed at the new entrances. The LED fixture will be dark skies compliant, with a 3000K warm white color temperature (cut sheet attached).

21.8 Sewer & Water
The property is currently served by (1) 6" sewer line and (1) ¾" potable water line connecting to Elm Street. A new water/sewer line will be extended from Elm Street to the barn under the existing driveway. A design flow calculation for the parcel post-development is in Table 2-1 below.

Table 2-1

429 Elm Street

Sewer/Water Design Flow Calculations

	Units	Bedrooms	Bathrooms	Design Flow (GPD)
New 1-bed/1-bath unit	1	1	1	150
New 2-bed/1-bath units	1	2	1	225
Total New	2	3	2	375
Existing 2-bed/1-bath	1	2	1	225
Existing 2-bed/1-bath	1	2	1	225
Existing 2-bed/1-bath	1	2	1	225
Total Existing	3	6	3	675
			Total Combined	**1050**
			Net Change	**375**

*Unit design flows based on 150 GPD for new one-bedroom units

*Unit design flows for 2-3 bedroom units based on NH DES Rules, ENV-Wq 1008, Page 55:

As a result of this renovation, we anticipate a net increase of water usage and sewer discharge on the site to be no more than 375 GPD (with peak usage occurring in the early morning and evening hours). Overall, we anticipate that the impact on city water and sewer utilities from this project will be negligible.

Authentisign ID: 3B30A33E-E45C-F011-8F7C-000D3A8A9962

21.9 Traffic & Access Management
After consulting the ITE Trip Generation Manual, traffic from the new development is estimated to be between 1-2 vehicle trips per hour. We expect the net difference in trips to and from the site before and after this development to be negligible. Additionally, the trip estimates for these additional units are far below the 100 vehicle trips per hour threshold that would constitute a noticeable impact, based on current ITE and NHDOT methodologies. In other words, standard traffic engineering practice suggests that the proposed development would be expected to result in negligible impacts to the adjacent roadway system.

21.10 Filling & Excavation
N/A. No excavation is anticipated as part of this development.

21.11 Surface Waters & Wetlands
There are wetlands approximately 180' from the rear property line. This proposal will not impact any surface waters or wetlands.

21.12 Hazardous & Toxic Materials
N/A

21.13 Noise
Following construction, no additional noise that is inconsistent with residential uses that already exist on the site and in the surrounding area.

21.14 Architecture & Visual Appearance

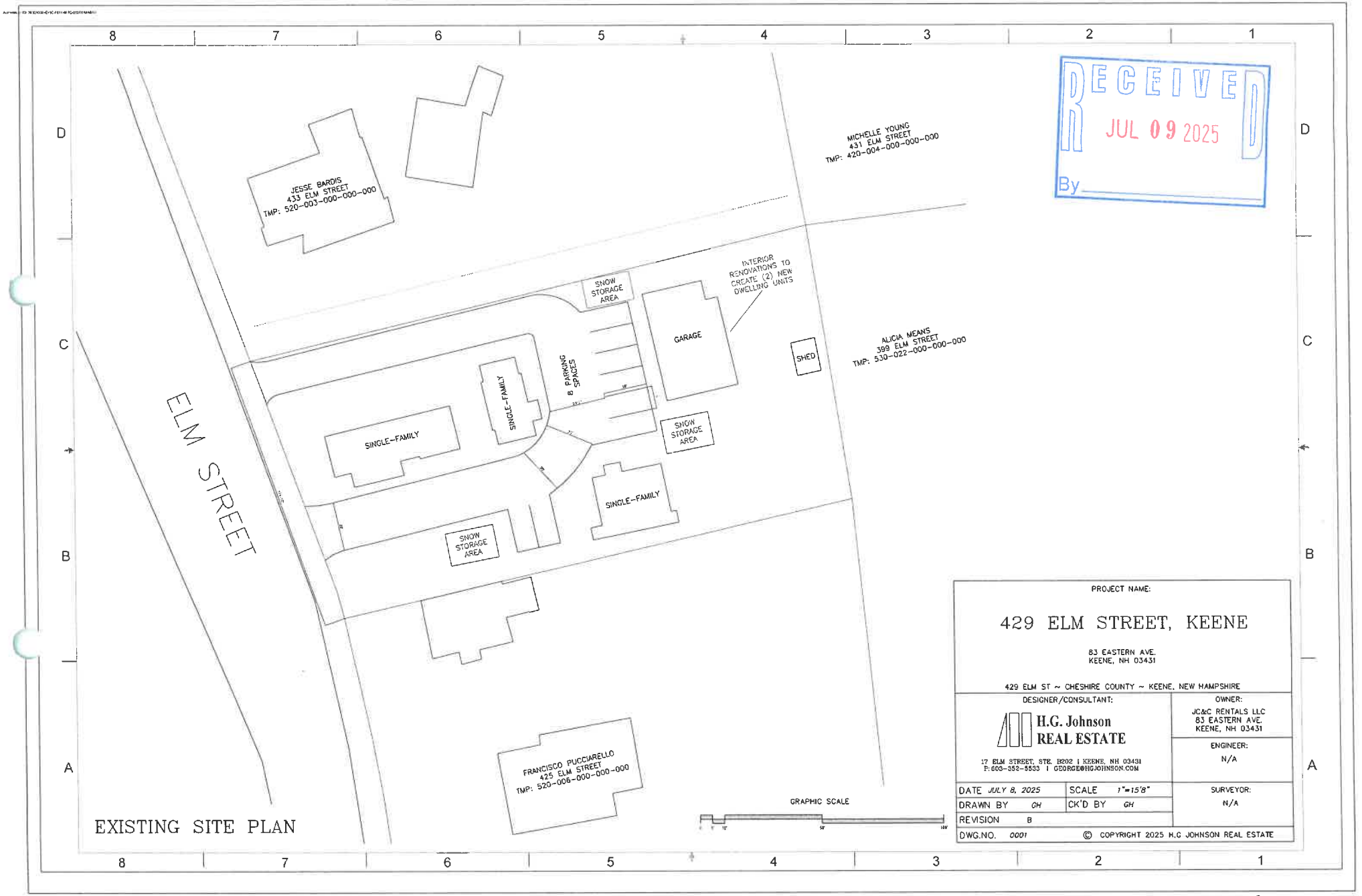
No substantial changes to the architecture and visual appearance of the building are anticipated, beyond the addition of new entryways and porch light(s) near the back of the building, replacement of the dormers and windows, and elimination of the garage doors. The new porch light(s) will be a dark skies compliant LED fixture that emits 3000K of warm white light. The new entryway will closely match the existing building features.

We look forward to being granted permission to proceed with this exciting project that will add (4) new affordable housing units to the city's housing stock. Please reach out to me with any questions or concerns. Thank you.

Best regards,
Authentisign
George Hansel
George Hansel, HG Johnson Real Estate

Submitted on behalf of:
Authentisign
Joe and Cheryl Bagster
Cheryl & Joe Bagster, Property Owners

Attachments:
1) Cottage Court CUP Application
2) Plan Set – 429 Elm Street Project
3) Manufacturer's cutsheet porch light
4) Abutter's List and Mailing Labels



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By

PROJECT NAME:

429 ELM STREET, KEENE

83 EASTERN AVE.
KEENE, NH 03431

429 ELM ST ~ CHESHIRE COUNTY ~ KEENE, NEW HAMPSHIRE

DESIGNER/CONSULTANT: H.G. Johnson REAL ESTATE 17 ELM STREET, STE. B202	OWNER: JC&C RENTALS LLC 83 EASTERN AVE. KEENE, NH 03431
	ENGINEER: N/A
DATE JULY 8, 2025 — SCALE 1"=15'8"	SURVEYOR: N/A
DRAWN BY GH — CK'D BY GH	
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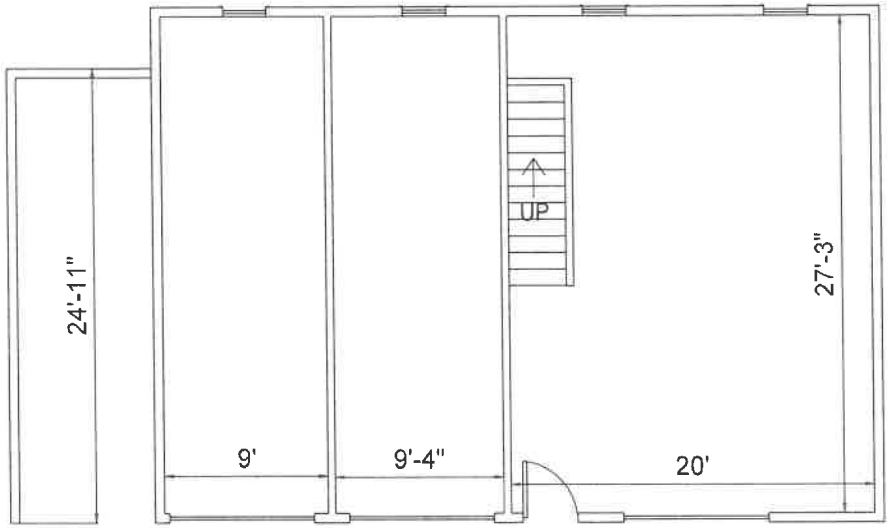

FIRST FLOOR (EXISTING)

GRAPHIC SCALE

PROJECT NAME:

429 ELM STREET, KEENE

83 EASTERN AVE.
KEENE, NH 03431

429 ELM ST ~ CHESHIRE COUNTY ~ KEENE, NEW HAMPSHIRE

DESIGNER/CONSULTANT: H.G. Johnson REAL ESTATE 17 ELM STREET, STE. B202 | KEENE, NH 03431 P: 603-352-5533 | GEORGE@HGJOHNSON.COM	OWNER: JC&C RENTALS LLC 83 EASTERN AVE. KEENE, NH 03431
	ENGINEER: N/A
DATE JULY 8, 2025 | SCALE 1"=15'8" DRAWN BY GH | CK'D BY GH REVISION B DWG.NO. 0001	SURVEYOR: N/A

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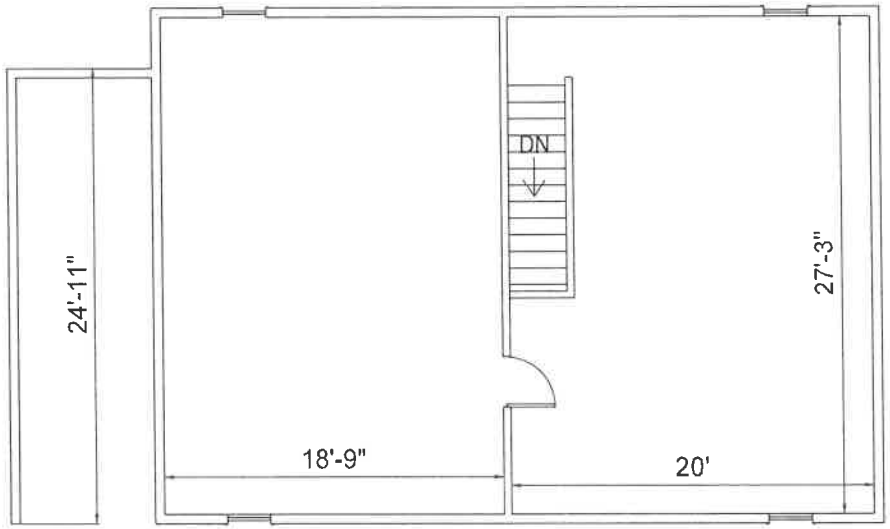

SECOND FLOOR (EXISTING)

GRAPHIC SCALE

PROJECT NAME:

429 ELM STREET, KEENE

83 EASTERN AVE.
KEENE, NH 03431

429 ELM ST ~ CHESHIRE COUNTY ~ KEENE, NEW HAMPSHIRE

DESIGNER/CONSULTANT: H.G. Johnson REAL ESTATE 17 ELM STREET, STE. B202	KEENE, NH 03431 P: 603-352-5533 I GEORGE@HGJOHNSON.COM
OWNER: JC&C RENTALS LLC 83 EASTERN AVE. KEENE, NH 03431	
ENGINEER: N/A	
SURVEYOR: N/A	
DATE JULY 8, 2025	SCALE 1"=15'8"
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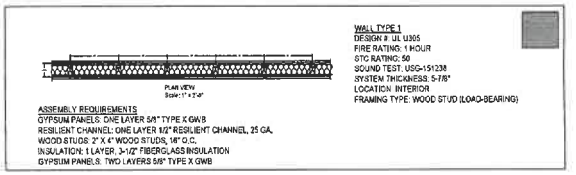
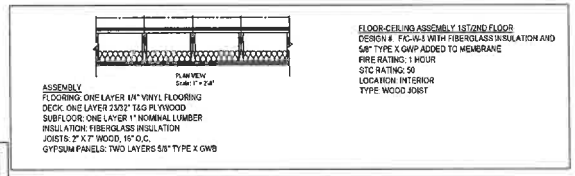
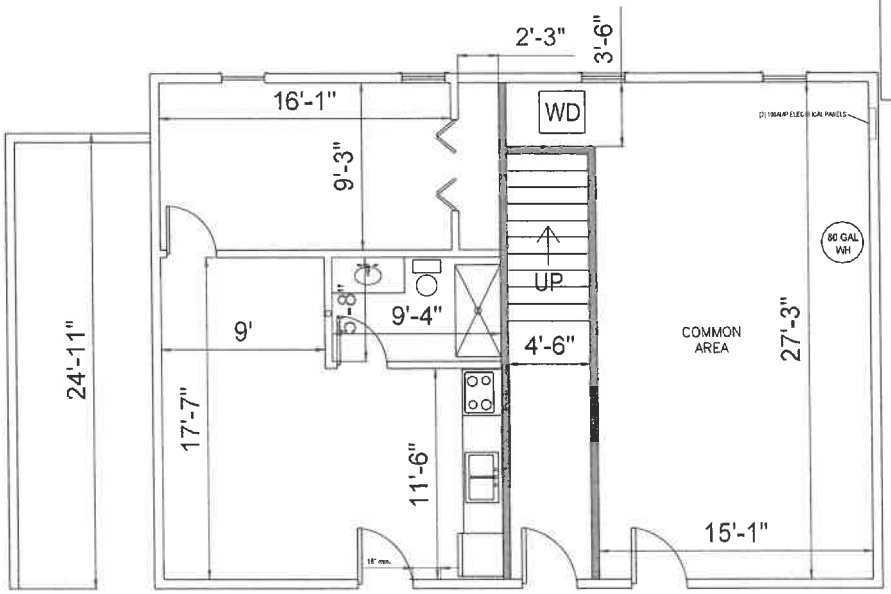
TYPE 1 WALL DETAIL:



FLOOR-CEILING ASSEMBLY DETAIL:





GRAPHIC SCALE

FIRST FLOOR

PROJECT NAME:

429 ELM STREET, KEENE

83 EASTERN AVE.
KEENE, NH 03431

429 ELM ST ~ CHESHIRE COUNTY ~ KEENE, NEW HAMPSHIRE

DESIGNER/CONSULTANT: H.G. Johnson REAL ESTATE 17 ELM STREET, STE. B202	KEENE, NH 03431 P: 603-352-5533 | GEORGE@HGJOHNSON.COM
OWNER: JC&C RENTALS LLC 83 EASTERN AVE. KEENE, NH 03431	
ENGINEER: N/A	
SURVEYOR: N/A	
DATE JULY 8, 2025	SCALE 1"=15'8"
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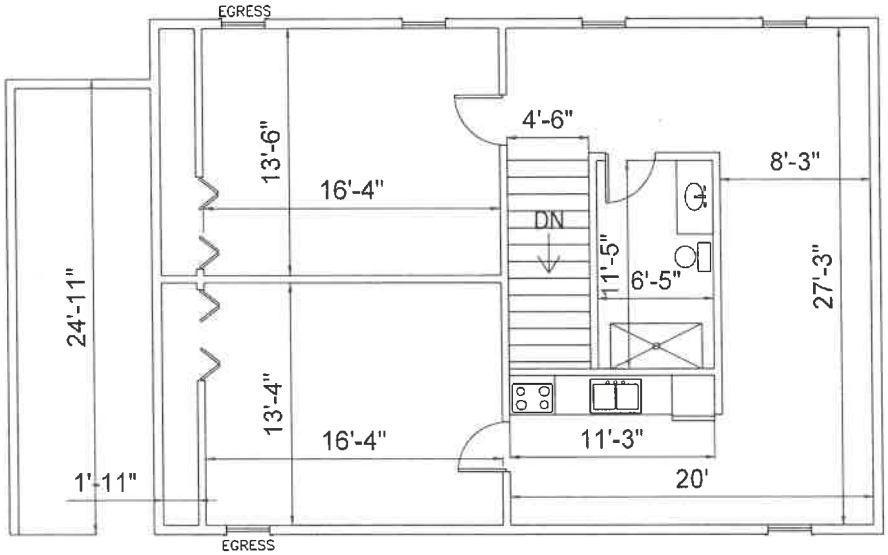

GRAPHIC SCALE

SECOND FLOOR

PROJECT NAME:

429 ELM STREET, KEENE

83 EASTERN AVE.
KEENE, NH 03431

429 ELM ST ~ CHESHIRE COUNTY ~ KEENE, NEW HAMPSHIRE

DESIGNER/CONSULTANT:

H.G. Johnson REAL ESTATE

17 ELM STREET, STE. B202 | KEENE, NH 03431
P: 603-352-5533 | GEORGE@HGJOHNSON.COM

OWNER:
JC&C RENTALS LLC
83 EASTERN AVE.
KEENE, NH 03431

ENGINEER:
N/A

SURVEYOR:
N/A

DATE JULY 8, 2025	SCALE 1"=15'8"
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PB-2025-15
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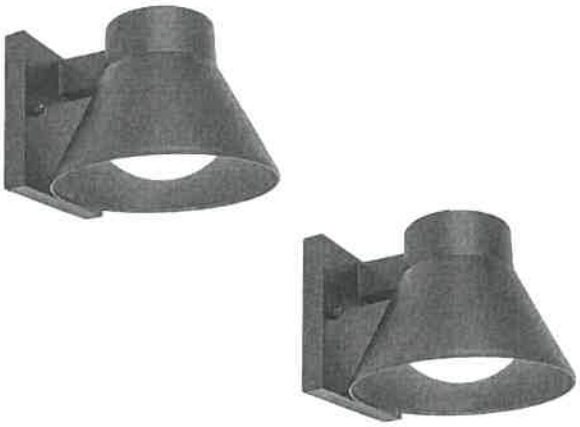
Authentisign ID: 3B30A33E-E45C-F011-8F7C-000D3A8A9962

Lighting & Ceiling Fans / Outdoor Lighting / Outdoor Wall Lights



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PB-2025-15

Authentisign ID: 3B30A33E-E45C-F011-8F7C-000D3A8A9962

Specifications

General			
Collection Name	N/A	Glass Color	White
Color-Changing	No	Light Color	Warm White
Fixture Color Family	Black	Manufacturer Color/Finish	Black
Fixture Finish	Matte	Type	Wall Lantern

Dimensions			
Back Plate Height (Inches)	4	Fixture Width (Inches)	7
Back Plate Width (Inches)	3.5	Size	Medium
Fixture Depth (Inches)	6.22	Weight (lbs.)	3.6
Fixture Height (Inches)	4.76		

Features			
Bulb Type	LED	Number of Bulbs Required	0
Bulb(s) Included	No	Package Quantity	2
Dark Sky	Yes	Power Source	Hardwired
Dimmable	No	Recommended Light Bulb Shape	N/A
Glass Style	Polycarbonate	Shape	Unique
Hardware Included	Yes	Style	Transitional
Light Bulb Base Type	Integrated	Usage Rating	Wet rated
Lowe's Exclusive	Yes	Warranty	3-year limited
Lumens	350	Wattage	6
Material	Cast aluminum	Wattage Equivalent	6
Maximum Bulb Wattage	60	Weather Resistant	Yes
Maximum Fixture Wattage	8.8	Weatherproof	Yes
Motion Sensor	No		

CITY OF KEENE
NEW HAMPSHIRE

MEMORANDUM

TO:	Planning Board
FROM:	Megan Fortson, Planner
DATE:	August 15, 2025
SUBJECT:	PB-2024-20 – Earth Excavation Permit Major Amendment & Hillside Protection Conditional Use Permit – 21 & 57 Route 9

Recommendation:

That the Planning Board vote to continue the public hearing for PB-2024-20 to a date and time certain with the permission of the applicant.

Background:

Following the continuance of the public hearing for the above-referenced application at the Planning Board meeting on July 28, 2025, Planning Staff received updated materials from the project applicant on August 7th, including an updated response letter to comments from Fieldstone Land Consultants, an addendum to the original hydrogeologic report, an updated plan set, and a revised stormwater management report.

These updated materials were forwarded to the Planning Board's third-party engineering consultant, Fieldstone Land Consultants, as well as their third-party hydrogeology consultant, Sanborn, Head & Associates. Following their review of the updated materials, Fieldstone submitted an updated review letter on August 14th and Sanborn Head submitted a letter on August 15th.

At the time of this memo, Planning Staff are working to coordinate a meeting between City Staff, the third-party consultants, and the applicant's team to discuss the feedback provided in the consultants' letters. Planning Staff anticipate that the applicant will submit a request to continue the public hearing for this project to a future Planning Board meeting; however, this request has yet to be submitted. If/when it is received, it will be forwarded to the Board.

Included as attachments are the review letters from both consultants as well as the updated materials submitted by the applicant. Links to the applicable Planning Board agenda packets and meeting minutes are included below. Additional information is available on the Planning Board webpage at https://keenenh.gov/planning-board/.

Planning Board Agenda Packets:

- February 24, 2025
- March 24, 2025
- May 27, 2025
- July 28, 2025

Planning Board Meeting Minutes:

- February 24, 2025
- March 24, 2025
- May 27, 2025

FIELDSTONE
LAND CONSULTANTS, PLLC
Surveying ⌖ Engineering
Land Planning ⌖ Septic Designs
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www.FieldstoneLandConsultants.com

August 14, 2025

City of Keene – Planning Board
Community Development Department
3 Washington Street
Keene, NH 03431
Attn: Megan Fortson, Planner
Evan Clements, Planner
Mari Brunner, Senior Planner

RE: G2 Holdings LLC - Excavation Permit Package Review
Tax Map 215 Lots 7 & 8 – 57 Route 9 – Keene, NH

Dear Board Members,

As requested, Fieldstone Land Consultants, PLLC (Fieldstone) has performed a review of the documents submitted for the above referenced project. The following documents were submitted for our review:

- Response and Transmittal Letter prepared by Granite Engineering LLC, dated August 11, 2025
- Stormwater Management Report, dated July 9, 2025
- Revised Plan Set, last revised August 11, 2025

Fieldstone has completed a review of the materials provided against the City Land Development Code. More specifically the submission materials have been reviewed under Article 25 – Earth Excavation Regulations and Article 26 Section 26.19.4 which handles the Earth Excavation Permit.

The following comments are from our May 30, 2025 review. Granite Engineering's responses to our comments are represented in bold text and our current comments are in italicized text, as needed.

Section 25 Earth Excavation Permit:

1. Section 25.2B: This project will require state and federal permits and these permits have not been obtained yet. Fieldstone would recommend that these permits be considered as conditions of approval when and if the project reaches that point.

It is our understanding that the state and federal permits for this project are still pending and as such Fieldstone still recommends that these be considered as conditions of approval should the Board move in that direction.

2. Section 25.2C: The reports prepared and submitted indicate that this project has the potential to cause adverse impacts associated with the excavation project operations. This section outlines hazards as noise, traffic, dust or fumes, visual impacts, degradation of roadways, erosion and soil instability, sedimentation, adverse impacts to surface and ground waters, loss or fragmentation of important habitat, air quality degradation, pollution of soils or diminution of the value of abutter properties. Based on the materials provided it appears that this project will result in adverse impacts to surface and groundwaters. This is clearly outlined in the Acid Mine Drainage Potential Report and we believe the stormwater management report does not currently adequately address the surface water conditions either.

(Granite Engineering's May 30, 2025 Response) *- Although the site's bedrock may exhibit potential acid-generating properties, this characteristic alone does not inherently make it so. Professionally engineered plans, a Hydrogeologic Investigation Report, Acid Mine Drainage Potential Report, and an Acid Mine Drainage Detection Initial Response Action Plan prepared by a professional geologist are included in this submission. As demonstrated in the submitted material, excavation activities will not adversely impact surface or ground water quality through the unearthing of toxic or acid forming elements or compounds resident in the bedrock or soils.*

Given that bedrock was encountered and has the potential to contain minerals that could lead to AMD, a waiver is required to proceed with bedrock excavation. This waiver is necessary to excavate the material on-site adequately. While AMD is uncommon in active New England quarries, our proactive approach includes initial testing, early detection protocols, and action plans, which are crucial for managing any potential adverse effects. These supporting documents have been included with this submittal.

All stormwater from bedrock excavation activities will be collected, contained, and infiltrated back into the ground. We anticipate zero runoff associated with the bedrock excavated areas discharging the site, effectively protecting surface waters from potential AMD. The revised Stormwater Management Report includes an analysis of the two proposed infiltration basins and the ability to infiltrate the stormwater up to and including the 50-year 24-hour storm event. In addition to reintroducing surface water to the ground, the proposed lining of the two infiltration

ponds with 12 inches of crushed limestone gravel as a precautionary measure will help neutralize any potential for acid mine drainage.

(Fieldstone's May 30, 2025 Response) *- The applicant has provided a waiver to address this comment as it relates to the projects potential to cause adverse impacts associated with the excavation project. The applicant believes that their proactive approach and proposal will satisfy the regulations which prohibit operations in areas that have the potential to cause Acid Mine Drainage. Should the Board feel comfortable approving this waiver we would recommend that the proposed Acid Mine Drainage Detection Initial Response Action Plan be reviewed by a third-party hydrogeologist. Fieldstone does not specialize in this area so we would recommend that the protocols and recommendations within this report be reviewed to ensure that they are in fact appropriate and reasonable action plans.*

Part of this comment does also include surface water impacts as it relates to the Stormwater Management Report. Fieldstone has reviewed this revised report and we do not believe that the revised report accurately portrays the project under the post-conditions. Currently many of the subcatchment areas do not include impervious areas or include small amounts of impervious areas. This project will be a bedrock mining operation and as such there will be exposed vertical ledge faces and the restoration will consist of bedrock covered with loam and seeded in many areas. In HydroCAD, a shallow ledge area should be modeled using a subcatchment with a high runoff curve number (CN) and a suitable time of concentration (Tc). The CN should reflect the shallow ledge's limited permeability, potentially using a CN value between 80 and 90. This in our opinion would more accurately represent the post-construction conditions and associated stormwater runoff.

(Granite Engineering's Current Response) - A revised stormwater management report has been provided which includes modeling the disturbed areas within the gravel operation with a high CN value of 80, modeled as >75% Grass Cover, Good, HSG D. These soils have a high runoff potential, very low infiltration rates when thoroughly wetted, and consist chiefly of clay soils with a high swelling potential, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very low rate of water transmission (0-0.05 in/hr).

(Fieldstone's Current Response) – The revised stormwater management report has been revised to reflect anticipated conditions within the subcatchment areas. This comment has been addressed.

3. Section 25.3D: Surface Water Resources. The excavation perimeter shall be set back at least 250-ft, and the access driveway shall be set back at least 150-ft, from any surface water resource. The proposed excavation is located within 250-ft in a number of locations and the applicant is seeking a waiver from this section.

It is our understanding that the Board still needs to consider this waiver request.

4. Section 25.3.3: The ground water table elevations need to be revisited in the reports. There appears to be conflicting data from the test pits and soil borings regarding the location of the estimated seasonal highwater table. Depending on the results of this work other portions of Section 24.3.4 may or may not be applicable. For example, the excavation depths in Period 8 appear to show depths of excavation below the water table. Test pits and record boring logs show seasonal high-water tables that are encountered and proper separation for infiltration does not appear to be provided. Based on our review of the data it appears this project will need an exception from 25.3.3A as excavation appears to be proposed below 6 feet from the seasonal high-water table.

(Granite Engineering's May 30, 2025 Response) *- A groundwater monitoring well (SLR-12), installed by SLR International Corporation, observed a groundwater fracture within 18 inches of the existing ground surface. It is the project's intent to refrain from excavating this area. While there is no evidence that the fracture in which SLR-12 is located extends into the proposed excavation area, we are respectfully requesting this waiver to ensure continued compliance with Article 25.3.3.*

The groundwater monitoring well which encountered high groundwater, is an anomaly. This particular well, drilled by a different company for another firm, unexpectedly encountered a high level of groundwater. The applicant noted during drilling that surface water was present nearby and appeared to be flowing into the well. It's important to note that a nearby well and test pit, located close to SLR-12, did not encounter any groundwater. Furthermore, all overburden and bedrock wells within the planned excavation area have also shown no groundwater.

While we believe the high groundwater reading in the anomalous well is likely inaccurate due to the observed surface water influence, we have taken care to avoid disturbing the adjacent grade. However, completely avoiding the adjacent area would unfortunately prevent the construction of a critical sedimentation pond. These sedimentation ponds are essential for effective site runoff control. They function by capturing and holding water, allowing sediment to settle out. This process is vital in preventing sediment from entering downstream water bodies and safeguarding water quality during the construction phase. If groundwater is actually encountered in the adjacent area, blasting operations will cease as MSHA, the protective protocols governing blasting, does not allow the blasting within groundwater. The floor of the basin is at elevation 842.00 and relatively half way between the wells. Based on this information, the water table was interpolated and estimated at 828.95.

(Fieldstone's May 30, 2025 Response) *- The applicant's engineer has acknowledged that there is a conflict in the data provided but believes that the information submitted for Phase 1 by TFMoran likely does not accurately represent the conditions due to observed surface water in proximity to*

the well and therefore may be an anomaly. They have further stated that excavation within the groundwater is not permitted by MSHA and as such operation would cease at that time if groundwater was in fact encountered. They have also stated that the proposed stormwater features in this area are critical to the design of the site. We would recommend that further testing be performed in this area to support the current design or third-party inspection of this area be performed during construction to verify that groundwater is not present. If groundwater is encountered this could significantly modify the proposal for the project and any associated changes would require local review and approvals.

(Granite Engineering's Current Response) - One monitoring well and four additional bedrock wells we drilled to determine potential groundwater depths. Those results can be found on the Monitoring Plan, and are as follows:

MW- 9 (9-feet deep) Dry
BRW-9 (50-feet deep) SWL 6.40 BG
BRW-10 (85-feet deep) SWL 25.5 BG
BRW-11 (85-feet deep) SWL 41.43 BG
BRW-12 (90-feet deep) SWL 51.82 BG

The proposed pit floor in period 8 has been raised to provide the required 6' separation to excavation above the water table. The proposed pit floor in period 1, as well as the sedimentation basin (#7) have also been raised to provide the 6' separation from the water table.

(Fieldstone's Current Response) – The third-party hydrogeologist (Sanborn Head) observed the borings and monitoring wells and has represented that there are potential conflicts with the groundwater and/or separation to groundwater in Period 1 and Period 8. This should be reviewed and the design and stormwater management report revised as necessary.

The stormwater report states that the design is relying on test pits performed by TFMoran but those test pits do not reach depths to verify soil materials and adequate separation to seasonal high-water table. The Subsurface Data table on the monitoring plan shows that Test Pit 1 and 2 go to depths of 867.0 and 863 respectfully and the infiltration basin in this area has a bottom elevation of 842.0.

SLR-10 which is outside of the infiltration area shows water observed at 841.1 (884-42.9) which would not provide adequate separation to the bottom of the infiltration basin at 842.0. The ground elevation per the topography depicted on the monitoring plan shows SLR-10 at elevation 890+/- not 884 per the table. If the elevation in the plan view is correct this would raise the observed groundwater level to 847.1+/-. BRW-12 which is inside the infiltration basin is not detailed on the monitoring plan but it is my understanding readings from BRW-12 may support

ground water elevations at approximately 830.9 during low flow conditions but the materials are not conducive to infiltration since bedrock was encountered. The table on the monitoring plan should be updated to depict all observations on-site and the data should be verified to ensure that all elevations are represented correctly.

The stormwater management design and model shall be revised and updated to reflect the site conditions.

5. Section 25.3.4.A.1: We have reviewed the soil logs and their proximity on the property. The number of observations appear to be appropriate at this stage but additional data may be required to support the current design. Additional investigation may also be required depending on the consultant's responses surrounding concerns for potential impacts.

With the submission of the Acid Mine Drainage Detection Initial Response Action Plan Fieldstone differs to the third-party Hydrogeologist to ensure that the protocols and monitoring are appropriate.

6. Section 25.3.4.A.2: The surface data table on Sheet 11 of 22 does not accurately represent elevations (existing and proposed) and separation to seasonal. The Hydrogeologic Investigation performed by SLR shows that boring log SLR-10 observed water at 840.1+/-, SLR-11 observed water at 817.8+/- and SLR-12 observed water at 888.5+/-. The finish grades in these areas appear to show interference. The plans do not show all of the record borings. For example, SLR-12 appears to be missing and the excavation at this location is approximately 855+/- which appears to be 30+ feet below the observed seasonal water table.

SLR

TABLE 1
GROUND SURFACE, WELL, AND GROUNDWATER ELEVATIONS
Tax Map 215, Lot 7
Route 9, Keene, New Hampshire
Project # 144.16535.00023

Well ID	Ground Surface Elevation (feet)	Proposed Excavation Depth	Well Elevation At Top PVC (feet)	Total Well Depth (feet)	Bottom Well Elevation from Ground Surface (feet)	PVC Well Screen Interval (feet)	Depth to Groundwater Date	Depth to Groundwater from Ground Surface (feet)	Groundwater Elevation (feet)
SLR-10	883 ±	854 ±	884.7 ±	55	828 ±	5-55	3/22/22	42.9	840.1 ±
SLR-11	863 ±	856 ±	865.3 ±	45.2	817.8 ±	5-45	3/22/22	dry at 45.2	817.8 ±
SLR-12	890 ±	858 ±	892.7 ±	39.5	850.5 ±	4.5-39.5	3/22/22	1.5	888.5 ±

(Granite Engineering's May 30, 2025 Response) *- The proposed grade at SLR-10 is 860.00 in period*

1, and 855.00 in period 8. This grading is approximately 15 feet above the observed water table found (840.1+/-). The proposed grade at SLR-11 is 880.00 in period 1, and 855.00 in period 8. This grading is approximately 37 feet above the observed water table found (817.8 +/-). SLR-12 is shown on sheets 5 and 10, and the existing grade at SLR-12 is 888+/-. The existing grade is to be maintained in this location. No excavation is occurring in this location.

***(Fieldstone's May 30, 2025 Response)** - The water table drops 22+/- feet between SLR10 and SLR11 and it is a relatively short distance between these two locations. We would recommend an additional test site between the two locations to ensure adequate separation to seasonal high water. This stormwater management area is critical to the design and operation of this site. This additional testing could be done between phases as a condition of approval should the Board feel comfortable with this recommendation.*

(Granite Engineering's Current Response) - See response to #4 above.

(Fieldstone's Current Response) – See our response to #4.

7. Section 25.3.4B2: The data for the wells depicted on the plans (3 wells) should be provided and documented for baseline information. It would seem appropriate that the monitoring plan include one or more of these wells as well.

This comment has been addressed.

8. Section 25.3.4B3A: The soil logs and borings in Period 8 do not seem to meet the requirements outlined in this section.

This comment has been addressed.

9. Section 25.3.4C: The proposed monitoring plan for this project does not match the frequency outlined in this section. The City shall determine if they are comfortable with the proposed frequency and if relief is required from this section of the regulations.

This comment has been addressed.

10. Section 25.3.6: This section states " When the proposed operation includes the excavation of bedrock materials, the applicant shall demonstrate that excavation activities will not adversely impact surface or ground water quality through the unearthing of toxic or acid forming elements or compounds resident in the bedrock or soils. Such demonstration shall be made by obtaining the opinion of a NH licensed engineer or professional geologist. Excavation of bedrock shall not be permitted where bedrock contains toxic or acid forming elements or compounds." Per the Acid Mine Drainage Potential Report prepared by

Frontier Geoservices this project has the potential to produce acid mine drainage. The report outlines that borings 1 through 8 have the elements or compounds that could produce acid mine drainage.

The applicant has provided a waiver to address this comment as it relates to the projects potential to cause adverse impacts associated with the excavation project. The applicant believes that their proactive approach and proposal will satisfy the regulations which prohibit operations in areas that have the potential to cause Acid Mine Drainage. Fieldstone does not specialize in this area so we would defer to the third-party hydrogeologist review and recommendations.

11. Section 25.3.7: This Section addresses Stormwater Management and states "Excavation activities within the excavation perimeter and the access driveway shall not cause adverse impacts from stormwater runoff and/or groundwater drainage, including erosion, sediment transport, water quality degradation, and/or increases in volume or velocity of water leaving the site".
    a. The stormwater management report and design for this project is currently incomplete as it does not evaluate the pre and post conditions. The submitted report does not include preconstruction conditions or properly model the phasing of the project and the phased conditions throughout the project.

Granite Engineering's May 30, 2025 Response *- A revised Stormwater Management Report has been updated to show the pre and post development flows from the project area to the wetlands and drainage culverts adjacent and under Route 9. There is a net decrease in peak flow during all storm events, up to and including the 100-yr storm event, per the request of the Conservation Commission. The two-year pre vs. post volumes for channel protection have also been met.*

(Fieldstone's May 30, 2025 Response) *- Fieldstone has reviewed this revised report and appreciates the additional information. As mentioned previously in this letter we do not believe that the revised report accurately portrays the project under the post-conditions due to the nature of the project. Currently many of the subcatchment areas do not include impervious areas or include small amounts of impervious areas. This project will be a bedrock mining operation and as such there will be exposed vertical ledge faces and the restoration will consist of bedrock covered with loam and seeded in many areas. In HydroCAD, a shallow ledge area should be modeled using a subcatchment with a high runoff curve number (CN) and a suitable time of concentration (Tc). The CN should reflect the shallow ledge's limited permeability, potentially using a CN value between 80 and 90. This in our opinion would more accurately represent the post-construction conditions and associated stormwater runoff.*

See response to #2 above

(Fieldstone's Current Response) - The stormwater management report has been revised to better represent the anticipated conditions within each Period of the project. This comment has been addressed.

b. This should include monitoring the same observation points and modeling the closest downstream structures that route the runoff from the site.

This comment has been addressed.

c. The original approvals for this site included the submission of a stormwater management report prepared by TFMoran that properly evaluated the pre and post conditions and storm events. Since this is an expansion of this project we would anticipate a similar submission for the expansion of this project. The submission should also account for the phasing of the project showing that the project meets the standards throughout the phasing periods.

This comment has been addressed.

d. Other details to consider in the stormwater management report:
   i. The model should account for ledge and the associated impervious conditions and shallow ledge. The post conditions do not account for the amount of exposed ledge or shallow ledge resulting from the project. All of the subcatchments show 0% impervious cover and low CN's for the actual anticipated conditions. We believe the CN's used are not representative of post-construction conditions.

This comment has been addressed.

   ii. Outlet structures seem to have orifice plates bolted to headwalls but do not seem to provide for emergency outlets for larger storms or in the event of clogging.

This comment has been addressed.

   iii. The report should compare peak rates and volumes at the two observation points.

This comment has been addressed.

   iv. Confirm adequate depths to ESHWT are being provided.

This comment has been addressed.

v. Verify inlet conditions and culvert cover for cross-culverts.

This comment has been addressed.

vi. Ditch (reach) modeling and capacity analysis should account for stone check dams.

This comment has been addressed.

vii. The report and plans need to include an inspection and maintenance manual outlining all stormwater practices with recommended inspection and maintenance.

This comment has been addressed.

e. It is unclear what the intentions are for handling stormwater and the transition between Phases or Periods.

This comment has been addressed.

12. Section 25.3.8: A review of site photographs and the plans provided shows that the project is currently not constructed per the prior approved plans. The drainage at the entrance is not completed and as such dust control and the transportation of dirt/mud off the site onto the adjacent roadway is occurring.

This comment has been addressed.

13. Section 25.3.10: Note #21 of the Operations Notes makes reference to known important Archeological sites. Please clarify if there are any such sites on-site.

This comment has been addressed.

14. Section 25.3.12: Per this section a fence or barricade shall be installed and the plans have a detail addressing this. Please clarify the intent regarding the timing of the installation of this fence for each phase or period of construction.

This comment has been addressed.

15. Section 25.3.13: Per this section the excavation areas shall not exceed 5-acres. The

applicant is seeking a waiver from this section.

It is our understanding that the Board still needs to consider this waiver request.

16. Section 25.3.17: The access driveway and associated drainage and construction details does not appear to be completed as designed and approved for the initial approval of this project. This is evident if you compare the existing conditions plans with the details depicted on Sheet 10 of 22. There needs to be some clarification on what the intent is with the front end of this project and how it can be brought into compliance with the approved plans.

This comment has been addressed.

17. Section 25.3.25: The plans should be revised to incorporate notes addressing record keeping per this section.

This comment has been addressed.

18. Section 25.3.26: The applicant shall provide the Community Development Department copies of all local, state and/or federal permits required for this project.

It is our understanding that the state and federal permits for this project are still pending and as such Fieldstone still recommends that these be considered as conditions of approval should the Board move in that direction.

19. Section 25.4.1D: To meet this requirement the Stormwater Management Report should appropriately model the pre and post condition design storms and evaluate observation points to ensure that the project will not have negative impacts to downstream areas. reclamation plan should be revised to incorporate notes from this section to ensure compliance with the City Code. This includes notes pertaining to incremental reclamation, topsoil, vegetation, monitoring and remediation as applicable.

This comment has been addressed.

20. Section 25.4.6: We would recommend that the reclamation plans be revised to incorporate the remediation note outlined in this section.

This comment has been addressed.

Plan Review – General Review Comments:

1. Sheet 1 of 22 – Operations notes #3 should mention the 250-foot wetland setback to

excavation setback as applicable too.

This comment has been addressed.

2. Sheet 1 of 22 – Operations notes #10 is not correct. The subject site is not self-contained and this note should be revised accordingly. There are areas of the site that are not self-contained including but not limited to existing access roads, etc.. This note misrepresents current and proposed conditions.

This comment has been addressed.

3. Sheet 1 of 22 – Operations notes #17 appears to conflict with the updated existing conditions plan as fuel is currently stored on-site. We would recommend the preparation and submission of a Source Control Plan due to the presence of hazardous materials on-site and the nature and size of the proposed project.

This comment has been addressed.

4. Existing Conditions Sheets should show setbacks and buffers. The limit of disturbance line on the updated existing conditions plan seems to represent a wetland impact on the east portion of the site. Please clarify and correct plan as applicable.

This comment has been addressed.

5. Sheet 5 of 22 – The temporary sedimentation basin needs additional detail. There appears to be no erosion and sedimentation controls, berm detail, emergency outlet controls and contour labels. Are other access improvements going to be included with this initial work?

This comment has been addressed.

6. Sheet 6 of 22 – the 30" culvert in Period 1 has two outlets labeled and I would check the cover over this pipe as the grading appears to be too shallow.

This comment has been addressed.

7. Sheet 10 of 22 – What is the plan for transitioning form the temporary basin and into this final design? Reviewing the soils data seems to indicate that the basin design is too low and the excavation in areas will intercept SHWT. It looks like the existing trailer and facilities are in the way and should be moved.

(Granite Engineering's May 30, 2025 Comment) *- As the pit floor is lowered, the temporary*

sedimentation basin will be expanded upon as excavation continues. By the time the pit floor has been excavated to elevation 860.00, the infiltration basin shown in period 8 will have been constructed to the proposed pit floor of 842.00. SLR-11 had noted water table at elevation 817.8. SLR 10 had noted water table at 840.1. The floor of the basin is at elevation 842.00 and relatively half way between the wells. Based on this information, the water table was interpolated and estimated at 828.95. The existing trailer and facilities are proposed to be relocated from their current location as shown on sheet 10, during the start of period 8.

(Fieldstone's May 30, 2025 Comment) *- The water table dropping 22+/- feet in this short distance is of concern. We would recommend an additional test site between the two locations to ensure adequate separation to seasonal high water. This stormwater management area is critical to the design and operation of this site. This additional testing could be done between phases as a condition of approval should the Board feel comfortable with this recommendation.*

(Granite Engineering's Current Comment) - See response to #4 above.

(Fieldstone's Current Response) – See our comments in #4

8. Sheet 12 and 14 of 22 – Additional Basin details are needed. Contour labels, berm detail, emergency outlet and associated details.

This comment has been addressed.

9. Has an EPA Notice of Intent (NOI) been filed for the current site operations? Please provide appropriate materials so we can verify compliance with the initial approved site plan.

This comment has been addressed.

10. A reclamation bond will need to be established for the project prior to work commencing.

We would recommend that this be handled as a condition of approval should the Board move in this direction.

11. The exiting conditions plan seems to indicate that the site is not currently in compliance with the previously approved plans. The plan appears to be missing drainage culverts, a stormwater management basin (infiltration basin), an outlet structure, an emergency spillway, slope benching, a reinforced drainage swale, drainage at the entrance, access roadway grading, stop sign at entrance, etcetera. See photo of entrance which depicts current conditions and a deviation from the approved plan.

This comment has been addressed.

12. Existing conditions plans should show setback and wetland buffer areas to ensure there are no impacts to those areas.

This comment has been addressed.

13. We have highlighted two areas on the aerial photography below. Further information should be provided for these areas as they appear to be new impact areas. The arrow on the image also represents an area that appears to be seeing more drainage as there is significant erosion and soil loss which is visible from NH Route 9. We recommend that this area be investigated further.

Although there is an existing stream on the adjacent property that has experienced historical erosion issues, our proposed project is located in a separate watershed. A perennial stream runs between the two sites and serves as a clear hydrologic divide. As such, any surface water generated by our project will not contribute to the flow or erosion concerns associated with the neighboring stream. Based on this separation, as well as the fact the gravel operation is self contained, we do not anticipate any impact from our development on the existing erosion issues off-site.

Staff should determine if they are satisfied with this response. This area is removed from the proposed gravel operation but is in the vicinity of the access road that accesses the gravel operation in the adjacent Town.

14. The phasing plans need to meet the detail and note requirements outlined in this section. It is difficult to decipher what improvements are required for each phase and how phases transition.

This comment has been addressed.

New Comments:

1. Will on-site vibration monitoring be done during blasting and crushing operations? Concerns have been raised regarding adjacent properties and potential damage nearby infrastructure associated with on-site operations. This type of monitoring is typically required to protect adjacent properties and to address liability issues in this industry. Please share how the site operations will address this concern and be consistent with city regulations. We would recommend adding a note to the plan set to document how the site operations will comply with city and industry standards.

This concludes our review of the technical components for the above referenced project. Please feel free to contact us should you have any questions, concerns or require additional information.

Sincerely,
FIELDSTONE LAND CONSULTANTS, PLLC

Chad E. Branon, P.E.
Civil Engineer/Principal

SANBORN HEAD

MEMORANDUM

To: Megan Fortson, Planner, City of Keene, NH
From: Russell Abell, PG
File: 6741.00
Date: August 15, 2025
Re: Summary of Hydrogeologic Review of G2 Holdings Keene Quarry Expansion Application
cc: Mari Brunner, Evan Clements, Emily Duseau

Sanborn Head and Associates, Inc. (Sanborn Head) has been retained by the City of Keene to provide hydrogeologic review of the G2 Holdings Keene Quarry Expansion Application (Application). The site subject to the Application is located at 57 Route 9, Keene, New Hampshire (Site) and is currently an active gravel pit operation. As requested, this review focused on evaluating two conditions at the Site and in the Application:

1) Review the need for and evaluate the potential for excavation within six feet or below the water table as this requires a waiver under City of Keene Land Development Code (LDC) Article 25.3.3.B.
2) Review the potential for the development of acid mine drainage (AMD) as a result of the planned excavation of bedrock and the need for a waiver under City of Keene LDC Article 25.3.6.

To complete this review, several documents provided as supporting information to the Application were reviewed – these documents are listed in Attachment A. Sanborn Head also prepared Figure 1 (Site Plan) and Figure 2 (Vertical Profile) to assist in the summary of findings. As part of this review, Sanborn Head also needed to review and understand the stormwater management plans for the Site, which is also summarized below, where relevant.

SUMMARY OF CONCERNS

Sanborn Head's review of the Application materials has identified several concerns, which are listed below, and further detail regarding these concerns and our findings are provided later in this summary memorandum. The concerns are as follows:

1. **Excavation Below the Water Table:** The observed water table in newly installed monitoring wells located in proposed excavation area Period 8 represents water table conditions that can be characterized as seasonal low water table conditions. Therefore, the revised Period 8 "Pit Floor" proposed elevation of 860 feet above mean sea level (AMSL) has the potential to be below the water table and/or lower than six feet above the water table during seasonal high water table conditions. This is especially of concern

in the northwest portion of the proposed excavation area. In fact, as shown on Figure 2, under current seasonal low water table conditions, the northwest portion of the Period 8 excavation is projected to be below the water table. Seasonal high water conditions may also be a concern for Period 1 as well, especially in the southeastern portion of the excavation area. Additional data collection from Period 1 would be needed to determine the water table conditions there.

2. **AMD Potential:** The Application supporting documentation has presented a concern for AMD potential as a result of excavation of bedrock in each of the proposed Periods. The recently observed presence of the mineral pyrite (an iron sulfide mineral with chemical formula FeS_2) in drill cuttings generated during the installation of monitoring wells in Period 8 further supports this concern. Although the available information does not allow for a more thorough assessment of AMD development potential, several existing lines of evidence also point to it being a concern. While the Application has provided a monitoring program, best management practice of lining surface water detention and retention ponds with limestone aggregate, and excavation will be terminated if necessary, additional monitoring should be considered and appears warranted.
3. **Period 8 Stormwater Infiltration:** Although not a focus of this review, another concern identified relates to the stormwater management plan for the proposed project. Based on our preliminary review and understanding, an existing infiltration basin (retention basin) and a newly constructed basin in Period 8 will serve to infiltrate all stormwater that emanates at the Site during the implementation of the project. The documentation appears to show the newly constructed Period 8 retention basin will be constructed on the bedrock pit "floor" (or will be excavated into bedrock), and will exist as the only infiltration basin during the late stages of the project (excavation of Period 8), if it is not also active earlier in the project. With the base located on bedrock, even if saprolite or highly weathered (typically clay-rich) materials are present, it seems unlikely that an infiltration rate of 0.3 inches per hour will be achieved as the Application used to determine stormwater management. It is possible that the actual infiltration rate could be close to zero (if competent, unfractured bedrock), or as much as an order of magnitude lower (if weathered bedrock or saprolite). Therefore, it appears unlikely that stormwater will infiltrate in this Period 8 basin, especially at the rate used to model stormwater management.

REVIEW FINDINGS

The following portion of this summary memorandum will provide an overview of Sanborn Head's findings and supporting information that has led to the concerns summarized above. This portion is separated into two subsections to focus on the two areas of focus: 1) excavation below the water table; and 2) the potential for AMD development with a final section further describing the stormwater management findings.

Excavation Below the Water Table

The Applicant has provided data regarding hydrogeology at the Site based on installation of 12 bedrock monitoring wells, 12 overburden monitoring wells, and review of several pre-existing

monitoring wells. Sanborn Head has reviewed the information and data provided in the hydrogeological investigation reports listed in Attachment A and has also reviewed publicly available information regarding geology and hydrogeology of the Site and vicinity (references also listed in Attachment A). Based on review of available information, Sanborn Head's findings are summarized below:

- Stratigraphy at the Site appears to be a thin layer of till on bedrock with the potential for alluvium or similar at the lowest elevations on Site (i.e., in the vicinity of Period 8).
- Underlying bedrock is mapped as the Rangeley Formation, a highly weathered low-grade schist. However, based on rock cuttings during advancement of borings BRW-1 through BRW-8, the underlying bedrock was characterized as granitic. An outcrop of a highly weathered, orange-stained schist was observed near Period 8 during Sanborn Head's Site visit on July 31, 2025 and drill cutting descriptions during the advancement of borings BRW-09 through BRW-12 also indicate the presence of a highly weathered schist below the observed overburden.
- Groundwater has only been observed in the bedrock monitoring wells and there does not appear to be consistent water table conditions within the overburden materials.
- Groundwater was not observed in monitoring wells installed within or adjacent to Periods 2 through 7, which are the same borings that identified granitic bedrock underlying a thin (<10 feet thick primarily) overburden unit. Refer to Figure 1 for the location of each of the proposed excavation areas (Periods 1-8).
- Groundwater was observed in each of the bedrock monitoring wells located adjacent to/in Periods 1 and 8 and ranged from approximately 1.5 feet below ground surface to approximately 55 feet below ground surface. Sanborn Head prepared a vertical profile across the Site to better visualize and evaluate the water table or groundwater elevations, which is provided as Figure 2. Figure 2 shows that, consistent with the topography of the Site, the water table is shallower adjacent to Period 1 and the water table elevation decreases across Period 8 towards Otter Creek (located east – northeast of the Site).
- As shown on Figure 2, the revised proposed excavation floor elevation (860 feet AMSL) in Period 8 is interpreted to be above the seasonal low water table elevation in the northwestern portion of this area. In addition, during seasonal high water table elevation conditions, it is possible that the revised excavation pit floor elevation (900 feet AMSL) in the southeastern portion of Period 1 may also be below the water table elevation. However, the groundwater elevation observed in monitoring well SLR-12 in March 2022 was approximately 888.5 feet AMSL, which is more than 6 feet below the proposed pit floor elevation of 900 feet AMSL. This monitoring well is located near the southeastern boundary of Period 1 and there is not additional data within Period 1 to evaluate the groundwater elevation in this area.

Based on the above groundwater elevation data, and assuming the groundwater elevation measurements in the Application materials are representative of overall site conditions, Sanborn Head concludes that significant groundwater is not anticipated to be encountered in the planned excavations in Periods 2 through 7. Monitoring wells located in these areas have been gauged for water levels with no groundwater observed in October 2024, December 2024,

July 2025, and August 2025. The absence of groundwater in the monitoring wells is inferred to be due to the granitic rock observed in the drill cuttings for borings advanced in these areas. Granitic bedrock can be less fractured and more massive and may not transmit groundwater except via fractures. Further, geologic mapping in the areas indicates there is a granite bedrock formation (identified as the Concord Granite) that outcrops west of the Site and appears to dip under the Site. Based on the resolution of typical bedrock geology mapping for New Hampshire, it is reasonable that the Concord Granite could be located on Site directly underlying overburden consistent with the rock cutting descriptions in borings advanced in Periods 2 through 7.

Based on the above information, Sanborn Head also concludes that at the revised excavation pit floor elevations in Periods 1 (900 feet AMSL) and 8 (860 feet AMSL), groundwater is likely to be encountered during seasonal high water conditions in Period 1 and potentially throughout the year in Period 8. Therefore, it is recommended that the planned excavation area/depth in Period 8 be modified or the Applicant would need to seek a waiver of LDC Article 25.3.3.B. If a waiver is sought, additional requirements would be necessary due to the presence of domestic drinking water wells within ½ mile of the Site including, but not limited to, additional monitoring well installations, a pumping test, and other requirements. It is recommended that the Application install one or more bedrock monitoring wells within Period 1 to better understand the water table conditions in this area.

1. Acid Mine Drainage (AMD) Potential

The Applicant provided an analysis of the potential for AMD development at the Site using the Acid Based Accounting (ABA) approach.[1] The results of the Applicant's ABA analysis indicate that there is potential for AMD development during bedrock excavation in each of the proposed Period excavation areas. However, the ABA approach does not provide information that indicate the magnitude of potential future impacts under the proposed site development scenario. In response to the ABA results, the Applicant has proposed a monitoring program for AMD constituents during development, lining the infiltration basins with limestone aggregate as a best management practice, and other response actions if a concern is observed.

To further evaluate the potential magnitude of AMD impacts, Sanborn Head reviewed the ABA analysis data provided in Appendix C of the Applicant's 2024 Acid Mine Drainage Potential Report (see Attachment A for citation). Based on this review, it appears that rock cuttings samples from borings BRW-01 through BRW-08 were placed in de-ionized water and the de-ionized water was then analyzed for geochemical parameters and dissolved metals. Based on these results, acidic pH was identified in samples from BRW-07 and BRW-08 (pH of 4.8 and 5.0 standard units), and metals were detected in the decantate solution at concentrations above New Hampshire Ambient Groundwater Quality Standards (AGQS) as promulgated in Env-Or 600 in one or more samples. The metals exceeding AGQS in the decantate included:

[1] diPretoro, R.S. and H.W. Rauch, 1988, Use Of Acid - Base Accounts In Premining Prediction Of Acid Drainage Potential : A New Approach From Northern West Virginia, p. 1-10. In: Proceedings: Mine Drainage and Surface Mine Reclamation, Vol. 1, U.S. Bureau of Mines IC9183, Pittsburgh, PA

- Manganese at 771 and 309 micrograms per liter (ug/L) (BRW-07 and BRW-08), compared to its AGQS of 300 ug/L.
- Nickel at 106, 110, 1,800, and 627 ug/L (BRW-02, BRW-03, BRW-07, and BRW-08), compared to its AGQS of 100 ug/L.

In addition, although not regulated by New Hampshire groundwater standards, dissolved iron was also elevated in the sample results, with four concentrations greater than 1,000 ug/L with a maximum of 13,200 ug/L, compared to the U.S. EPA secondary maximum contaminant level (SMCL) of 300 ug/L.[2] For context, groundwater discharge to surface water should also be considered. The NHDES Freshwater Chronic Criteria for iron in surface water is 1,000 ug/L (Env-Wq 1703.21[3]).

Further, pyrite was observed in drill cuttings for borings BRW-10 through BRW-12, whereas pyrite or other sulfide minerals were not observed in the borings where samples for the ABA analysis were collected. Given that pyrite is the primary sulfide mineral anticipated to be responsible for AMD potential within the site geology, its observed presence in bedrock cuttings from Period 8 indicate there may be a higher potential for AMD development in Period 8. ABA analysis was not completed in the borings where pyrite was observed.

Based on the ABA results and the additional detail presented above, Sanborn Head concludes that there is a moderate to high potential for AMD development at the Site during project implementation. Therefore, the Applicant should consider enhancing the currently proposed monitoring plan as presented in the 2025 AMD Detection Initial Response Action Plan (the "Plan"; see Attachment A for citation) to include additional monitoring wells and increasing the monitoring frequency. Additionally, surface water monitoring locations should also be performed at the same frequency as monitoring wells once the surface water features (stormwater basins) are constructed during project implementation and after baseline monitoring described in the Plan is completed. However, the proposed response actions in Section 5 of the current Plan appear to be a reasonable approach to addressing criteria exceedances in either groundwater or surface water monitoring locations, if observed. The Planning Board could include revisions to the monitoring plan as a condition of approval. Recommended changes to the monitoring program include the following:

- Increase monitoring well sampling frequency to quarterly.
- Include additional monitoring wells in the monitoring program including two of the newly installed monitoring wells in Period 8 and an additional monitoring well located between Period 8 and NH Route 9.
- Include stormwater pond monitoring locations in the monitoring program during operation (quarterly as above).
- Add monthly field screening for pH in stormwater monitoring locations.

[2] U.S. Environmental Protection Agency (EPA), National Secondary Drinking Water Standards at 40 CFR Part 143.
[3] https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/env-wq-1700.pdf

PERIOD 8 STORMWATER INFILTRATION

During this review, Sanborn Head also preliminarily reviewed the proposed stormwater management approach at the Site as it directly applies to the potential for AMD to impact groundwater underlying the Site through the planned use of infiltration basins. We understand that stormwater is designed to be only infiltrated and therefore there is no planned discharge to area surface water features including Otter Brook located east of the Site, which is currently impaired for several constituents. As part of this review, a concern regarding the Period 8 infiltration basin was identified. We understand that at the end of the planned project implementation, a newly constructed infiltration/retention basin will be constructed in Period 8 with a bottom elevation of 842 feet AMSL (and "plunge pool" elevation of 840 feet AMSL), which will receive stormwater from the entire Site. Based on boring logs for BRW-09 through BRW-12, which are located within Period 8, it appears that competent bedrock is approximately 860 feet AMSL, equivalent to an elevation approximately 20 feet higher than the proposed base of the infiltration pond.

A preliminary review of the 2025 Stormwater Drainage Report (see Attachment A for citation) indicates that an infiltration rate of 0.3 inches per hour was used to estimate management of stormwater for a 50-year and 100-year rain event. However, since it appears that the infiltration pond base will be located on competent bedrock with limited infiltration potential, it is unlikely that infiltration at the rate used in the HydroCAD modeling is representative of what the actual conditions could be following site development. In fact, if the basin base is located on competent bedrock, there may be very little to no infiltration potential. Although boring logs for this area indicate the bedrock is highly weathered in this area, even if the infiltration basin base is on weathered bedrock, the subsurface material may be clay-rich and the infiltration rate could be substantially lower than 0.3 inches per hour. Therefore, Sanborn Head recommends that the Applicant provide additional information to support the infiltration estimates for the Period 8 infiltration/retention basin. Given the anticipated subsurface conditions, the stormwater management plan may need to be modified to address this concern.

We trust this information meets your needs at this time. Please contact me should you have questions regarding this information. We appreciate the opportunity to support the Town's review of the Application.

RHA/TMW: rha

Encl. Attachment A – Documents Reviewed and References

ATTACHMENT A – Documents Reviewed and References

Fieldstone Land Consultants, PLLC, 2025, Letter RE: G2 Holdings LLC - Excavation Permit Package Review Tax Map 215 Lots 7 & 8 – 57 Route 9 – Keene, NH, May 30.

Granite Engineering, LLC, 2025, Waivers, Received by the City of Keene on May 8, 2025.

Granite Engineering, LLC, 2025, Gravel And Earth Removal Plan G2 Holdings LLC, Keene Tax Map 215 Lots 7 & 8, Sullivan Tax Map 5 Lots 46 & 46-1, 57 Route 9, Keene New Hampshire, Cheshire County, Revised August 11.

Granite Engineering, LLC, 2025, Letter RE: G2 Holdings, LLC, Tax Map 215 Lots 7 & 8, 21 & 57 Route 9, Keene, NH, GE Project No. 2302011, August 11.

Granite Engineering, LLC, 2024, Existing Conditions Photographs, Received by the City of Keene on December 19, 2024.

Frontier Geoservices, 2024, Gordon Services - Keene Pit 2024 Acid Mine Drainage Potential Report, 57 Route 9, Keene, New Hampshire, December 18.

Frontier Geoservices, 2024, Gordon Services - Keene Pit 2024 Hydrogeologic Investigation Report, 57 Route 9, Keene, New Hampshire, December 18.

Frontier Geoservices, 2025, Gordon Services – Keene Pit Acid Mine Drainage Detection Initial Response Action Plan, 57 Route 9, Keene, NH, April 6.

Frontier Geoservices, 2025, Addendum To: Gordon Services - Keene Pit 2024 Hydrogeologic Investigation Report, 57 Route 9, Keene, New Hampshire, August 8.

United States Geological Survey (USGS), R. Moore, C. D. Johnson, E.M. Douglas, 1994, Geohydrology and water quality of stratified-drift aquifers in the lower Connecticut River basin, southwestern New Hampshire. Water Resources Investigations Report 92-4013.DOI: 10.3133/wri924013 .

University of New Hampshire, 2025, NH GRANIT GIS Clearinghouse, GRANITview, accessed at: https://granitview.unh.edu/html5viewer/index.html?viewer=granit_view , and accessed between July 29 and August 13, 2025.

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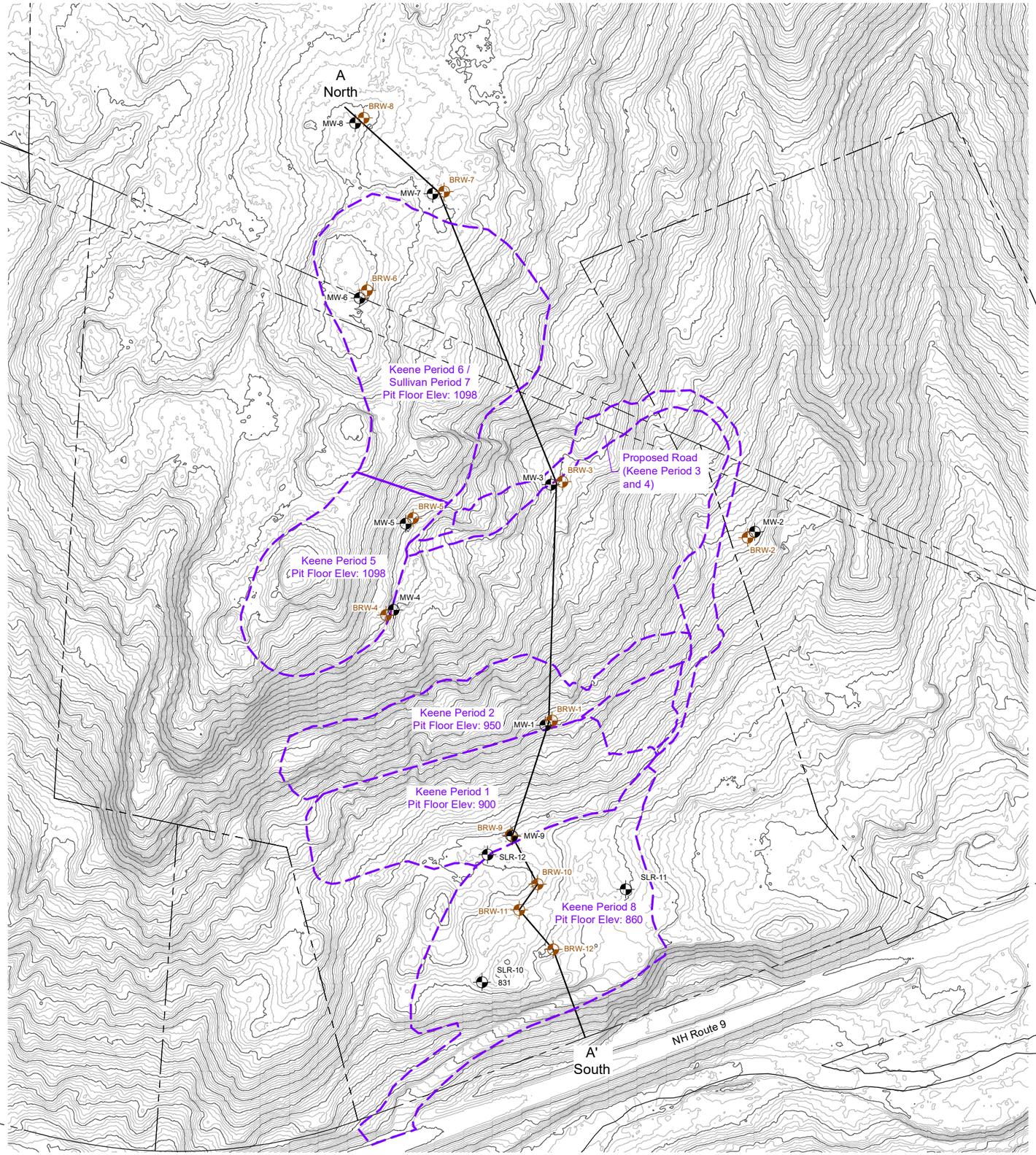

Figure 1

Site Plan

Support of Planning Board Permit Review

City of Keene
Keene, New Hampshire

Drawn By: E. Wright
Designed By: R. Abell
Reviewed By: R. Abell
Project No: 6741.000
Date: August 2025

Figure Narrative

This figure shows the site and profile A-A' alignment.

Notes

1. Ground surface topography developed from Connecticut River Watershed LiDAR data downloaded from GRANIT and dated 2015.

2. Site features and well locations are based on information provided in the Gordon Services - Keene Pit, 2024 Hydrogeologic Investigation Report, 57 Route 9, Keene, New Hampshire, December 2024 and Addendum to: G2 Holdings - Keene Quarry Expansion - Hydrogeologic Investigation Report, 57 Route 9, Keene, NH, August 2025.

Legend

- Approximate parcel line
- MW-2 Monitoring well
- BRW-2 Bedrock monitoring well

N
W E
S

150' 75' 0 150' 300' Feet

SANBORN HEAD

File:P:\6700s\6741.000\Graphics Files\CAD\Work\CrossSection.dwg Plot Date: 9-13-25

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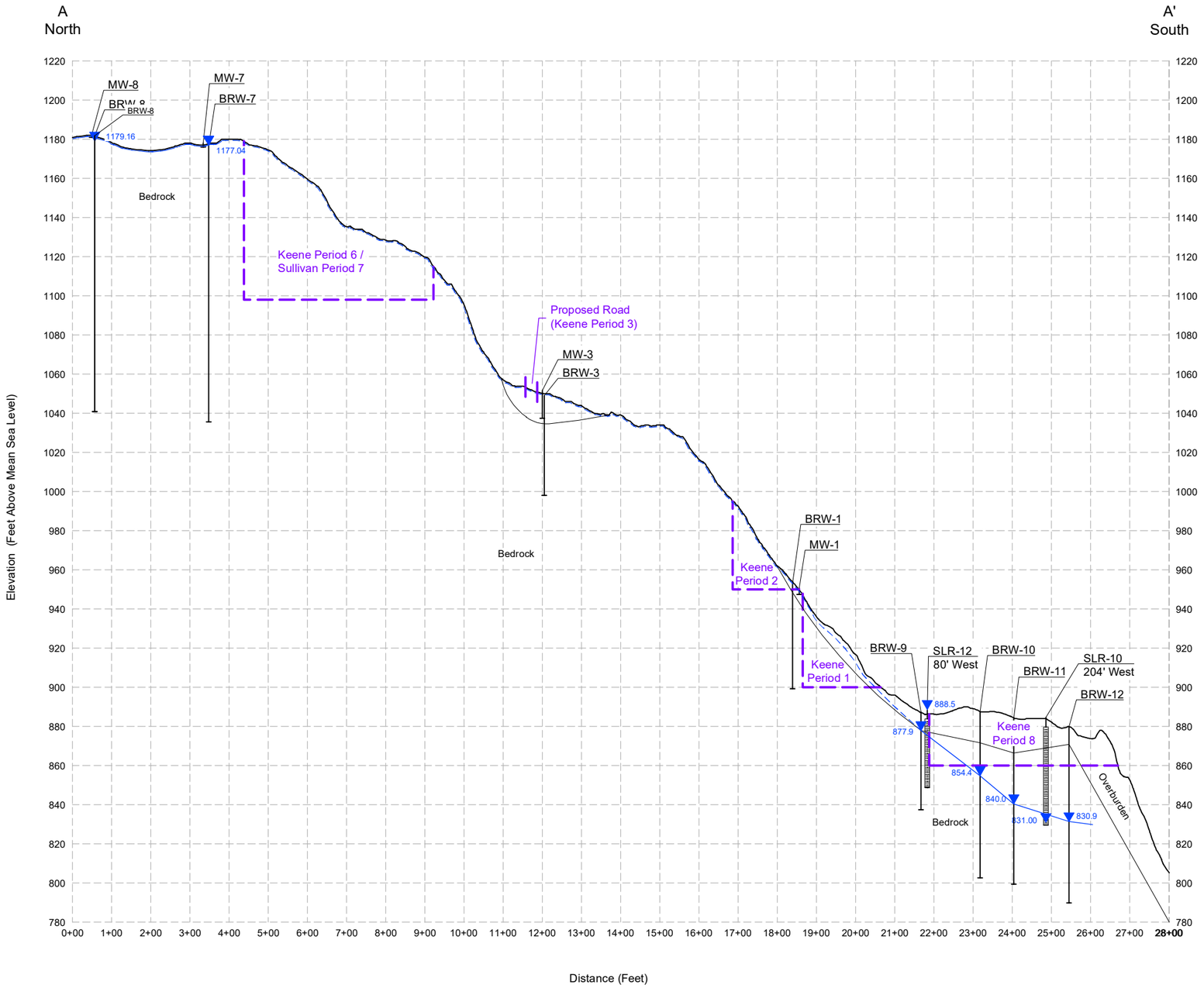


Figure 2

Groundwater Elevation Profile

Support of Planning Board Permit Review

City of Keene
Keene, New Hampshire

Drawn By: E. Wright
Designed By: R. Abell
Reviewed By: R. Abell
Project No: 6741.000
Date: August 2025

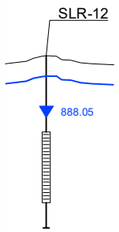
Notes

1. Ground surface topography developed from Connecticut River Watershed LiDAR data downloaded from GRANIT and dated 2015.

2. Well locations and groundwater elevations are based on data and information provided in the Gordon Services - Keene Pit, 2024 Hydrogeologic Investigation Report, 57 Route 9, Keene, New Hampshire, December 2024 and Addendum to: G2 Holdings - Keene Quarry Expansion - Hydrogeologic Investigation Report, 57 Route 9, Keene, NH, August 2025.

3. Water level elevations except BRW-9 through BRW-12 are from the December 2024 Hydrogeologic Investigation Report. Water level elevations for BRW-9 through BRW-12 provided on a figure entitled, "Monitoring Plan" prepared by Granite Engineering, of Manchester, New Hampshire. Dated May 2025, last revised August 11, 2025.

Legend



Monitoring Well

Ground Surface
Water Table
Groundwater Elevation (March 2024)

Screen Interval

Bottom of Boring

VERTICAL SCALE
30' 15' 0' 30' 60'
150' 75' 0' 150' 300'
HORIZONTAL SCALE

SANBORN HEAD

File:P:\6700s\6741.000\Graphics Files\CAD\Work\Cross\Section.dwg Plot Date: 8-13-25

GRANITE ENGINEERING, LLC
civil engineering ● land planning ● municipal services

August 11, 2025

City of Keene
Community Development Department – Planning and Zoning
3 Washington Street
Keene, New Hampshire 03431

RE: G2 Holdings, LLC
Tax Map 215 Lots 7 & 8
21 & 57 Route 9, Keene, NH
GE Project No. 2302011

Dear Ms. Fortson,

We are in receipt of a consultant review report, recieved June 5, 2025, relative to the review of the Earth Excavation Permit application, PB-2024-20, for the G2 Holdings, LLC project located at 21 & 57 Route 9. In addition to responses to your comments, please find the following material in support of the referenced project:

- Three (3) Copies of the Stormwater Management Report
- Three (3) Copies of the revised plans (22" x 34")
- Digital submission of the updated materials

In response to the comments made by Fieldstone Land Consultants, PLLC, we offer the following explanations and/or responses:

Section 25 Earth Excavation Permit:

2. Part of this comment does also include surface water impacts as it relates to the Stormwater Management Report. Fieldstone has reviewed this revised report and we do not believe that the revised report accurately portrays the project under the post-conditions. Currently many of the subcatchment areas do not include impervious areas or include small amounts of impervious areas. This project will be a bedrock mining operation and as such there will be exposed vertical ledge faces and the restoration will consist of bedrock covered with loam and seeded in many areas. In HydroCAD, a shallow ledge area should be modeled using a subcatchment with a high runoff curve number (CN) and a suitable time of concentration (Tc). The CN should reflect the shallow ledge's limited permeability, potentially using a CN value between 80 and 90. This in our opinion would more accurately represent the post-construction conditions and associated stormwater runoff.

A revised stormwater management report has been provided which includes modeling the disturbed areas within the gravel operation with a high CN value of 80, modeled as >75% Grass Cover, Good, HSG D. These soils have a high runoff potential, very low infiltration rates when thoroughly wetted, and consist chiefly of clay soils with a high swelling potential, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very low rate of water transmission (0-0.05 in/hr).

4. Section 25.3.3: The applicant's engineer has acknowledged that there is a conflict in the data provided but believes that the information submitted for Phase 1 by TFMoran likely does not accurately represent the conditions due to observed surface water in proximity to the well and therefore may be an anomaly. They have further stated that excavation within the groundwater is not permitted by MSHA and as such operation would cease at that time if groundwater was in fact encountered. They have also stated that the proposed stormwater features in this area are critical to the design of the site. We would recommend that further testing be performed in this area to support the current design or third-party inspection of this area be performed during construction to verify that groundwater is not present. If groundwater is encountered this could significantly modify the proposal for the project and any associated changes would require local review and approvals.

   One monitoring well and four additional bedrock wells we drilled to determine potential groundwater depths. Those results can be found on the Monitoring Plan, and are as follows:

   MW- 9 (9-feet deep) Dry
   BRW-9 (50-feet deep) SWL 6.40 BG
   BRW-10 (85-feet deep) SWL 25.5 BG
   BRW-11 (85-feet deep) SWL 41.43 BG
   BRW-12 (90-feet deep) SWL 51.82 BG

   The proposed pit floor in period 8 has been raised to provide the required 6' separation to excavation above the water table. The proposed pit floor in period 1, as well as the sedimentation basin (#7) have also been raised to provide the 6' separation from the water table.

6. Section 25.3.4.A.2: The water table drops 22+/- feet between SLR10 and SLR11 and it is a relatively short distance between these two locations. We would recommend an additional test site between the two locations to ensure adequate separation to seasonal high water. This stormwater management area is critical to the design and operation of this site. This additional testing could be done between phases as a condition of approval should the Board feel comfortable with this recommendation.

See response to #4 above.

11. Section 25.3.7: Fieldstone has reviewed this revised report and appreciates the additional information. As mentioned previously in this letter we do not believe that the revised report accurately portrays the project under the post-conditions due to the nature of the project. Currently many of the subcatchment areas do not include impervious areas or include small amounts of impervious areas. This project will be a bedrock mining operation and as such there will be exposed vertical ledge faces and the restoration will consist of bedrock covered with loam and seeded in many areas. In HydroCAD, a shallow ledge area should be modeled using a subcatchment with a high runoff curve number (CN) and a suitable time of concentration (Tc). The CN should reflect the shallow ledge's limited permeability, potentially using a CN value between 80 and 90. This in our opinion would more accurately represent the post-construction conditions and associated stormwater runoff.

See response to #2 above

Plan Review – General Review Comments:

10. Sheet 10 of 22 – The water table dropping 22+/- feet in this short distance is of concern. We would recommend an additional test site between the two locations to ensure adequate separation to seasonal high water. This stormwater management area is critical to the design and operation of this site. This additional testing could be done between phases as a condition of approval should the Board feel comfortable with this recommendation.

See response to #4 above.

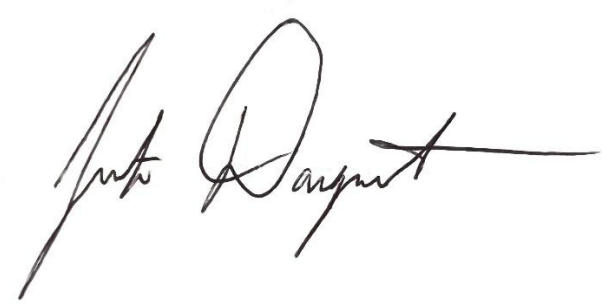
13. This response implies that these areas have been addressed or that the issues are not the responsibility of the owner. Staff should determine if they are satisfied with this response. The last topic appears to be an existing erosion problem that is ongoing and should in our opinion be better understood and addressed. The erosion and failure could result in downstream and environmental impacts if not addressed. We believe further understanding, evaluation and recommendations should be provided as it relates to this.

Although there is an existing stream on the adjacent property that has experienced historical erosion issues, our proposed project is located in a separate watershed. A perennial stream runs between the two sites and serves as a clear hydrologic divide. As such, any surface water generated by our project will not contribute to the flow or erosion concerns associated with the neighboring stream. Based on this separation, as well as the fact the

gravel operation is self contained, we do not anticipate any impact from our development on the existing erosion issues off-site.

We trust the noted plan revisions and/or explanations will adequately address the conditions listed above. Should you have any further questions or comments, please do not hesitate to contact this office.

Best Regards,



Justin Daigneault
Project Manager

Outlook

Re: Property Value Analysis Request

From Jim Manley <jmanley8@outlook.com>
Date Thu 7/31/2025 9:25 AM
To Mari Brunner <mbrunner@keenenh.gov>
Cc Friedrich K. Moeckel <fmoeckel@tarbellbrodich.com>; aham@keenesentinel.com <aham@keenesentinel.com>; Liz Newcombe <emnewcombe11@gmail.com>; Evan Clements <eclements@keenenh.gov>; Megan Fortson <mfortson@keenenh.gov>; Emily Duseau <eduseau@keenenh.gov>

Ideally this could be done for the 25 August meeting. I cannot see how an objective decision can be reached absent this analysis.

Also reviewing the minutes from the April Conservation Commission meeting a 3D visualization should be rendered, again for full transparency and objectivity.

Jim Manley

Sent from my iPhone

> On Jul 31, 2025, at 4:12 PM, Mari Brunner <mbrunner@keenenh.gov> wrote:
>
> Good morning Jim,
>
> We will pass this request on to the Planning Board for their consideration.
>
> Thank you,
> Mari
>
> -----Original Message-----
> From: Jim Manley <jmanley8@outlook.com>
> Sent: Thursday, July 31, 2025 3:17 AM
> To: Mari Brunner <mbrunner@keenenh.gov>
> Cc: Friedrich K. Moeckel <fmoeckel@tarbellbrodich.com>; aham@keenesentinel.com; Liz Newcombe <emnewcombe11@gmail.com>
> Subject: Property Value Analysis Request
>
> Good morning,
>
> Given a Planning Board member's comment on 28 July that "expert analysis outweighs citizen input " in the approval decision process, I hear-by request a formal analysis of impact to resident property values, particularly those within the 2500 foot "impact zone for well testing" be performed for years 0-14+.

This is a key analysis assessment which appears to be missing to make a fully informed decision.

Thank you for your consideration.

Best regards,

Jim Manley
67 Tyler Lane
Sullivan, NH 03445

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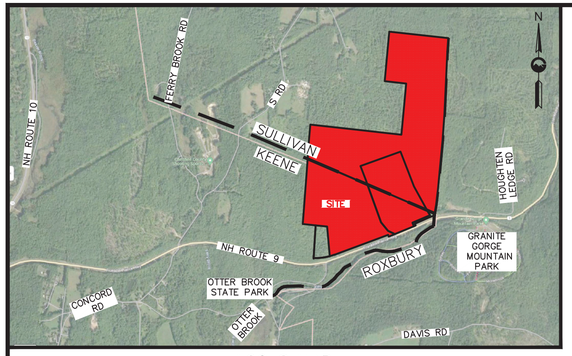
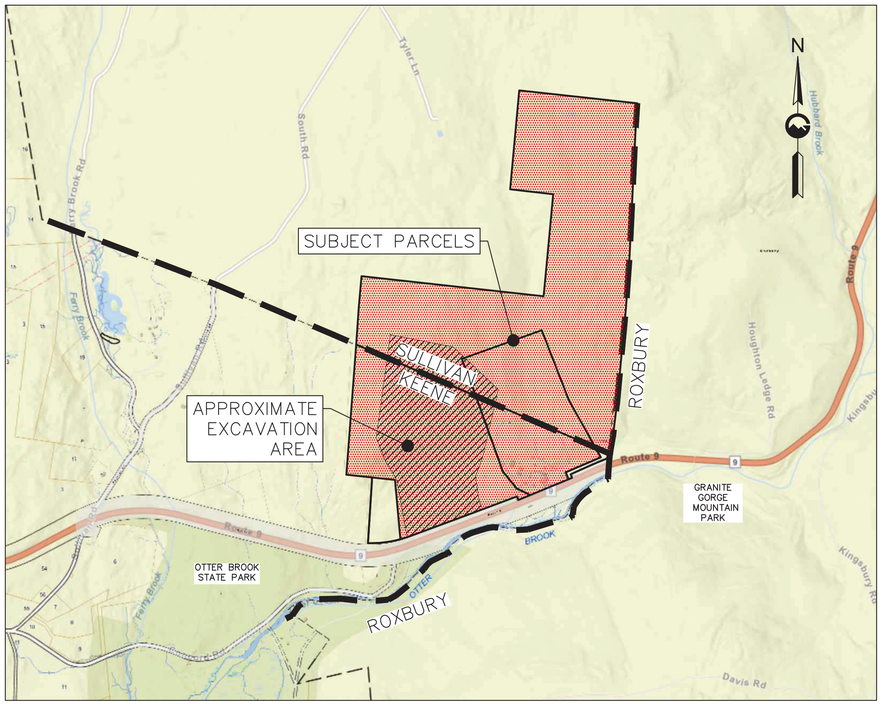
GRAVEL AND EARTH REMOVAL PLAN

G2 HOLDINGS, LLC

KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE, NEW HAMPSHIRE
CHESHIRE COUNTY



LOCUS MAP
SCALE: ±1"=2,000'



LOCATION PLAN
SCALE: 1"=1,000'

SHEET NO.	TABLE OF CONTENTS
1	OVERVIEW PLAN
2–3	EXISTING CONDITIONS PLAN WITH BOUNDARY LINES
4	CONTEXT PLAN
5–10	EXCAVATION, DRAINAGE & EROSION CONTROL PLAN
11–16	IMPACT CONTROL & MONITORING PLAN
17	MONITORING PLAN
18–19	RECLAMATION PLAN
20–23	DETAILS

OWNER & APPLICANT:
G2 HOLDINGS, LLC
250 NORTH STREET
JAFFREY, NH 03452
(603) 325–8457

CIVIL ENGINEER:
GRANITE ENGINEERING, LLC
150 DOW STREET, TOWER 2, STE 421
MANCHESTER, NH 03101
(603) 518–8030

WETLAND SCIENTIST:
ECOSYSTEMS LAND PLANNING
36 DUNKLEE STREET
CONCORD, NH 03301
(603) 224–6244

SURVEYOR:
SMITH & POSPESIL LAND SURVEYING, PLLC
240 QUEBEC ROAD
LYMAN, NH 03585
(603) 838–6494

SOIL SCIENTIST:
HURLEY ENVIRONMENTAL AND LAND PLANNING, LLC.
P.O. BOX 356
EPSOM, NH 03234
(603) 583–1745

HYDROGEOLOGIST:
FRONTIER GEOSERVICES, LLC.
127 OLD WARNER ROAD
BRADFORD, NH 03221
(603) 748–37155

GRANITE ENGINEERING
civil engineering • land planning • municipal services
150 Dow Street, Tower 2, Suite 421
Manchester,
New Hampshire 03101
603.518.8030
www.GraniteEng.com

STAMP:
STATE OF NEW HAMPSHIRE
BRENTON
COLE
No. 14744
8/11/25
LICENSED
PROFESSIONAL ENGINEER

REVISIONS			
No.	DATE	COMMENTS	BY
1	12/20/24	PROJECT SUBMITTAL	JD
2	2/3/25	REVISED PER CITY COMMENTS	JD
3	5/9/25	REVISED PER CITY COMMENTS	JD
4	7/9/25	REVISED PER CITY COMMENTS	JD
5	7/24/25	ADDITIONAL WELL LOCATIONS	JD
6	8/11/25	REVISED PER CITY COMMENTS	JD

P:\3x2302011\dwg\Production Plans\2302011-DETAILS.dwg, 8/7/2025 11:57:20 AM

GENERAL NOTES:

1. THE PURPOSE OF THIS PLAN IS TO ILLUSTRATE THE PROPOSED EXPANSION OF AN EXISTING GRAVEL AND EARTH REMOVAL OPERATION FOR G2 HOLDINGS, LLC ON CITY OF KEENE TAX MAP 215, LOTS 7 AND 8, AND INCLUDING TAX MAP 5, LOTS 46 AND 46–1 IN THE TOWN OF SULLIVAN.
2. CURRENT USE OF THE PROPERTY IS FOR GRAVEL AND EARTH REMOVALS.
3. AREA OF SUBJECT PARCEL = 101.27 ACRES (CITY OF KEENE), 197.82 ACRES (SULLIVAN)
4. OWNERS OF RECORD:
   G2 HOLDINGS, LLC
   250 NORTH STREET
   JAFFREY, NH 03452
5. THE SUBJECT PARCEL IS LOCATED WITHIN THE CITY OF KEENE AND TOWN OF SULLIVAN R (RURAL) ZONING DISTRICTS AND SUBJECT TO THE FOLLOWING DIMENSIONAL REGULATIONS:

KEENE

	REQUIRED	EXISTING LOT 7	EXISTING LOT 8
MIN. LOT AREA	2 AC	76.89 AC	24.38 AC
MIN. LOT FRONTAGE	50 FT	1,716.9 FT	545 FT
MIN. FRONT YARD	50 FT	N/A	70 FT
MIN. SIDE YARD	50 FT	N/A	132 FT
MIN. REAR YARD	50 FT	N/A	408 FT
EXCAVATION SETBACK	300 FT	322 FT	N/A

SULLIVAN

	REQUIRED	EXISTING LOT 46–1	EXISTING LOT 46
MIN. LOT AREA	2 AC	28.1± AC	169.0± AC
MIN. LOT FRONTAGE	200 FT	N/A	N/A
MIN. FRONT YARD SETBACK	50 FT	N/A	N/A
MIN. SIDE YARD SETBACK	20 FT	N/A	N/A
MIN. REAR YARD SETBACK	20 FT	N/A	N/A
EXCAVATION SETBACK TO BUILDINGS	150 FT	N/A	N/A
MIN. EXCAVATION SETBACK FROM ABUTTERS	50 FT	N/A	371 FT

6. BASE SURVEY INFORMATION INCLUDING BOUNDARY, EXISTING FEATURES, AND TOPOGRAPHY SHOWN ON THIS PLAN ARE TAKEN FROM PLAN REFERENCES AND FIELD SURVEY BY SMITH & POSPESIL LAND SURVEYING COMPANY, PLLC IN AUGUST 2022.
7. TOPOGRAPHIC INFORMATION SHOWN WITHIN THE AREA OF DISTURBANCE IS TAKEN FROM FIELD SURVEY BY SMITH & POSPESIL LAND SURVEYING COMPANY, PLLC IN OCTOBER 2022 AND MAY OF 2023.
8. HORIZONTAL DATUM IS ON THE NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM NAD83 (2011).
9. VERTICAL DATUM IS NAVD 88.
10. EXCAVATION SITE, DESIGNED BY TFM WAIVERS APPROVED BY THE KEENE PLANNING BOARD OF ADJUSTMENTS ON AUGUST 22, 2022:
    - 24.3.1.A (200' PUBLIC ROW SETBACK) – GRANTED
    - 24.3.1.C. (150' ACCESS DRIVEWAY SETBACK) – GRANTED
    - 24.3.1.D. (SURFACE WATER RESOURCE SETBACKS) – GRANTED
    - 24.3.4 (GROUNDWATER QUANTITY BASELINE MEASUREMENTS) – GRANTED
    - 24.3.5 (GROUNDWATER QUALITY BASELINE MEASUREMENTS – GRANTED
    - 24.3.13 (MAXIMUM EXCAVATION AREA) – GRANTED
11. EXCAVATION SITE, DESIGNED BY TFM CONDITIONAL USE PERMIT APPROVED BY THE KEENE PLANNING BOARD OF ADJUSTMENTS ON AUGUST 22, 2022 – KEENE HILLSIDE PROTECTION
12. KEENE ZBA SPECIAL EXCEPTION FOR GRAVEL PIT USE – GRANTED 8/22/2022
13. THE FOLLOWING ARE REQUESTED FROM THE CITY OF KEENE PLANNING BOARD:
    - 25.3.1.D. (SURFACE WATER RESOURCE SETBACKS) – WAIVER REQUIRED
    - 25.3.13 (MAXIMUM EXCAVATION AREA) – WAIVER REQUIRED
    - 25.3.6 (TOXIC OR ACID FORMING MATERIALS) – WAIVER REQUIRED
14. THE PROJECT REQUIRES THE FOLLOWING STATE, FEDERAL, AND LOCAL PERMITS:

PERMIT	STATUS	PERMIT NO.
NHDES AOT	PENDING	
KEENE HILLSIDE PROTECTION – CONDITIONAL USE PERMIT	PENDING	
KEENE EARTH EXCAVATION	PENDING	

15. WETLAND MAPPING PERFORMED BY JOHN ST. JOHN OF ECOSYSTEMS LAND PLANNING IN OCTOBER–NOVEMBER 2023.
16. EXAMINATION OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) FOR CHESHIRE COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33005C0165E, EFFECTIVE DATE 05/23/2006 INDICATES THAT NO PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA.
17. LOCATION OF ANY UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. GRANITE ENGINEERING, LLC MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
18. THIS PROJECT DISTURBS IN EXCESS OF 1–ACRE OF LAND. THEREFORE, WILL BE REQUIRED TO OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE AS ISSUED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THE OWNER/DEVELOPER AND "OPERATOR" (APPLICANT) SHALL EACH BE REQUIRED TO PREPARE AND SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA PRIOR TO THE START OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR THE PREPARATION AND IMPLEMENTATION OF A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MEETING THE REQUIREMENTS OF THE CURRENT CONSTRUCTION GENERAL PERMIT.
19. AREAS OF DISTURBANCE SHALL NOT EXCEED 5 ACRES AT A TIME. IN ORDER FOR AREAS TO BE EXCLUDED OF THIS 5 ACRE MAXIMUM, THEY MUST BE STABILIZED. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    A. BASE COURSE GRAVELS ARE INSTALLED;
    B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
    C. A MINIMUM OF 3" OF NON–EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR EROSION CONTROL BLANKET HAVE BEEN PROPERLY INSTALLED.
20. THE APPROXIMATE AMOUNT OF MATERIAL PROPOSED TO BE EXCAVATED WITHIN THE CITY OF KEENE IS IS 1,215,748± CUBIC YARDS AND FOR THE TOTAL PROJECT IS 1,522,897± CUBIC YARDS.
21. WITHIN THE CITY OF KEENE, NO EXCAVATION WILL BE PERFORMED WITHIN 75' OF MAPPED WETLANDS, NO EXCAVATION WITHIN 250' OF MAPPED WETLANDS WITHOUT APPROVAL FROM THE PLANNING BOARD, ACCESS ROADS WITHIN 150' FROM WETLANDS WITHOUT APPROVAL FROM THE PLANNING BOARD, AND 300' OF ABUTTING PROPERTIES. WITHIN THE TOWN OF SULLIVAN, NO EXCAVATION WILL BE PERFORMED WITHIN 50' OF ABUTTING PROPERTIES THAT DISPROVE, AND 10' FROM ABUTTING PROPERTIES THAT APPROVE OF THE GRAVEL OPERATION. NO EXCAVATION SHALL BE PERMITTED WITHIN 75 FEET OF ANY GREAT POND, NAVIGABLE RIVER, OR ANY OTHER STANDING BODY OF WATER 10 ACRES OR MORE IN AREA, OR WITHIN 25 FEET OF ANY OTHER STREAM, RIVER OR BROOK WHICH NORMALLY FLOWS THROUGHOUT THE YEAR, OR ANY NATURALLY OCCURRING STANDING BODY OF WATER LESS THAN 10 ACRES, PRIME WETLANDS AS DESIGNATED IN ACCORDANCE WITH RSA 482–A:15, I OR ANY OTHER WETLAND GREATER THAN 5 ACRES IN AREA AS DEFINED BY THE WETLANDS BOARD. NO EXCAVATION SHALL BE PERMITTED CLOSER THAN 150 FEET TO AN EXISTING DWELLING OR TO A SITE FOR WHICH A BUILDING PERMIT HAS BEEN ISSUED AT THE TIME THE EXCAVATION PERMIT IS GRANTED. NO EXCAVATION SHALL BE PERMITTED PERMITTED BELOW ROAD LEVELS WITHIN 50 FEET OF THE RIGHT–OF–WAY OF ANY PUBLIC HIGHWAY AS DEFINED IN RSA 229:1 UNLESS SUCH EXCAVATION IS FOR THE PURPOSE OF SAID HIGHWAY. VEGETATION SHALL BE MAINTAINED OR PROVIDED WITHIN THE PERIPHERAL AREAS REQUIRED AS MENTIONED.
22. IN ORDER TO OPERATE A GRAVEL OPERATION, GRAVEL EQUIPMENT WILL BE STORED ON SITE. THIS EQUIPMENT WILL CONSIST OF, BUT NOT LIMITED TO, BULLDOZERS, LOADERS, HAULER, EXCAVATORS, WATER TRUCKS, AND PROCESSORS. IN ORDER TO PROVIDE THE FURTHEST SEPARATION TO ABUTTING PROPERTIES, ALL PROCESSING EQUIPMENT WILL BE CENTRALLY LOCATED.
23. A COPY OF THE APPROVED GRAVEL AND EARTH REMOVAL PLAN SHALL BE ON SITE AT ALL TIMES.
24. PLOWED SNOW FROM THE OPERATION SHALL BE MAINTAINED AND ON SITE WITHIN THE CONTAINED AREA.
25. TRUCKS UTILIZED FOR TRANSPORT OF MATERIAL WILL CONSIST OF TRI–AXLES, 10–WHEELERS, AND TRACTOR TRAILER DUMP TRUCKS. THE ANTICIPATED MAXIMUM NUMBER OF VEHICLE TRIPS PER DAY BASED ON CURRENT PIT OPERATIONS IS 60 TRIPS PER DAY.
26. THE ESTIMATED PROJECT TIME FRAME WILL EXCEED FIVE YEARS. THE ANTICIPATED SCHEDULE IS EXPECTED TO START IN JANUARY 2025 AND LAST UNTIL APRIL 2038. THE APPLICANT MUST SUBMIT TO THE DEPARTMENT OF ENVIRONMENTAL SERVICES, THE CITY OF KEENE, AND THE TOWN OF SULLIVAN A WRITTEN UPDATE OF THE PROJECT AND REVISED PLANS DOCUMENTING THE PROJECT STATUS EVERY FIVE YEARS FROM THE DATE OF THE ALTERATION OF TERRAIN PERMIT.
27. ALL LOGS REQUIRED TO BE MAINTAINED BY THE APPLICANT/OPERATOR SHALL BE RETAINED BY THE APPLICANT FOR A PERIOD OF NOT LESS THAN 5–YEARS AND SHALL BE MADE AVAILABLE TO THE COMMUNITY DEVELOPMENT DEPARTMENT, OR ITS DESIGNATED AGENT, UPON REQUEST.
28. WITHIN THE TOWN OF SULLIVAN, ANY ADDITION, EXPANSION, OR ALTERATION OF AN EXISTING USE FOR WHICH A SPECIAL EXCEPTION HAD BEEN GRANTED MUST RECEIVE A NEW SPECIAL EXCEPTION IF THERE IS AN EXPANSION OF THE AREA OF THE EXISTING STRUCTURE OR EXPANSION INTO NEW LAND FOR WHICH A SPECIAL EXCEPTION HAS NOT BEEN GRANTED

EXCAVATION NOTES:

KEENE PERIOD 1 – EXCAVATION AREA: 5.30 AC, EXCAVATION PERIMETER: 2,451 FT
119,901 CU.YD. CUT, SEPTEMBER 2025 – JANUARY 2028

KEENE PERIOD 2 – EXCAVATION AREA: 4.10 AC, EXCAVATION PERIMETER: 2,674 FT
271,000 CU.YD. CUT, FEB 2028 – NOVEMBER 2029

KEENE PERIOD 3 – EXCAVATION AREA: 2.14 AC, EXCAVATION PERIMETER: 3,780 FT
16,450 CU.YD. CUT, DECEMBER 2029 – JANUARY 2029

SULLIVAN PERIOD 4 – EXCAVATION AREA: 0.39 AC, EXCAVATION PERIMETER: 947 FT
939 CU.YD. CUT, FEB 2030 – MARCH 2030

KEENE PERIOD 5 – EXCAVATION AREA: 4.08 AC, EXCAVATION PERIMETER: 1,724 FT
366,530 CU.YD. CUT, APRIL 2030 – SEPTEMBER 2031

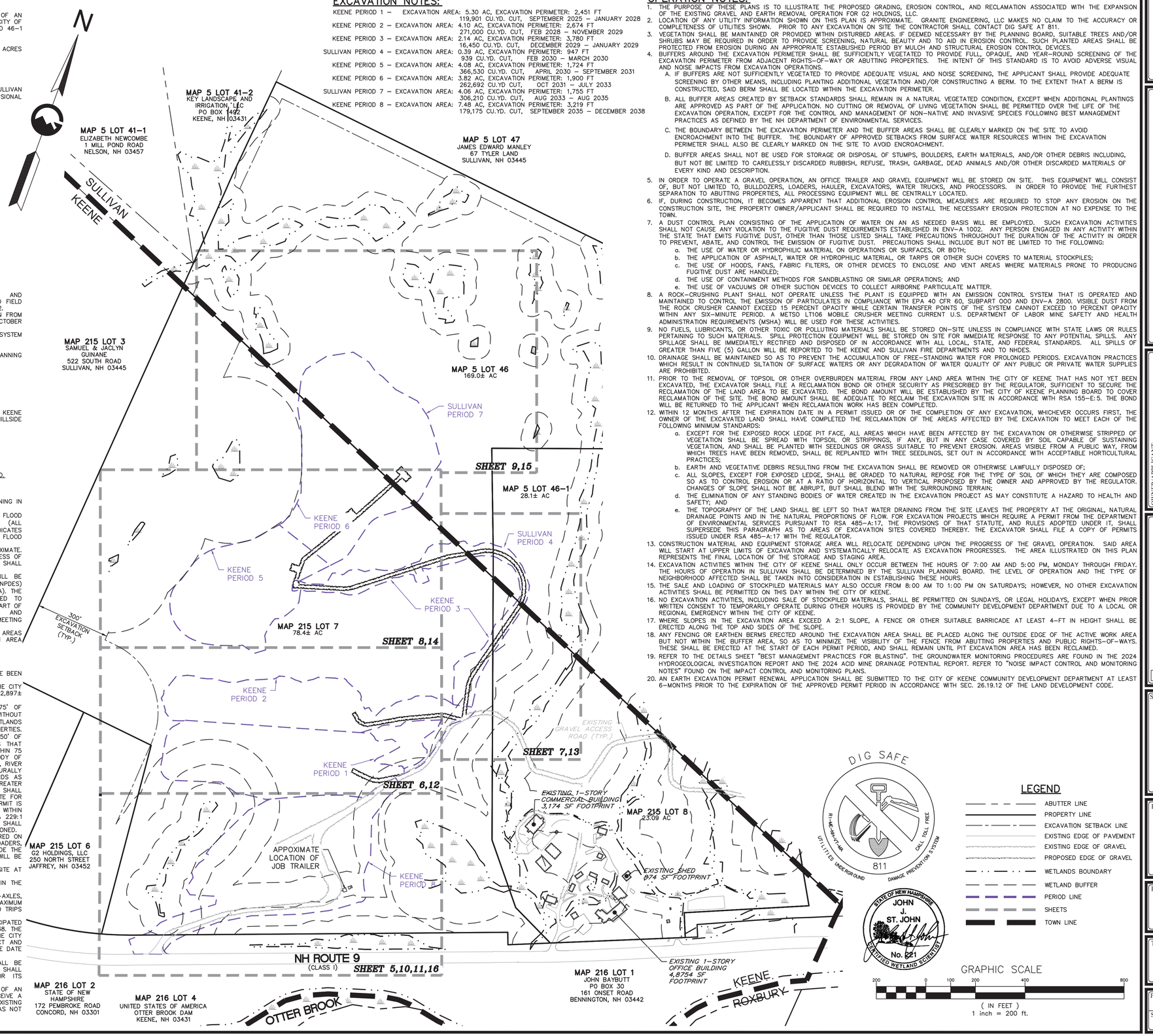
KEENE PERIOD 6 – EXCAVATION AREA: 3.82 AC, EXCAVATION PERIMETER: 1,900 FT
262,692 CU.YD CUT, OCT 2031 – JULY 2033

SULLIVAN PERIOD 7 – EXCAVATION AREA: 4.06 AC, EXCAVATION PERIMETER: 1,755 FT
306,210 CU.YD. CUT, AUG 2033 – AUG 2035

KEENE PERIOD 8 – EXCAVATION AREA: 7.48 AC, EXCAVATION PERIMETER: 3,219 FT
179,175 CU.YD. CUT, SEPTEMBER 2035 – DECEMBER 2038

OPERATION NOTES:

1. THE PURPOSE OF THESE PLANS IS TO ILLUSTRATE THE PROPOSED GRADING, EROSION CONTROL, AND RECLAMATION ASSOCIATED WITH THE EXPANSION OF THE EXISTING GRAVEL AND EARTH REMOVAL OPERATION FOR G2 HOLDNGS, LLC.
2. LOCATION OF ANY UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. GRANITE ENGINEERING, LLC MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
3. VEGETATION SHALL BE MAINTAINED OR PROVIDED WITHIN DISTURBED AREAS. IF DEEMED NECESSARY BY THE PLANNING BOARD, SUITABLE TREES AND/OR SHRUBS MAY BE REQUIRED IN ORDER TO PROVIDE SCREENING, NATURAL BEAUTY AND TO AID IN EROSION CONTROL. SUCH PLANTED AREAS SHALL BE PROTECTED FROM EROSION DURING AN APPROPRIATE ESTABLISHED PERIOD BY MULCH AND STRUCTURAL EROSION CONTROL DEVICES.
4. BUFFERS AROUND THE EXCAVATION PERIMETER SHALL BE SUFFICIENTLY VEGETATED TO PROVIDE FULL, OPAQUE, AND YEAR–ROUND SCREENING OF THE EXCAVATION PERIMETER FROM ADJACENT RIGHTS–OF–WAY OR ABUTTING PROPERTIES. THE INTENT OF THIS STANDARD IS TO AVOID ADVERSE VISUAL AND NOISE IMPACTS FROM EXCAVATION OPERATIONS.
   A. IF BUFFERS ARE NOT SUFFICIENTLY VEGETATED TO PROVIDE ADEQUATE VISUAL AND NOISE SCREENING, THE APPLICANT SHALL PROVIDE ADEQUATE SCREENING BY OTHER MEANS, INCLUDING PLANTING ADDITIONAL VEGETATION AND/OR CONSTRUCTING A BERM. TO THE EXTENT THAT A BERM IS CONSTRUCTED, SAID BERM SHALL BE LOCATED WITHIN THE EXCAVATION PERIMETER.
   B. ALL BUFFER AREAS CREATED BY SETBACK STANDARDS SHALL REMAIN IN A NATURAL VEGETATED CONDITION, EXCEPT WHEN ADDITIONAL PLANTINGS ARE APPROVED AS PART OF THE APPLICATION. NO CUTTING OR REMOVAL OF LIVING VEGETATION SHALL BE PERMITTED OVER THE LIFE OF THE EXCAVATION OPERATION, EXCEPT FOR THE CONTROL AND MANAGEMENT OF NON–NATIVE AND INVASIVE SPECIES FOLLOWING BEST MANAGEMENT PRACTICES AS DEFINED BY THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES.
   C. THE BOUNDARY BETWEEN THE EXCAVATION PERIMETER AND THE BUFFER AREAS SHALL BE CLEARLY MARKED ON THE SITE TO AVOID ENCROACHMENT INTO THE BUFFER. THE BOUNDARY OF APPROVED SETBACKS FROM SURFACE WATER RESOURCES WITHIN THE EXCAVATION PERIMETER SHALL ALSO BE CLEARLY MARKED ON THE SITE TO AVOID ENCROACHMENT.
   D. BUFFER AREAS SHALL NOT BE USED FOR STORAGE OR DISPOSAL OF STUMPS, BOULDERS, EARTH MATERIALS, AND/OR OTHER DEBRIS INCLUDING, BUT NOT BE LIMITED TO CARELESSLY DISCARDED RUBBISH, REFUSE, TRASH, GARBAGE, DEAD ANIMALS AND/OR OTHER DISCARDED MATERIALS OF EVERY KIND AND DESCRIPTION.
5. IN ORDER TO OPERATE A GRAVEL OPERATION, AN OFFICE TRAILER AND GRAVEL EQUIPMENT WILL BE STORED ON SITE. THIS EQUIPMENT WILL CONSIST OF, BUT NOT LIMITED TO, BULLDOZERS, LOADERS, HAULER, EXCAVATORS, WATER TRUCKS, AND PROCESSORS. IN ORDER TO PROVIDE THE FURTHEST SEPARATION TO ABUTTING PROPERTIES, ALL PROCESSING EQUIPMENT WILL BE CENTRALLY LOCATED.
6. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE, THE PROPERTY OWNER/APPLICANT SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE TOWN.
7. A DUST CONTROL PLAN CONSISTING OF THE APPLICATION OF WATER ON AN AS NEEDED BASIS WILL BE EMPLOYED. SUCH EXCAVATION ACTIVITIES SHALL NOT CAUSE ANY VIOLATION TO THE FUGITIVE DUST REQUIREMENTS ESTABLISHED IN ENV–A 1002. ANY PERSON ENGAGED IN ANY ACTIVITY WITHIN THE STATE THAT EMITS FUGITIVE DUST, OTHER THAN THOSE LISTED SHALL TAKE PRECAUTIONS THROUGHOUT THE DURATION OF THE ACTIVITY IN ORDER TO PREVENT, ABATE, AND CONTROL THE EMISSION OF FUGITIVE DUST. PRECAUTIONS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
   a. THE USE OF WATER OR HYDROPHILIC MATERIAL ON OPERATIONS OR SURFACES, OR BOTH;
   b. THE APPLICATION OF ASPHALT, WATER OR HYDROPHILIC MATERIAL, OR TARPS OR OTHER SUCH COVERS TO MATERIAL STOCKPILES;
   c. THE USE OF HOODS, FANS, FABRIC FILTERS, OR OTHER DEVICES TO ENCLOSE AND VENT AREAS WHERE MATERIALS PRONE TO PRODUCING FUGITIVE DUST ARE HANDLED;
   d. THE USE OF CONTAINMENT METHODS FOR SANDBLASTING OR SIMILAR OPERATIONS; AND
   e. THE USE OF VACUUMS OR OTHER SUCTION DEVICES TO COLLECT AIRBORNE PARTICULATE MATTER.
8. A ROCK–CRUSHING PLANT SHALL NOT OPERATE UNLESS THE PLANT IS EQUIPPED WITH AN EMISSION CONTROL SYSTEM THAT IS OPERATED AND MAINTAINED TO CONTROL THE EMISSION OF PARTICULATES IN COMPLIANCE WITH EPA 40 CFR 60, SUBPART OOO AND ENV–A 2800. VISIBLE DUST FROM THE ROCK CRUSHER CANNOT EXCEED 15 PERCENT OPACITY WHILE CERTAIN TRANSFER POINTS OF THE SYSTEM CANNOT EXCEED 10 PERCENT OPACITY WITHIN ANY SIX–MINUTE PERIOD. A METSO LT106 MOBILE CRUSHER MEETING CURRENT U.S. DEPARTMENT OF LABOR MINE SAFETY AND HEALTH ADMINISTRATION REQUIREMENTS (MSHA) WILL BE USED FOR THESE ACTIVITIES.
9. NO FUELS, LUBRICANTS, OR OTHER TOXIC OR POLLUTING MATERIALS SHALL BE STORED ON–SITE UNLESS IN COMPLIANCE WITH STATE LAWS OR RULES PERTAINING TO SUCH MATERIALS. SPILL PROTECTION EQUIPMENT WILL BE STORED ON SITE FOR IMMEDIATE RESPONSE TO ANY POTENTIAL SPILLS. ANY SPILLAGE SHALL BE IMMEDIATELY RECTIFIED AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL STANDARDS. ALL SPILLS OF GREATER THAN FIVE (5) GALLON WILL BE REPORTED TO THE KEENE AND SULLIVAN FIRE DEPARTMENTS AND TO NHDES.
10. DRAINAGE SHALL BE MAINTAINED SO AS TO PREVENT THE ACCUMULATION OF FREE–STANDING WATER FOR PROLONGED PERIODS. EXCAVATION PRACTICES WHICH RESULT IN CONTINUED SILTATION OF SURFACE WATERS OR ANY DEGRADATION OF WATER QUALITY OF ANY PUBLIC OR PRIVATE WATER SUPPLIES ARE PROHIBITED.
11. PRIOR TO THE REMOVAL OF TOPSOIL OR OTHER OVERBURDEN MATERIAL FROM ANY LAND AREA WITHIN THE CITY OF KEENE THAT HAS NOT YET BEEN EXCAVATED, THE EXCAVATOR SHALL FILE A RECLAMATION BOND OR OTHER SECURITY AS PRESCRIBED BY THE REGULATOR, SUFFICIENT TO SECURE THE RECLAMATION OF THE LAND AREA TO BE EXCAVATED. THE BOND AMOUNT WILL BE ESTABLISHED BY THE CITY OF KEENE PLANNING BOARD TO COVER RECLAMATION OF THE SITE. THE BOND AMOUNT SHALL BE ADEQUATE TO RECLAIM THE EXCAVATION SITE IN ACCORDANCE WITH RSA 155–E:5. THE BOND WILL BE RETURNED TO THE APPLICANT WHEN RECLAMATION WORK HAS BEEN COMPLETED.
12. WITHIN 12 MONTHS AFTER THE EXPIRATION DATE IN A PERMIT ISSUED OR OF THE COMPLETION OF ANY EXCAVATION, WHICHEVER OCCURS FIRST, THE OWNER OF THE EXCAVATED LAND SHALL HAVE COMPLETED THE RECLAMATION OF THE AREAS AFFECTED BY THE EXCAVATION TO MEET EACH OF THE FOLLOWING MINIMUM STANDARDS:
   a. EXCEPT FOR THE EXPOSED ROCK LEDGE PIT FACE, ALL AREAS WHICH HAVE BEEN AFFECTED BY THE EXCAVATION OR OTHERWISE STRIPPED OF VEGETATION SHALL BE SPREAD WITH TOPSOIL OR STRIPPINGS, IF ANY, BUT IN ANY CASE COVERED BY SOIL CAPABLE OF SUSTAINING VEGETATION, AND SHALL BE PLANTED WITH SEEDLINGS OR GRASS SUITABLE TO PREVENT EROSION. AREAS VISIBLE FROM A PUBLIC WAY, FROM WHICH TREES HAVE BEEN REMOVED, SHALL BE REPLANTED WITH TREE SEEDLINGS, SET OUT IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES;
   b. EARTH AND VEGETATIVE DEBRIS RESULTING FROM THE EXCAVATION SHALL BE REMOVED OR OTHERWISE LAWFULLY DISPOSED OF;
   c. ALL SLOPES, EXCEPT FOR EXPOSED LEDGE, SHALL BE GRADED TO NATURAL REPOSE FOR THE TYPE OF SOIL OF WHICH THEY ARE COMPOSED SO AS TO CONTROL EROSION OR AT A RATIO OF HORIZONTAL TO VERTICAL PROPOSED BY THE OWNER AND APPROVED BY THE REGULATOR. CHANGES OF SLOPE SHALL NOT BE ABRUPT, BUT SHALL BLEND WITH THE SURROUNDING TERRAIN;
   d. THE ELIMINATION OF ANY STANDING BODIES OF WATER CREATED IN THE EXCAVATION PROJECT AS MAY CONSTITUTE A HAZARD TO HEALTH AND SAFETY; AND
   e. THE TOPOGRAPHY OF THE LAND SHALL BE LEFT SO THAT WATER DRAINING FROM THE SITE LEAVES THE PROPERTY AT THE ORIGINAL, NATURAL DRAINAGE POINTS AND IN THE NATURAL PROPORTIONS OF FLOW. FOR EXCAVATION PROJECTS WHICH REQUIRE A PERMIT FROM THE DEPARTMENT OF ENVIRONMENTAL SERVICES PURSUANT TO RSA 485–A:17, THE PROVISIONS OF THAT STATUTE, AND RULES ADOPTED UNDER IT, SHALL SUPERSEDE THIS PARAGRAPH AS TO AREAS OF EXCAVATION SITES COVERED THEREBY. THE EXCAVATOR SHALL FILE A COPY OF PERMITS ISSUED UNDER RSA 485–A:17 WITH THE REGULATOR.
13. CONSTRUCTION MATERIAL AND EQUIPMENT STORAGE AREA WILL RELOCATE DEPENDING UPON THE PROGRESS OF THE GRAVEL OPERATION. SAID AREA WILL START AT UPPER LIMITS OF EXCAVATION AND SYSTEMATICALLY RELOCATE AS EXCAVATION PROGRESSES. THE AREA ILLUSTRATED ON THIS PLAN REPRESENTS THE FINAL LOCATION OF THE STORAGE AND STAGING AREA.
14. EXCAVATION ACTIVITIES WITHIN THE CITY OF KEENE SHALL ONLY OCCUR BETWEEN THE HOURS OF 7:00 AM AND 5:00 PM, MONDAY THROUGH FRIDAY. THE HOURS OF OPERATION IN SULLIVAN SHALL BE DETERMINED BY THE SULLIVAN PLANNING BOARD. THE LEVEL OF OPERATION AND THE TYPE OF NEIGHBORHOOD AFFECTED SHALL BE TAKEN INTO CONSIDERATION IN ESTABLISHING THESE HOURS.
15. THE SALE AND LOADING OF STOCKPILED MATERIALS MAY ALSO OCCUR FROM 8:00 AM TO 1:00 PM ON SATURDAYS; HOWEVER, NO OTHER EXCAVATION ACTIVITIES SHALL BE PERMITTED ON THIS DAY WITHIN THE CITY OF KEENE.
16. NO EXCAVATION ACTIVITIES, INCLUDING SALE OF STOCKPILED MATERIALS, SHALL BE PERMITTED ON SUNDAYS, OR LEGAL HOLIDAYS, EXCEPT WHEN PRIOR WRITTEN CONSENT TO TEMPORARILY OPERATE DURING OTHER HOURS IS PROVIDED BY THE COMMUNITY DEVELOPMENT DEPARTMENT DUE TO A LOCAL OR REGIONAL EMERGENCY WITHIN THE CITY OF KEENE.
17. WHERE SLOPES IN THE EXCAVATION AREA EXCEED A 2:1 SLOPE, A FENCE OR OTHER SUITABLE BARRICADE AT LEAST 4–FT IN HEIGHT SHALL BE ERECTED ALONG THE TOP AND SIDES OF THE SLOPE.
18. ANY FENCING OR EARTHEN BERMS ERECTED AROUND THE EXCAVATION AREA SHALL BE PLACED ALONG THE OUTSIDE EDGE OF THE ACTIVE WORK AREA BUT NOT WITHIN THE BUFFER AREA, SO AS TO MINIMIZE THE VISIBILITY OF THE FENCE FROM ABUTTING PROPERTIES AND PUBLIC RIGHTS–OF–WAYS. THESE SHALL BE ERECTED AT THE START OF EACH PERMIT PERIOD, AND SHALL REMAIN UNTIL PIT EXCAVATION AREA HAS BEEN RECLAIMED.
19. REFER TO THE DETAILS SHEET "BEST MANAGEMENT PRACTICES FOR BLASTING". THE GROUNDWATER MONITORING PROCEDURES ARE FOUND IN THE 2024 HYDROGEOLOGICAL INVESTIGATION REPORT AND THE 2024 ACID MINE DRAINAGE POTENTIAL REPORT. REFER TO "NOISE IMPACT CONTROL AND MONITORING NOTES" FOUND ON THE IMPACT CONTROL AND MONITORING PLANS.
20. AN EARTH EXCAVATION PERMIT RENEWAL APPLICATION SHALL BE SUBMITTED TO THE CITY OF KEENE COMMUNITY DEVELOPMENT DEPARTMENT AT LEAST 6–MONTHS PRIOR TO THE EXPIRATION OF THE APPROVED PERMIT PERIOD IN ACCORDANCE WITH SEC. 26.19.12 OF THE LAND DEVELOPMENT CODE.



GRANITE ENGINEERING
civil engineering
land planning
municipal services

REVISIONS

No.	DATE	COMMENTS	BY
1	12/20/24	PROJECT SUBMITTAL	JD
2	2/3/25	REVISED PER CITY COMMENTS	JD
3	5/5/25	REVISED PER CITY COMMENTS	JD
4	7/9/25	REVISED PER CITY COMMENTS	JD
5	7/24/25	ADDITIONAL WELL LOCATIONS	JD
6	8/11/25	REVISED PER CITY COMMENTS	JD

OWNER/APPLICANT:
G2 HOLDINGS, LLC
250 NORTH STREET
JAFFREY, NH 03452

GRANITE ENGINEERING
civil engineering ● land planning ● municipal services
150 Dow Street, Tower 2, Suite 421
Manchester, New Hampshire 03101
603.518.8030
www.GraniteEng.com

STAMP:
STATE OF NEW HAMPSHIRE
BRENTON J. COLE
No. 14744
8/11/25
LICENSED PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES
KEENE

TITLE:
OVERVIEW PLAN

PROJECT No.	DATE:	SCALE:
23–0201–1	MAY 9, 2025	HORIZ. 1"=200'
SHEET:	1 OF 23	

P:\JOBS\2302011\Design\Production Plans\2302011_SITE.dwg, 8/7/2025 11:48:28 AM

NEW HAMPSHIRE STATE PLANE
COORDINATE SYSTEM NAD 83
MAGNETIC DECLINATION: 13° 53' W
CONVERGENCE ANGLE -0°22'39"
OBSERVATION DATE: MAY, 2023
COMBINED SCALE FACTOR: 0.99995790.

LIMIT OF DISTURBANCE
AS OF 5/31/2023

G2 HOLDINGS, LLC
KEENE TM 215 LOT 7
78.4 +/- AC

G2 HOLDINGS, LLC
KEENE TM 215 LOT 6
7.02 AC

LINES NOT SURVEYED

S 05°13'18" E
787.52'

CHIPSTONE
1 1/2" STONE
3/4" STONE
STOCKPILES
RIP RAP
RIP RAP
SAND
PROCESSING EQUIPMENT
CRUSHING PILE
NO TRESPASS
LOAM
LOAM
STOCKPILES
LOAM
BERM
CONCRETE
3/4" STONE
ROUGH LOAM
1 1/2" GRAVEL
FUEL STORAGE
TEMP. OFFICE
GATE
GAURDRAIL
SIGN 10 MPH

S 69°36'46" W
22.80'

L = 123.55'
R = 1432.50'
CH = N 72°05'03" E
CL = 123.54'

S 69°36'46" W
855.33'

S 69°32'32" W
638.48'

BUSINESS SIGN

PAVED ENTRANCE

EX CULV
24" HDPE
INV IN: 807.2
INV OUT: 800.1

NH ROUTE 9

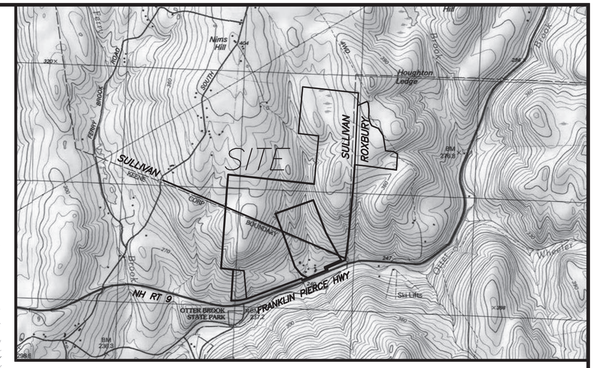
FRANKLIN PIERCE HIGHWAY

LEGEND

- Monument Found
- Highway Bound
- Calculated Point
- Utility Pole
- Property Line
- Limits of Disturbance
- Stockpile
- Major Contour Line
- Minor Contour Line
- Edge of Wetland
- Stream

0' 50' 100' 150'

Scale: 1 inch = 50 feet



LOCATION MAP

1 inch = 2000 feet

Reference Plans:

A. "Steel Tape and Compass Survey of 3 Lot Subdivision for Wayne W. & Elaine Sargent, Route 9 Keene and Sullivan, NH", By Herbert E. Russell, RLS #21. Dated August, 1979. Recorded at Cheshire County Registry of Deeds Cabniet 2 Pg 94 Roll #305.

B. "Boundary Survey: Land of Seafield Pines Hospital Corporation, Keene, Sullivan & Roxbury, County of Cheshire, State of New Hampshire" By C.T. Male Associates, P. C. Dated June, 1989. Job No. 88-05837. Not Recorded.

C. "Charles S. and John W. Towns, "Nims" Woodlot, Keene, Nh" By William P. House, Dated May, 1965. Recorded at the Cheshire Country Registry of Deeds Plan Book 19 Pg 37.

D. "Bolles Subdivision, 3 Lot Subdivision & Boundary Line Adjustment Map 5 Lot 42, 469 South Road, Sullivan, NH" By Cardinal Surveying & Land Planning. Recorded at the Cheshire County Registry of Deeds Plans #21048, 21049 and 21087.

E. "Plan of Proposed T.L.R. Project No. 14201, NH Project No P-2962-C, Franklin Pierce Highway, City of Keene and Town of Roxbury, County of Cheshire.", By State of New Hampshire Department of Public Works and Highways. Dated November 16, 1956. On file and available on-line with the New Hampshire Department of Transportation, Right of Way Bureau.

NOTES:

1. Owner of Record: G2 Holdings, LLC 250 North Street, Jaffrey, NH 03452.
2. The Basis of Bearing is Grid. The Horizontal Datum is on the New Hampshire State Plane Coordinate System NAD83 (2011). The Vertical Datum is NAVD 88. Both horizontal and vertical datumes were derived from a static GNSS observation taken during the time of the field survey and processed using the Online Positioning User System (OPUS).
3. This plan is based on an updated field survey completed in January of 2025 using iGuage dual frequency RTK survey grade GNSS receivers, and a DJI Mavic 3E Drone. The survey is classified as Rural and exceeds the minimum positional tolerances for property corners (0.25') and control (0.13') computed using a least squares adjustment at the 95% confidence level.
4. The property lies in the Rural Residential Zoning District in Sullivan – Building Setbacks are 50 feet – front, 20 feet side and rear. The property lies in the Rural Zoning District in Keene – R. Building Setbacks are 50 feet – front, side and rear.
5. The wetlands shown hereon were delineated by John St. John, NH CWS #221 of Ecosystems Land Planning from August-October of 2023.
6. The purpose of this plan sheet is to show the current conditions of Phase I excavation as of January 22, 2025.

STATE OF NEW HAMPSHIRE
JOHN J. ST. JOHN
No. 221
CERTIFIED WETLAND SCIENTIST

STATE OF NEW HAMPSHIRE
No. 997
ERIC S. POSPESIL
SIGNATURE
LICENSED LAND SURVEYOR

EXISTING CONDITIONS PHASE I PIT

G2 HOLDINGS, LLC

TAX MAP 215 LOTS 6&7
VOLUME 3079 PAGE 283 &
VOLUME 3199 PAGE 1197
IN THE CITY OF
KEENE, NEW HAMPSHIRE

SMITH & POSPESIL
LAND SURVEYING COMPANY, PLLC
240 QUEBEC ROAD, LYMAN, N.H. 03585

JUNE 19, 2023
REVISED JULY 16, 2024
& JANUARY 27, 2025

NEW HAMPSHIRE STATE PLANE
COORDINATE SYSTEM NAD 83
MAGNETIC DECLINATION: 13° 53' W
CONVERGENCE ANGLE =0°22'39"
OBSERVATION DATE: MAY, 2023
COMBINED SCALE FACTOR: 0.99995790.

GRID

KEY LANDSCAPE & IRRIGATION, LLC
SULLIVAN TM 5
LOT 41-2

ELIZABETH NEWCOMBE
SULLIVAN TM 5
LOT 41-1

JAMES MANLEY
SULLIVAN TM 5
LOT 47

G2 HOLDINGS, LLC
SULLIVAN TM 5
LOT 46
169.0 AC +/-

G2 HOLDINGS, LLC
ROXBURY TM 401
LOT 6
28.9 AC +/-

G2 HOLDINGS, LLC
SULLIVAN TM 5
LOT 46-1
28.1 AC +/-

G2 HOLDINGS, LLC
KEENE TM 215 LOT 7
78.4 +/- AC

G2 HOLDINGS, LLC
KEENE TM 215 LOT 6
7.02 AC

G2 HOLDINGS, LLC
TM 215 LOT 8
23.09 AC

G2 HOLDINGS, LLC
KEENE TM 215
LOT 9
.95 AC

SAMUEL & JACLYN
GUINANE
KEENE TM 215
LOT 3

BETEAU REVOCABLE
TRUST OF 2018
ROXBURY TM 401 LOT 3

HIGH-FOREST
PARTNERS, LLC
ROXBURY TM 401 LOT 2

G2 HOLDINGS, LLC
ROXBURY TM 401 LOT 1

1/2" IRON PIPE FOUND UP 2"

TOWNLINE MONUMENT
RED & WHITE PAINTED
IRON PIPE FOUND IN
STONE PILE

1/2" IRON PIPE FOUND UP 12"

END WALL

REBAR FOUND UP 3"

LINE PER PLAN REF B

3/4" IRON PIPE FOUND UP 10"

3/4" IRON PIPE FOUND UP 4"

TRIPLE BLAZED
TREE NO PIN
FOUND

IRON ROD
FOUND IN
BOULDER

LIMIT OF DISTURBANCE
AS OF 5/31/2023

LINES NOT SURVEYED

LIMIT OF
DISTURBANCE AS
OF 5/31/2023

QUARRY
AREA

STONEWALL
INTERSECTION

END OF
STONEWALL

1" IRON PIPE
FOUND UP 4"
AT END OF WALL

EX CULV
18" HDPE
INV IN: 880.4
INV OUT: 877.8

EX CULV
12" HDPE
INV IN: 886.1
INV OUT: 884.4

EX CULV
48" CMP
INV IN: 847.2
INV OUT: 845.8

EX CULV
6" HDPE
INV IN: 860.9
INV OUT: 859.2

EX CULV
24" HDPE
INV IN: 807.2
INV OUT: 800.1

S 03°12'23" W
417.64'

S 03°20'54" W
387.34'

S 86°42'47" E
669.45'

S 04°18'17" W
99.71'

N 83°41'57" W
1492.00'

N 83°41'57" W
925.89'

N 04°17'14" E
1721.07'

S 86°42'47" E
1718.29'

N 70°14'53" E
1121.17'

N 20°56'56" W
416.82'

N 19°44'52" W
105.76'

S 21°11'07" E
985.20'

N 05°20'08" E
1279.98'

N 04°04'08" E
695.00'

N 19°44'52" W
1038.12'

N 66°42'47" W
1718.41'

S 23°06'47" E
718.99'

N 06°59'18" E
422.61'

N 83°54'18" W
341.78'

S 83°54'18" E
303.22'

N 03°38'42" E
867.49'

S 05°12'18" E
787.52'

N 39°16'07" E
389.25'

N 66°15'07" W
200.00'

N 66°15'07" W
233.74'

S 29°38'35" E
149.40'

S 66°50'25" W
504.36'

S 22°22'01" E
100.19'

N 07°39'03" E
49.69'

S 67°38'53" W
545.09'

N 67°38'53" E
170.95'

S 69°32'32" W
638.48'

N 20°42'54" W
50.36'

S 69°36'46" W
855.33'

S 69°36'46" W
22.80'

L = 123.55'
R = 1432.50'
CH =N 72°05'03" E
CL = 123.54'

P = 433.01'
CH =N 83°13'01" E
CL = 431.45'

N 03°38'42" E 1.67' FROM NHDOT
R.O.W TO REBAR FOUND

KEENE

ROXBURY

NH ROUTE 9 FRANKLIN PIERCE HIGHWAY

SULLIVAN

KEENE

SULLIVAN

ROXBURY

NOTES:

1. Owner of Record: G2 Holdings, LLC 250 North Street, Jaffrey, NH 03452.
2. The Basis of Bearing is Grid. The Horizontal Datum is on the New Hampshire State Plane Coordinate System NAD83 (2011). The Vertical Datum is NAVD 88. Both horizontal and vertical datumes were derived from a static GNSS observation taken during the time of the field survey and processed using the Online Positioning User System (OPUS).
3. This plan is based on a field survey completed in October 2022, May of 2023 & January of 2025 using iGuage 8 & 9 dual frequency RTK survey grade GNSS receivers, a Topcon Robotic Total Station and DJI Mavic 3E drone. The survey is classified as Rural and exceeds the minimum positional tolerances for property corners (0.25') and control (0.13') computed using a least squares adjustment at the 95% confidence level.
4. The property lies in the Rural Residential Zoning District in Sullivan – Building Setbacks are 50 feet – front, 20 feet side and rear. The property lies in the Rural Zoning District in Keene – R. Building Setbacks are 50 feet – front, side and rear.
5. The wetlands shown hereon were delineated by John St. John, NH CWS #221 of Ecosystems Land Planning from August–October of 2023.

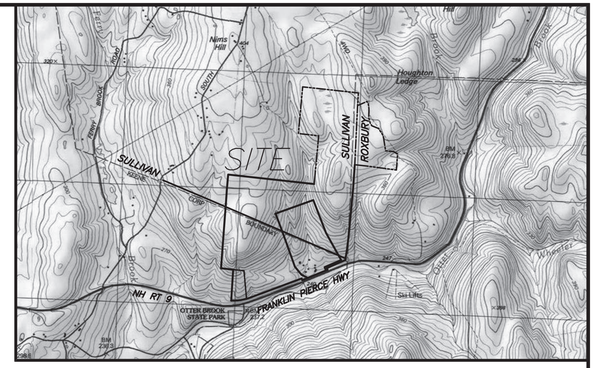
STATE OF NEW HAMPSHIRE
JOHN J. ST. JOHN
No. 221
CERTIFIED WETLAND SCIENTIST

LEGEND

- Monument Found
- Highway Bound
- Calculated Point
- Well
- Utility Pole
- Property Line
- Town Line
- Approx Abutters Line
- Limits of Disturbance
- Major Contour Line
- Minor Contour Line
- Edge of Wetland
- Stream

0' 200' 400' 600'

Scale: 1 inch = 200 feet



LOCATION MAP
1 inch = 2000 feet

Reference Plans:

A. "Steel Tape and Compass Survey of 3 Lot Subdivision for Wayne W. & Elaine Sargent, Route 9 Keene and Sullivan, NH", By Herbert E. Russell, RLS #21. Dated August, 1979. Recorded at Cheshire County Registry of Deeds Cabniet 2 Pg 94 Roll #305.

B. "Boundary Survey: Land of Seafield Pines Hospital Corporation, Keene, Sullivan & Roxbury, County of Cheshire, State of New Hampshire" By C.T. Male Associates, P. C. Dated June, 1989. Job No. 88-05837. Not Recorded.

C. "Charles S. and John W. Towns, "Nims" Woodlot, Keene, Nh" By William P. House, Dated May, 1965. Recorded at the Cheshire Country Registry of Deeds Plan Book 19 Pg 37.

D. "Bolles Subdivision, 3 Lot Subdivision & Boundary Line Adjustment Map 5 Lot 42, 469 South Road, Sullivan, NH" By Cardinal Surveying & Land Planning. Recorded at the Cheshire County Registry of Deeds Plans #21048, 21049 and 21087.

E. "Plan of Proposed T.L.R. Project No. 14201, NH Project No P-2962-C, Franklin Pierce Highway, City of Keene and Town of Roxbury, County of Cheshire.", By State of New Hampshire Department of Public Works and Highways. Dated November 16, 1956. On file and available on-line with the New Hampshire Department of Transportation, Right of Way Bureau.

A SURVEY OF LAND FOR

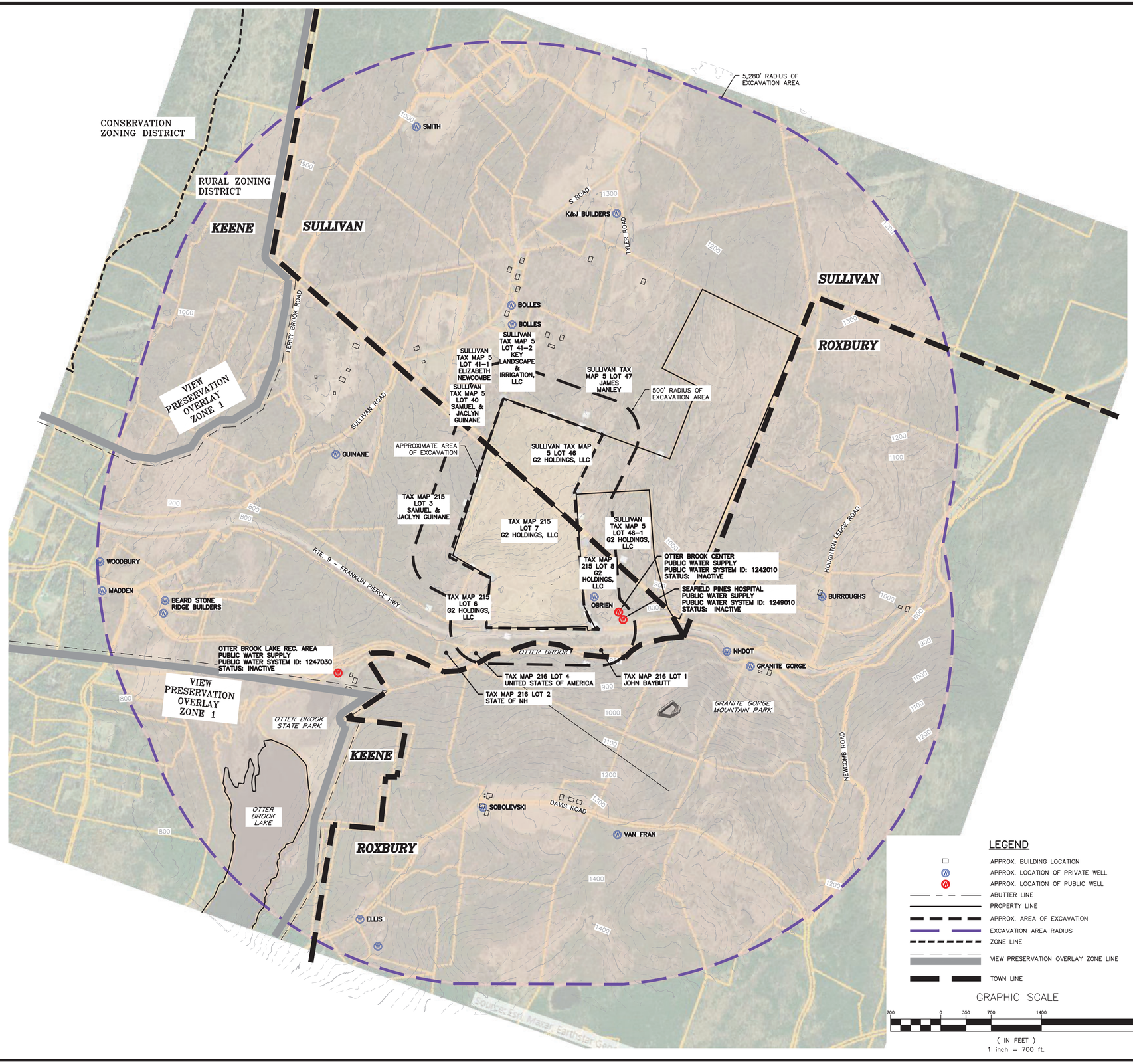
G2 HOLDINGS, LLC

TAX MAP 5 LOTS 46 & 46-1
VOLUME 3079 PAGE 283
IN THE TOWN OF
SULLIVAN, NEW HAMPSHIRE
AND
TAX MAP 215 LOTS 6,7,8 & 9
VOLUME 3079 PAGE 283 &
VOLUME 3199 PAGE 1197
IN THE CITY OF
KEENE, NEW HAMPSHIRE

SMITH & POSPESIL
LAND SURVEYING COMPANY, PLLC
240 QUEBEC ROAD, LYMAN, N.H. 03585

JUNE 19, 2023
REVISED JULY 16, 2024
& JANUARY 27, 2025

STATE OF NEW HAMPSHIRE
LICENSED LAND SURVEYOR
No. 967
ERIC S. POSPESIL
SIGNATURE



N

GENERAL NOTES:

1. 500' AND 5,280 (1 MILE) RADII OF THE EXCAVATION AREA ARE SHOWN.
2. THE APPROXIMATE LOCATION OF THE 25-FT CONTOURS ARE SHOWN WITHIN A 1 MILE RADIUS OF THE EXCAVATION SITE. THE TOPOGRAPHICAL INFORMATION SHOWN IS FROM NH GRANIT.
3. THE APPROXIMATE LOCATION OF ALL BUILDINGS ARE SHOWN. THIS INFORMATION IS FROM NH GRANIT AND KEENE TAX MAP INFORMATION.
4. THE APPROXIMATE LOCATION OF NH ROUTE 9 IS SHOWN. THIS INFORMATION IS FROM NH GRANIT.
5. THE APPROXIMATE LOCATION OF ALL PROPERTY LINES ARE SHOWN IN KEENE, ROXBURY AND SULLIVAN WITHIN A 1-MILE RADIUS OF THE EXCAVATION SITE. THIS INFORMATION COMES FROM NH GRANIT.
6. THE ZONE LINE ALONG THE TOWN LINES ARE SHOWN. THE ENTIRETY OF THE 1-MILE RADIUS IS WITHIN THE RURAL ZONE.
7. THE LOCATION AND ASSOCIATED INFORMATION FOR ALL PUBLIC WATER SUPPLIES ARE SHOWN WITHIN A 1-MILE RADIUS OF THE EXCAVATION SITE. THIS INFORMATION WAS OBTAINED THROUGH NHDES ONESTOP DATA RESEARCH.
8. THERE ARE NO WELLHEAD PROTECTION AREAS WITHIN A 1-MILE RADIUS OF THE EXCAVATION SITE. THIS INFORMATION COMES FROM A DATA CHECK USING NHDES ONESTOP DATA SEARCH.
9. THERE ARE NO KNOWN FUTURE MUNICIPAL WATER SUPPLY SITES WITHIN A 1-MILE RADIUS OF THE EXCAVATION SITE.
10. ALL SURFACE WATERS ARE SHOWN WITHIN A 1-MILE RADIUS OF THE EXCAVATION SITE. THIS INFORMATION COMES FROM NH GRANIT AND NHDES ONESTOP DATA RESEARCH.
11. THE APPROXIMATE LOCATIONS OF ALL PUBLICLY RECORDED PRIVATE WELLS ARE SHOWN WITHIN A 1-MILE RADIUS OF THE EXCAVATION SITE. THIS INFORMATION COMES FROM KEENE GIS AND NHDES ONE-STOP DATA RESEARCH.
12. ALL OTHER PRIVATE WELL ESTIMATION IS AN APPROXIMATION.

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REVISIONS

No.	DATE	COMMENTS	BY
1	12/20/24	PROJECT SUBMITTAL	JD
2	2/3/25	REVISED PER CITY COMMENTS	JD
3	5/9/25	REVISED PER CITY COMMENTS	JD
4	7/9/25	REVISED PER CITY COMMENTS	JD
5	7/24/25	ADDITIONAL WELL LOCATIONS	JD
6	8/11/25	REVISED PER CITY COMMENTS	JD

OWNER/APPLICANT:
G2 HOLDINGS, LLC
250 NORTH STREET
JAFFREY, NH 03452

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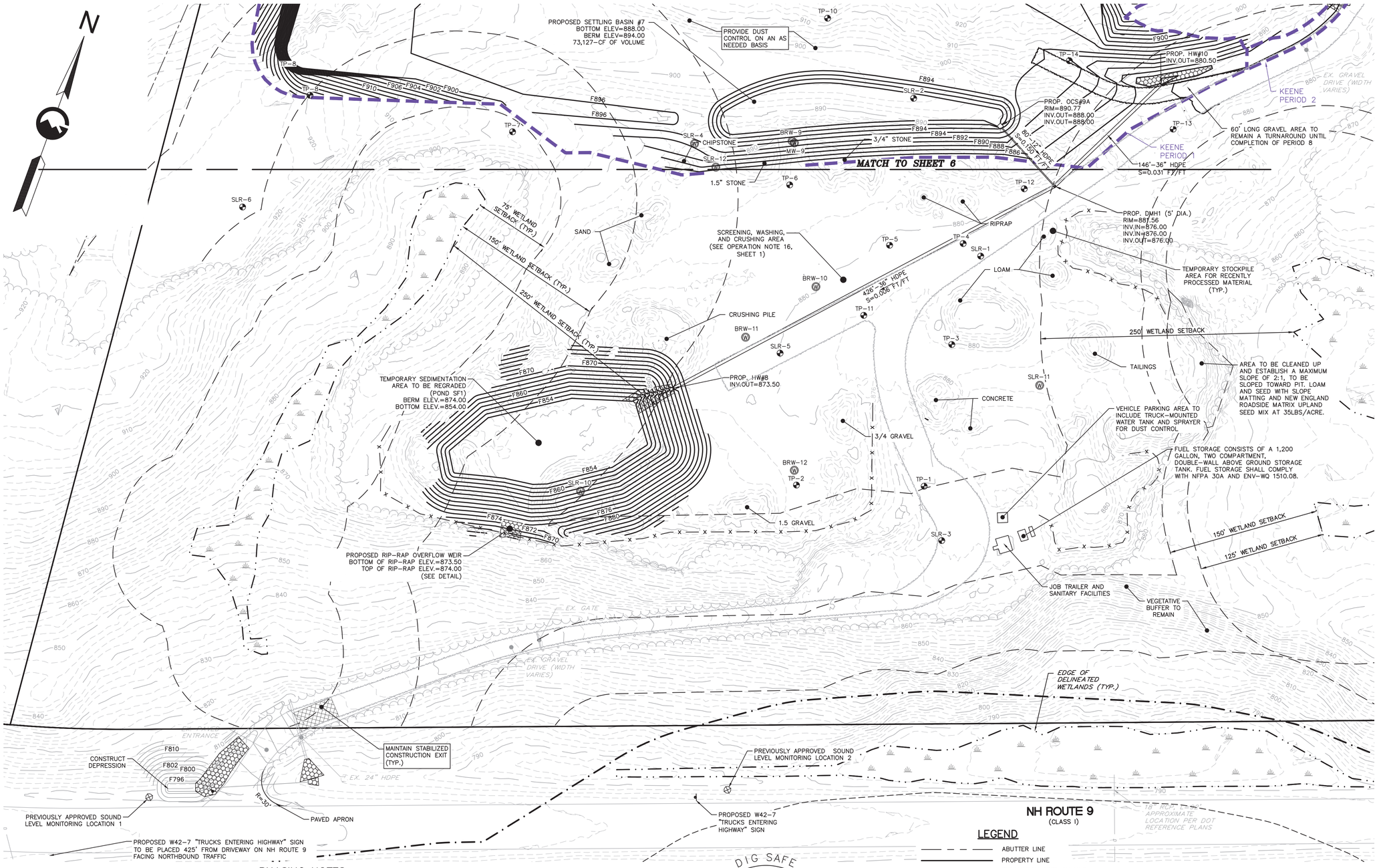
STAMP:
STATE OF NEW HAMPSHIRE
BRENTON J. COLE
No. 14744
8/11/25
LICENSED PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
CONTEXT PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=700'
SHEET:	4 OF 23	



EROSION & SEDIMENT CONTROL LEGEND

- STONE CHECK DAM
- LIMITS OF CLEARING
- SILT FENCE
- STABILIZED CONSTRUCTION EXIT
- STAGING AND STOCKPILE AREA
- EROSION CONTROL BLANKET

PHASING NOTES:

1. INSTALL NECESSARY EROSION CONTROL MEASURES, I.E. SILT FENCE.
2. REGRADE AND REPLANT BUFFER AREA
3. INSTALL SIGNAGE.
4. INSTALL PAVED APRON AND CULVERT ENTRANCE INLET DEPRESSION.
5. INSTALL CULVERT OUTLET PROTECTION AT EXISTING 24" HDPE CULVERT
6. COMPLETE EXCAVATION OF TEMPORARY SEDIMENTATION AREA SF1.
7. TEMPORARY SEDIMENTATION POND TO BE LINED WITH 12 INCHES OF CRUSHED LIMESTONE GRAVEL, THEN LOAMED AND SEEDED.
8. BEGIN EXCAVATION IN PERIOD 1. CONSTRUCT OUTLET STRUCTURE AND CULVERT OF TEMPORARY SEDIMENTATION BASIN #7. CONSTRUCT CLOSED DRAINAGE SYSTEM AND DIRECT DISCHARGE TO TEMPORARY SEDIMENT AREA SF1.
9. ALL TRUCK TURNAROUND AREAS TO BE MAINTAINED UNTIL THE COMPLETION OF PERIOD 7, THEN THOSE AREAS ARE TO BE RECLAIMED.

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UTILITIES UNDERGROUND

SEE SHEET 6 FOR EROSION CONTROL NOTES (TYP.)

SEE SHEET 1 FOR OPERATION NOTES (TYP.)

LOAM & SEED ALL DISTURBED AREAS (TYP.)

LEGEND

- ABUTTER LINE
- PROPERTY LINE
- EXCAVATION SETBACK LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- WETLANDS BOUNDARY
- WETLAND BUFFER
- PROPOSED EDGE OF GRAVEL
- PERIOD LINE
- EX./PROP. TREELINE
- PROP. GRADE LINE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- RIP RAP
- EX./PROP. HEADWALL
- PROP. DRAINAGE LINE
- EX. DRAINAGE LINE

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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REVISIONS

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CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
EXCAVATION, DRAINAGE & EROSION CONTROL PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=50'
SHEET: 5 OF 23		

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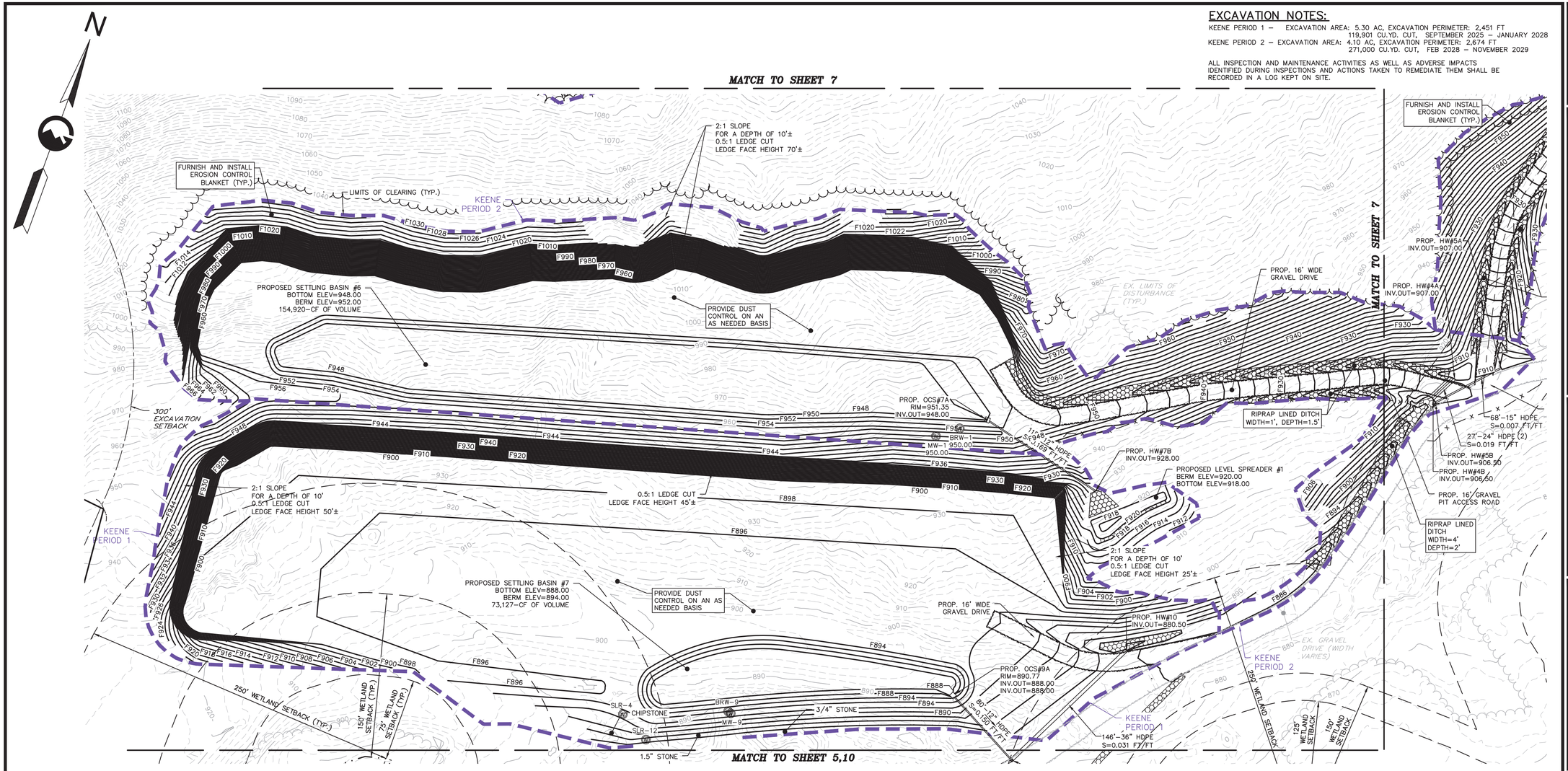
EXCAVATION NOTES:

KEENE PERIOD 1 – EXCAVATION AREA: 5.30 AC, EXCAVATION PERIMETER: 2,451 FT
119,901 CU.YD. CUT, SEPTEMBER 2025 – JANUARY 2028
KEENE PERIOD 2 – EXCAVATION AREA: 4.10 AC, EXCAVATION PERIMETER: 2,674 FT
271,000 CU.YD. CUT, FEB 2028 – NOVEMBER 2029

ALL INSPECTION AND MAINTENANCE ACTIVITIES AS WELL AS ADVERSE IMPACTS IDENTIFIED DURING INSPECTIONS AND ACTIONS TAKEN TO REMEDIATE THEM SHALL BE RECORDED IN A LOG KEPT ON SITE.



PHASING NOTES:

1. CONTINUE EXCAVATION IN PERIOD 1. AS PIT FLOOR IS LOWERED, EXCAVATE SEDIMENT BASIN AS REQUIRED. INSTALL OUTLET CULVERT.
2. ONCE PERIOD 1 HAS REACHED FINAL GRADING, RECLAIM ENTIRE AREA. PRIOR TO LOAMING AND SEEDING THE SEDIMENT AREA, REMOVE ALL SILTED MATERIALS. LOAM AND SEED, ENSURE OUTLET CULVERT IS INSTALLED.RECLAIM ACCESS TO THE PIT.
3. BEGIN CONSTRUCTION OF PERIOD 2, STARTING WITH THE ACCESS. INSTALL ALL EROSION CONTROL DEVICES.CONSTRUCT DITCH ALONG WEST SIDE OF EXISTING ACCESS ROAD. INSTALL CULVERTS AT THE INTERSECTION WITH THE NEW ACCESS ROAD RUNNING TO THE NORTH.
4. AS PIT AREA IN PERIOD IS EXCAVATED, PITCH SLOPE TO THE SOUTH OF THE AREA AND BEGIN EXCAVATION OF THE SEDIMENT RETENTION AREA. DIRECT DISHARGE FROM THE SEDIMENT DOWN THE EASTERN SIDE OF RECLAIMED PERIOD 1. AS THE SEDIMENT AREA IS LOWERED, INSTALL OUTLET CULVERT, AND DIRECT TO THE EXISTING SLOPE TO THE EAST OF PERIOD 1.
5. ONCE PERIOD 2 HAS REACHED FINAL GRADING, RECLAIM ENTIRE AREA. PRIOR TO LOAMING AND SEEDING THE SEDIMENT AREA, REMOVE ALL SILTED MATERIALS. LOAM AND SEED, ENSURE OUTLET CULVERT IS INSTALLED. RECLAIM ACCESS TO THE PIT TO INTERSECTION OF NEW ACCESS RUNNING TO THE NORTH.
6. ALL TRUCK TURNAROUND AREAS TO BE MAINTAINED UNTIL THE COMPLETION OF PERIOD 7, THEN THOSE AREAS ARE TO BE RECLAIMED.

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SEE SHEET 1 FOR OPERATION NOTES (TYP.)

LOAM & SEED ALL DISTURBED AREAS (TYP.)

EROSION CONTROL NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE REQUIRED ONSITE TEMPORARY CONSTRUCTION EROSION CONTROL MEASURES.
2. ALL MEASURES IN THE PLAN SHALL MEET AS A MINIMUM THE BEST MANAGEMENT PRACTICES SET FORTH IN VOLUME 3 OF THE NEW HAMPSHIRE STORMWATER MANUAL "EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" AS PUBLISHED AND AMENDED BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES.
3. WHENEVER PRACTICAL, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED OR SUPPLEMENTED. THE STRIPPING OF VEGETATION SHALL BE DONE IN A MANNER THAT MINIMIZES SOIL EROSION.
4. APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO LAND DISTURBANCE.
5. THE AREA OF DISTURBANCE SHALL BE KEPT TO A MINIMUM. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 30 DAYS SHALL BE STABILIZED.
6. MEASURES SHALL BE TAKEN TO CONTROL EROSION WITHIN THE PROJECT AREA. SEDIMENT IN RUNOFF WATER SHALL BE TRAPPED AND RETAINED WITHIN THE PROJECT AREA USING APPROVED MEASURES.
7. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN FUNCTIONING CONDITION UNTIL FINAL SITE STABILIZATION IS ACCOMPLISHED.
8. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. TRAPPED SEDIMENT AND OTHER DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 DAYS UNLESS CONDITIONS DICTATE OTHERWISE.
9. THE CITY OF KEENE SHALL RESERVE THE RIGHT TO REQUIRE FURTHER EROSION CONTROL PRACTICES DURING CONSTRUCTION SHOULD THEY FIND IT NECESSARY.
10. THE RESPONSIBLE PARTY SHALL INSTALL, INSPECT, REPORT, OPERATE, AND MAINTAIN ALL STORMWATER MANAGEMENT AND EROSION CONTROL MEASURES REQUIRED BY THESE PLANS.
11. TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH PROJECT PLANS. IN ADDITION, SIMILAR MEASURES SHALL BE INSTALLED WHERE AND WHEN THE FIELD CONDITION, OR FIELD OPERATION OF THE INDIVIDUAL SITE CONTRACTOR, MAY WARRANT.
12. ALL DISTURBED AREAS DESIGNATED TO BE TURF, SHALL RECEIVE A MINIMUM APPLICATION OF 4 INCHES OF LOAM (COMPACTED THICKNESS), PRIOR TO FINAL SEEDING AND MULCHING.
13. IN THE EVENT THAT, DURING CONSTRUCTION OF ANY PORTION OF THIS PROJECT, A WINTER SHUTDOWN IS NECESSARY, THE CONTRACTOR SHALL STABILIZE ALL INCOMPLETE WORK AND PROVIDE FOR SUITABLE METHODS OF DIVERTING RUNOFF IN ORDER TO ELIMINATE SHEET FLOW ACROSS FROZEN SURFACES.
14. DUST SHALL BE CONTROLLED BY THE USE OF WATER AS NECESSARY THROUGHOUT THE CONSTRUCTION PERIOD, IN ACCORDANCE WITH ENV–A 1000.
15. IN NO WAY ARE THOSE TEMPORARY EROSION CONTROL MEASURES INDICATED ON THESE PLANS TO BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR SHALL USE JUDGEMENT IN INSTALLING SUPPLEMENTARY EROSION CONTROL MEASURES WHERE AND WHEN SPECIFIC SITE CONDITIONS AND/OR CONSTRUCTION METHODOLOGIES MAY WARRANT.
16. GRADED AREAS SHALL BE VEGETATED TO INSURE EROSION CONTROL BY SEEDING, MULCHING, AND FERTILIZING. DISTURBED AREAS SHALL BE PLANTED WITH SUITABLE PLANT MATERIALS.
17. GRADING SHALL NOT EXCEED A RATIO OF 3 HORIZONTAL TO 1 VERTICAL WITHOUT SPECIAL EROSION CONTROL MEASURES. NETTING OR SIMILAR MATERIAL SHALL BE PROVIDED ON SLOPES WITH A RATIO GREATER THAN 3:1 WHILE GROUND COVER IS BEING ESTABLISHED.

EROSION & SEDIMENT CONTROL LEGEND

- STONE CHECK DAM
- LIMITS OF CLEARING
- SILT FENCE
- STABILIZED CONSTRUCTION EXIT
- STAGING AND STOCKPILE AREA
- EROSION CONTROL BLANKET

LEGEND

- ABUTTER LINE
- PROPERTY LINE
- EXCAVATION SETBACK LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- WETLANDS BOUNDARY
- WETLAND BUFFER
- PROPOSED EDGE OF GRAVEL
- PERIOD LINE
- EX./PROP. TREELINE
- PROP. GRADE LINE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- RIP RAP
- EX./PROP. HEADWALL
- PROP. DRAINAGE LINE

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

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REVISIONS

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1	12/20/24	PROJECT SUBMITTAL	JD
2	2/3/25	REVISED PER CITY COMMENTS	JD
3	5/5/25	REVISED PER CITY COMMENTS	JD
4	7/9/25	REVISED PER CITY COMMENTS	JD
5	7/24/25	ADDITIONAL WELL LOCATIONS	JD
6	8/11/25	REVISED PER CITY COMMENTS	JD

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STAMP:
STATE OF NEW HAMPSHIRE
BRENTON S. COLE
No. 14744
8/11/25
LICENSED PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
EXCAVATION, DRAINAGE & EROSION CONTROL PLAN

PROJECT No.	DATE:	SCALE:
23–0201–1	MAY 9, 2025	HORIZ. 1"=50'
SHEET: 6 OF 23		

P:\23\230201\dwg\Production Plans\230201_SITE.dwg, 8/7/2025 11:50:58 AM

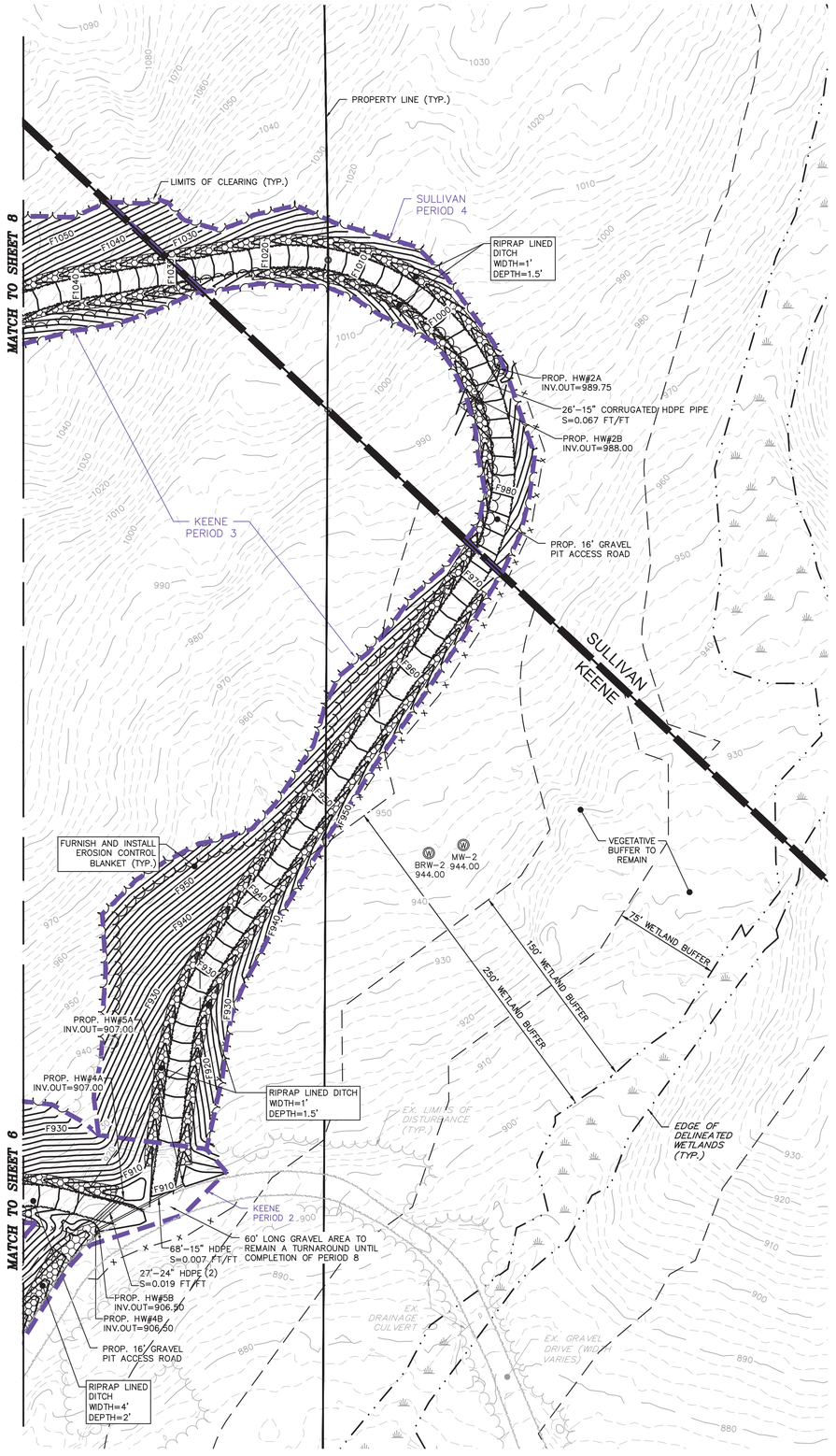
PHASING NOTES:

1. INSTALL ALL NECESSARY EROSION CONTROL ITEMS, I.E. SILT FENCE, STONE CHECK DAMS.
2. CONSTRUCT PIT ACCESS IN ITS ENTIRETY TO THE START OF PERIOD 5.
3. INSTALL ALL CULVERTS, RIP RAP CULVERT OUTLETS, AND DITCH PROTECTION.
4. ALL TRUCK TURNAROUND AREAS TO BE MAINTAINED UNTIL THE COMPLETION OF PERIOD 7, THEN THOSE AREAS ARE TO BE RECLAIMED.

SEE SHEET 1 FOR OPERATION NOTES (TYP.)

SEE SHEET 6 FOR EROSION CONTROL NOTES (TYP.)

LOAM & SEED ALL DISTURBED AREAS (TYP.)



EXCAVATION NOTES:

KEENE PERIOD 3 – EXCAVATION AREA: 2.14 AC, EXCAVATION PERIMETER: 3,780 FT
16,450 CU.YD. CUT, DECEMBER 2029 – JANUARY 2030
SULLIVAN PERIOD 4 – EXCAVATION AREA: 0.39 AC, EXCAVATION PERIMETER: 947 FT
939 CU.YD. CUT, FEB 2030 – MARCH 2030

ALL INSPECTION AND MAINTENANCE ACTIVITIES AS WELL AS ADVERSE IMPACTS IDENTIFIED DURING INSPECTIONS AND ACTIONS TAKEN TO REMEDIATE THEM SHALL BE RECORDED IN A LOG KEPT ON SITE.

N

LEGEND

- ABUTTER LINE
- PROPERTY LINE
- EXCAVATION SETBACK LINE
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- EX. DRAINAGE LINE

EROSION & SEDIMENT CONTROL LEGEND

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DAMAGE PREVENTION SYSTEM
UTILITIES UNDERGROUND

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

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REVISIONS

No.	DATE	COMMENTS	BY
1	12/20/24	PROJECT SUBMITTAL	JD
2	2/3/25	REVISED PER CITY COMMENTS	JD
3	5/9/25	REVISED PER CITY COMMENTS	JD
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5	7/24/25	ADDITIONAL WELL LOCATIONS	JD
6	8/11/25	REVISED PER CITY COMMENTS	JD

OWNER/APPLICANT:
62 HOLDINGS, LLC
250 NORTH STREET
JAFFREY, NH 03452

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New Hampshire 03101
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STAMP:
STATE OF NEW HAMPSHIRE
BRENTON S. COLE
No. 14744
8/11/25
LICENSED PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
EXCAVATION, DRAINAGE & EROSION CONTROL PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=50'
SHEET: 7 OF 23		

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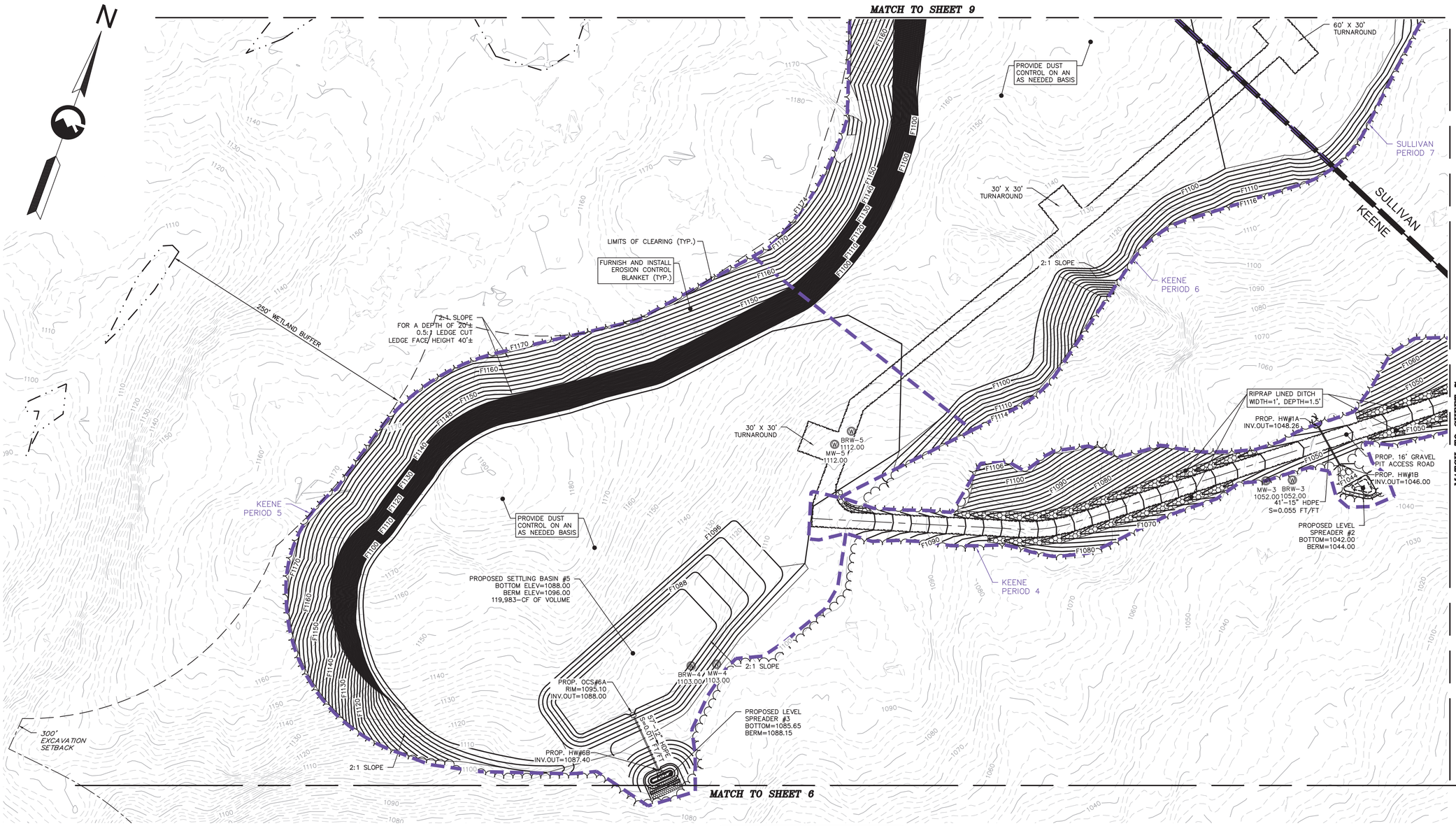

PHASING NOTES:

1. INSTALL NECESSARY EROSION CONTROL MEASURES, I.E. SILT FENCE.
2. BEGIN EXCAVATION IN PERIOD 5. CONSTRUCT TEMPORARY SEDIMENT BASIN AS NEEDED AND DIRECT DISCHARGE TO TEMPORARY SEDIMENT AREA.
3. SLOPE PIT TO RUN TO THE SOUTH TO THE SEDIMENT AREA. AS EXCAVATION PROCEDES, LOWER SEDIMENT AREA AS NEEDED.
4. ONCE PERIOD 5 HAS REACHED FINAL GRADING, RECLAIM ENTIRE AREA, LEAVING TRUCK AND EQUIPMENT ACCESS TO PERIOD 6. PRIOR TO LOAMING AND SEEDING THE SEDIMENT AREA, REMOVE ALL SILTED MATERIALS. LOAM AND SEED, ENSURE OUTLET CULVERT IS INSTALLED.
5. INSTALL EROSION CONTROL MEASURES FOR PERIOD 6.
6. BEGIN EXCAVATION IN PERIOD 6. SLOPE PIT FLOOR TO THE SOUTH. INSTALL TEMPORARY SEDIMENT BASINS AS NEEDED. DO NOT DISCHARGE SEDIMENT TO RECLAIMED AREA PERIOD 5.
7. ONCE PERIOD 6 HAS REACHED FINAL GRADING, RECLAIM ENTIRE AREA, LEAVING TRUCK AND EQUIPMENT ACCESS TO PERIOD 7.
8. ALL TRUCK TURNAROUND AREAS TO BE MAINTAINED UNTIL THE COMPLETION OF PERIOD 7, THEN THOSE AREAS ARE TO BE RECLAIMED.

LOAM & SEED ALL DISTURBED AREAS (TYP.)

SEE SHEET 1 FOR OPERATION NOTES (TYP.)

SEE SHEET 6 FOR EROSION CONTROL NOTES (TYP.)

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EXCAVATION NOTES:

KEENE PERIOD 5 – EXCAVATION AREA: 4.08 AC, EXCAVATION PERIMETER: 1,724 FT
366,530 CU.YD. CUT, APRIL 2030 – SEPTEMBER 2031

KEENE PERIOD 6 – EXCAVATION AREA: 3.82 AC, EXCAVATION PERIMETER: 1,900 FT
262,692 CU.YD CUT, OCT 2031 – JULY 2033

SULLIVAN PERIOD 7 – EXCAVATION AREA: 4.06 AC, EXCAVATION PERIMETER: 1,755 FT
306,210 CU.YD. CUT, AUG 2033 – AUG 2035

ALL INSPECTION AND MAINTENANCE ACTIVITIES AS WELL AS ADVERSE IMPACTS IDENTIFIED DURING INSPECTIONS AND ACTIONS TAKEN TO REMEDIATE THEM SHALL BE RECORDED IN A LOG KEPT ON SITE.

LEGEND

- ABUTTER LINE
- PROPERTY LINE
- EXCAVATION SETBACK LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- WETLANDS BOUNDARY
- WETLAND BUFFER
- PROPOSED EDGE OF GRAVEL
- PERIOD LINE
- EX./PROP. TREELINE
- PROP. GRADE LINE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- RIP RAP
- EX./PROP. HEADWALL
- PROP. DRAINAGE LINE

EROSION & SEDIMENT CONTROL LEGEND

- STONE CHECK DAM
- LIMITS OF CLEARING
- SILT FENCE
- STABILIZED CONSTRUCTION EXIT
- STAGING AND STOCKPILE AREA
- EROSION CONTROL BLANKET

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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STATE OF NEW HAMPSHIRE

LOCATION:
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SULLIVAN TAX MAP 5 LOTS 46 & 46-1
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CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
EXCAVATION, DRAINAGE & EROSION CONTROL PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=50'
SHEET: 8 OF 23		

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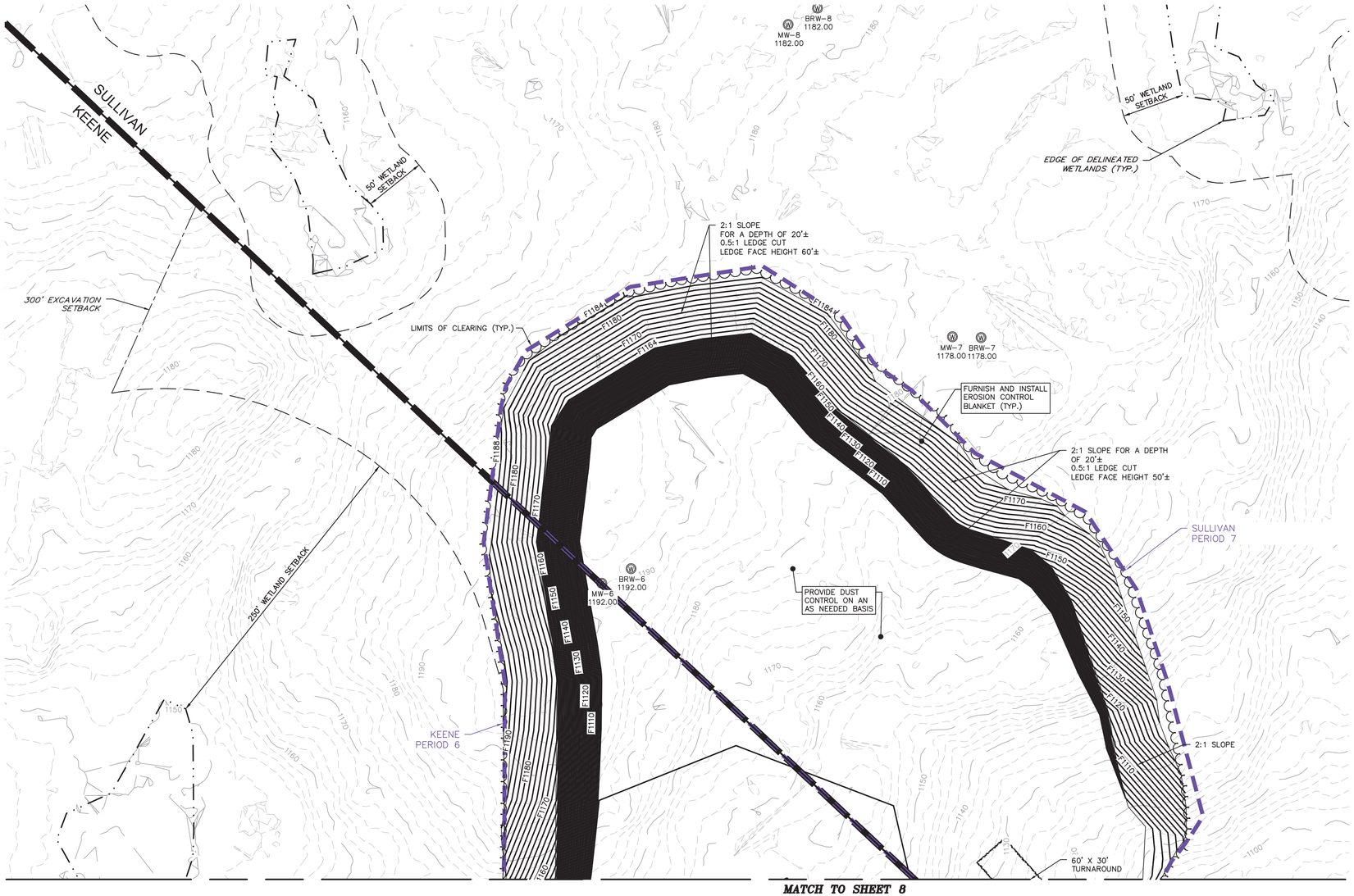

PHASING NOTES:

1. INSTALL EROSION CONTROL MEASURES FOR PERIOD 7.
2. BEGIN EXCAVATION IN PERIOD 7. SLOPE PIT FLOOR TO THE SOUTH. INSTALL TEMPORARY SEDIMENT BASINS AS NEEDED. DO NOT DISCHARGE SEDIMENT TO RECLAIMED AREA PERIOD 6.
3. ONCE PERIOD 7 HAS REACHED FINAL GRADING, RECLAIM ENTIRE AREA. RECLAIM GRAVEL SURFACE OF ENTIRE HAUL ROAD.
4. ALL TRUCK TURNAROUND AREAS TO BE MAINTAINED UNTIL THE COMPLETION OF PERIOD 7, THEN THOSE AREAS ARE TO BE RECLAIMED.

LOAM & SEED ALL DISTURBED AREAS (TYP.)

SEE SHEET 1 FOR OPERATION NOTES (TYP.)

SEE SHEET 6 FOR EROSION CONTROL NOTES (TYP.)

EXCAVATION NOTES:

KEENE PERIOD 6 – EXCAVATION AREA: 3.82 AC, EXCAVATION PERIMETER: 1,900 FT
262,692 CU.YD CUT, OCT 2031 – JULY 2033

SULLIVAN PERIOD 7 – EXCAVATION AREA: 4.06 AC, EXCAVATION PERIMETER: 1,755 FT
306,210 CU.YD. CUT, AUG 2033 – AUG 2035

ALL INSPECTION AND MAINTENANCE ACTIVITIES AS WELL AS ADVERSE IMPACTS IDENTIFIED DURING INSPECTIONS AND ACTIONS TAKEN TO REMEDIATE THEM SHALL BE RECORDED IN A LOG KEPT ON SITE.

N

LEGEND

- ABUTTER LINE
- PROPERTY LINE
- EXCAVATION SETBACK LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- WETLANDS BOUNDARY
- WETLAND BUFFER
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- PROP. GRADE LINE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
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- PROP. DRAINAGE LINE

EROSION & SEDIMENT CONTROL LEGEND

- STONE CHECK DAM
- LIMITS OF CLEARING
- SILT FENCE
- STABILIZED CONSTRUCTION EXIT
- STAGING AND STOCKPILE AREA
- EROSION CONTROL BLANKET

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GRAPHIC SCALE
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(IN FEET)
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JAFFREY, NH 03452

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No. 14744
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SULLIVAN TAX MAP 5 LOTS 46 & 46-1
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CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
EXCAVATION, DRAINAGE & EROSION CONTROL PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=50'
SHEET:	9 OF 23	

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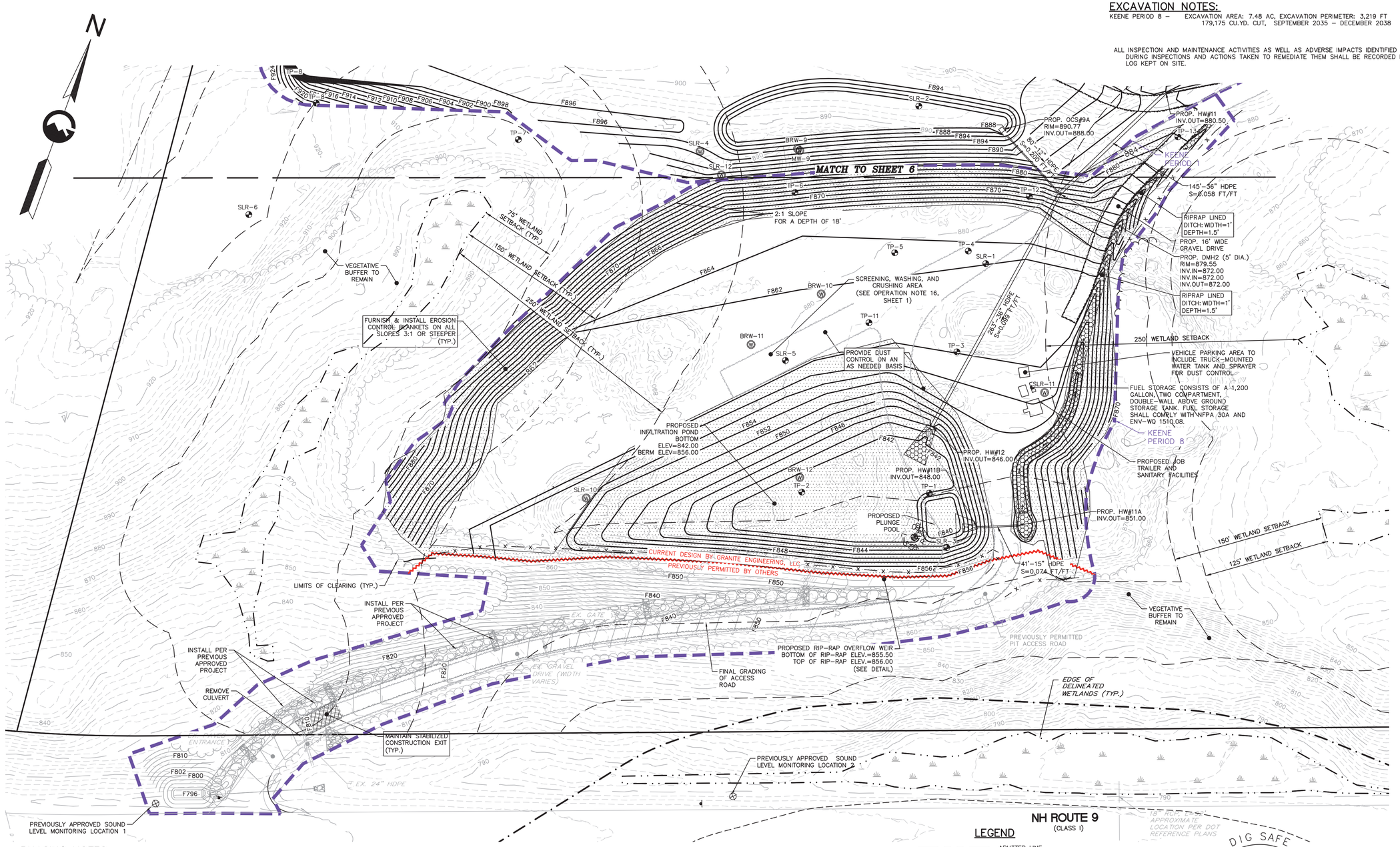
EXCAVATION NOTES:

KEENE PERIOD 8 – EXCAVATION AREA: 7.48 AC, EXCAVATION PERIMETER: 3,219 FT
179,175 CU.YD. CUT, SEPTEMBER 2035 – DECEMBER 2038

ALL INSPECTION AND MAINTENANCE ACTIVITIES AS WELL AS ADVERSE IMPACTS IDENTIFIED DURING INSPECTIONS AND ACTIONS TAKEN TO REMEDIATE THEM SHALL BE RECORDED IN A LOG KEPT ON SITE.



PHASING NOTES:

1. INSTALL EROSION CONTROL MEASURES FOR PERIOD 8.
2. BEGIN EXCAVATION IN PERIOD 8. SLOPE PIT FLOOR TO THE SOUTH.
3. AS PIT FLOOR IS LOWERED, EXCAVATE AND EXPAND TEMPORARY SEDIMENTATION BASIN EASTERLY, AT ALL TIMES MAINTAINING A MINIMUM DEPTH OF 12'.
4. DIRECT RUNOFF TO PROPOSED SEDIMENT AREA AS SHOWN ON THIS PLAN. TO KEEP ACCESS TO THE PIT OPEN, INSTALL A CULVERT TO DIRECT STORMWATER RUNOFF TO THE SEDIMENT RETENTION AREA.
9. BY THE TIME THE PIT FLOOR REACHES ELEVATION 860.00, THE TEMPORARY SEDIMENTATION AREA SHALL HAVE SHIFTED TO THE INFILTRATION LOCATION SHOWN, WITH A FLOOR ELEVATION OF 848.00.
4. WHEN THE 12" OUTLET PIPE FROM SETTLING BASIN #7 HAS REACHED 12" COVER, AND THE PROPOSED GRADE HAS BEEN ESTABLISHED AT DMH#2, INSTALL THE 36" CLOSED DRAINAGE SYSTEM AND DISCHARGE TO THE INFILTRATION POND.
5. AS THE PIT FLOOR IS LOWERED, THE GRADE OF THE MAIN ACCESS ROAD OFF ROUTE 9 WILL NEED TO BE ADJUSTED TO CURRENT PIT FLOOR ELEVATIONS. THE RIP RAP SWALE ON THE WESTERLY SIDE SHALL REMAIN AND ADJUSTED AS NEEDED.
6. ONCE PERIOD 8 HAS REACHED FINAL GRADING, INSTALL FINAL PERMANENT CHECK DAMS IN THE MAIN ACCESS ROAD DITCHLINE, REMOVE EXISTING 24" HDPE CULVERT, INSTALL SURFACE SAND FILTERS, INSTALL 18" HDPE CULVERT, INSTALL RETAINING WALL, AND INSTALL FENCE PER PREVIOUS DESIGN PLANS BY TF MORAN AND APPROVED BY THE CITY OF LEBANON.
7. LINE INFILTRATION POND WITH 12 INCHES OF CRUSHED LIMESTONE GRAVEL, THEN LOAM AND SEED.
8. INSTALL INFILTRATION POND EMERGENCY SPILLWAY.
9. RECLAIM ENTIRE AREA. RECLAIM GRAVEL SURFACE OF ACCESS ROAD. REMOVE TEMPORARY EROSION CONTROL MEASURES.

EROSION & SEDIMENT CONTROL LEGEND

- STONE CHECK DAM
- LIMITS OF CLEARING
- SILT FENCE
- STABILIZED CONSTRUCTION EXIT
- STAGING AND STOCKPILE AREA
- EROSION CONTROL BLANKET

SEE SHEET 6 FOR EROSION CONTROL NOTES (TYP.)

SEE SHEET 1 FOR OPERATION NOTES (TYP.)

LOAM & SEED ALL DISTURBED AREAS (TYP.)

LEGEND

- ABUTTER LINE
- PROPERTY LINE
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- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- WETLANDS BOUNDARY
- WETLAND BUFFER
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- PROP. GRADE LINE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- RIP RAP
- EX./PROP. HEADWALL
- PROP. DRAINAGE LINE
- EX. DRAINAGE LINE

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GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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G2 HOLDINGS, LLC
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JAFFREY, NH 03452

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STATE OF NEW HAMPSHIRE — BRENTON S. COLE — No. 14744 — 8/11/25 — LICENSED PROFESSIONAL ENGINEER

LOCATION:
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SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
EXCAVATION, DRAINAGE & EROSION CONTROL PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=50'
SHEET:	10 OF 23	

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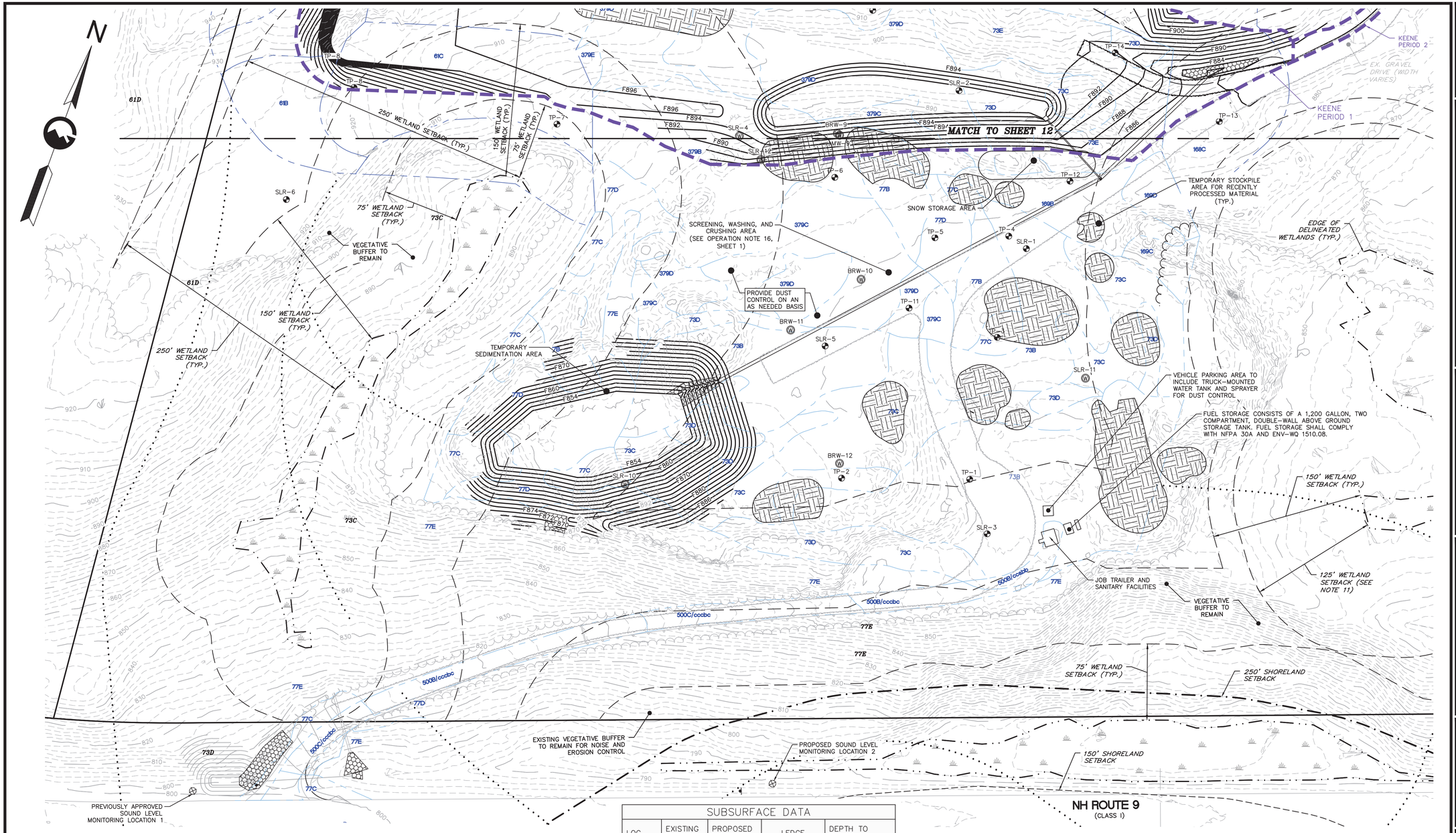

SEE SHEET 1 FOR OPERATION NOTES (TYP.)

SEE SHEET 12 FOR IMPACT CONTROL & MONITORING PLAN NOTES (TYP.)

LOAM & SEED ALL DISTURBED AREAS (TYP.)

SSSS LEGEND (SURVEYED BY THOMAS SOKOLOSKI)

		HYDROLOGIC SOIL GROUP
73B	BERKSHIRE FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	B
73C	BERKSHIRE FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	B
73D	BERKSHIRE FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	B
73E	BERKSHIRE FINE SANDY LOAM, 25%+ SLOPES , VERY STONY	B
77B	BERKSHIRE FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	C
77C	BERKSHIRE FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	C
77D	BERKSHIRE FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	C
77E	BERKSHIRE FINE SANDY LOAM, 25%+ SLOPES, VERY STONY	C
169B	SUNAPEE FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	B
169C	SUNAPEE FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	B
169D	SUNAPEE FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	B
379B	DIXFIELD FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	C
379C	DIXFIELD FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	C
379D	DIXFIELD FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	C
500B/ccabb	UDORTHENTS, LOAMY, 0–8% SLOPES	B
500B/ccabb	UDORTHENTS, LOAMY, 0–8% SLOPES	B
500B/ccabb	URBAN LAND, 8–15% SLOPES	B

SUBSURFACE DATA

LOG	EXISTING GROUND	PROPOSED GRADE	LEDGE	DEPTH TO GROUNDWATER
T-1	881	854.5	NONE TO 867.0	---
T-2	878	854.5	NONE TO 863.0	---
TP-3	872	855.5	NONE TO 858.0	---
TP-4	874.5	870	NONE TO 859.5	---
TP-5	882	876	NONE TO 869.0	---
TP-6	887	887	NONE to 873.0	---
TP-7	893	893	881'	---
TP-8	916	916	913	---
TP-9	927	927	918	---
TP-10	910	910	904.5	---
TP-11	881	865	867	---
TP-12	875	875	867	---
TP-13	882	882	876	---
TP-14	903	903	897	---
TP-15	942	942	936	---
TP-16	980	980	975	---
SLR-1	874	865	NONE TO 853.5	---
SLR-2	894	894	889	---
SLR-3	867	852	NONE TO 842	---
SLR-4	888	888	873	---
SLR-5	890	886	862	---
SLR-6	920	920	910	---
SLR-10	884	854	NONE TO 829.0	42.9
SLR-11	871.5	855	NONE TO 795.5	NONE TO 45.2
SLR-12	888.5	888.5	877.5	1.5

SUBSURFACE DATA FROM TEST PIT, BORING, AND WELL INSTALLATION LOGS CONTAINED IN THE LIMITED GEOHYDROLOGIC INVESTIGATION BY SLR INTERNATIONAL CORPORATION, DATED MARCH 25, 2022.

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- WETLAND BUFFER
- SOILS SURVEYED BY THOMAS SOKOLOSKI
- SOILS SURVEYED BY LUKE HURLEY
- NRCS SOILS
- EX./PROP. TREELINE
- PROP. GRADE LINE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- PERIOD LINE
- TOWN LINE

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CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
IMPACT CONTROL & MONITORING PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=50'
SHEET:	11 OF 23	

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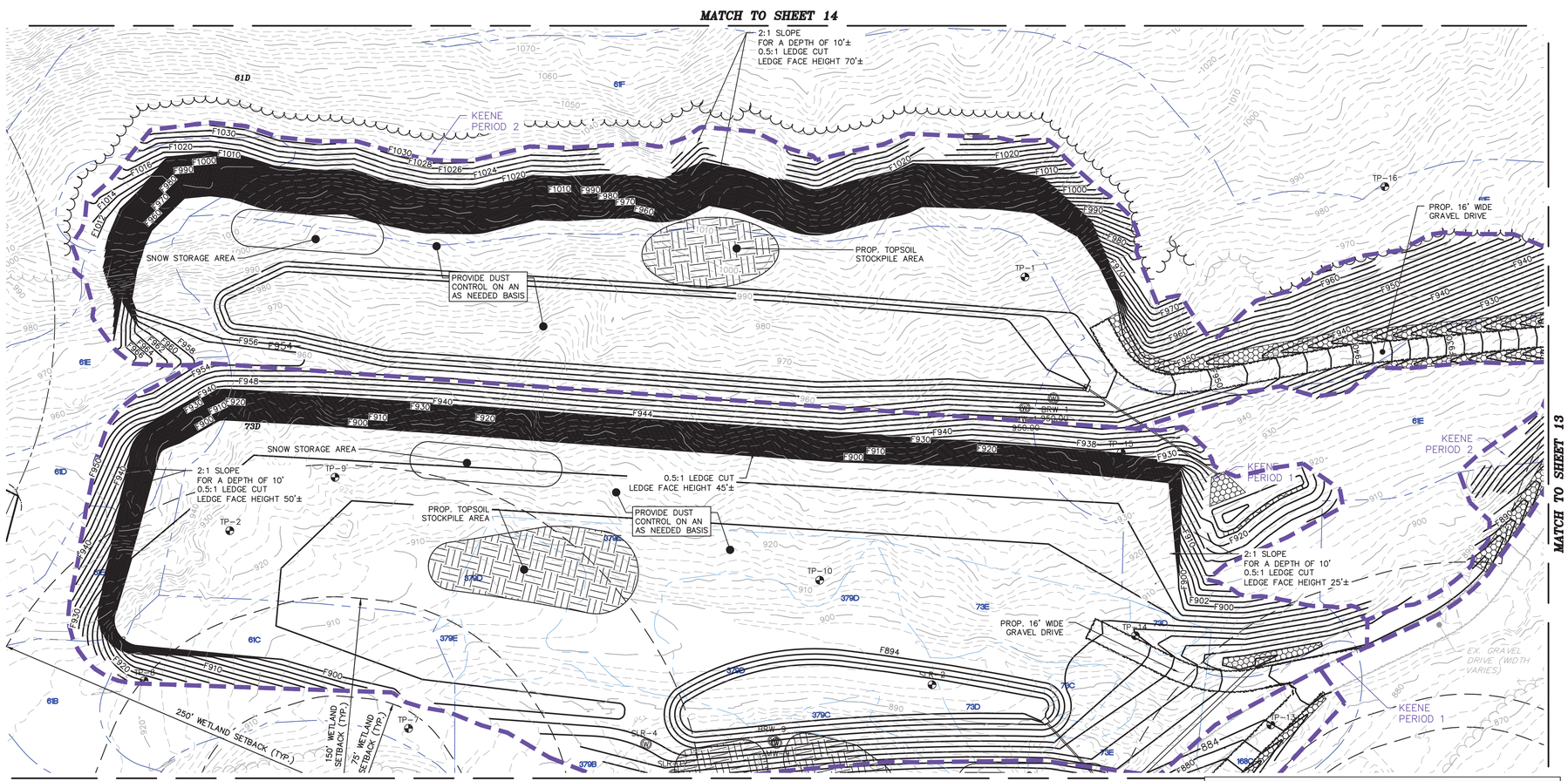

NOISE IMPACT CONTROL AND MONITORING NOTES:

1. NOISE LEVELS GENERATED FROM EXCAVATION ACTIVITIES SHALL NOT EXCEED THE BACKGROUND AMBIENT 'A' WEIGHTED SOUND PRESSURE LEVEL EXCEEDED 90% OF THE TIME DURING THE SOUND LEVEL SAMPLING PERIOD, (HEREINAFTER DB(A) L('90')') BY MORE THAN 10 DB(A) AND IN ANY EVENT SHALL NOT EXCEED 55 DB(A) HEREINAFTER 'L(MAX)').
2. MONITORING DEVICES. ALL SOUND LEVEL MONITORING DEVICES SHALL MEET AMERICAN NATIONAL STANDARDS INSTITUTE S 1.4 TYPE 1 OR 2 STANDARDS. WITH THE DEVICE SET TO 'FAST' RESPONSE. MONITORING DEVICES SHALL BE PROPERLY CALIBRATED AND MAINTAINED IN GOOD WORKING ORDER. MONITORING DEVICES SHALL INCLUDE DATA RECORDING CAPABILITIES THAT ENABLE CONTINUOUS DOCUMENTATION OF SOUND LEVELS DURING THE OPERATING DAY.
3. MONITORING LOCATIONS. SOUND LEVELS SHALL BE MONITORED FROM AT LEAST 2 LOCATIONS AS DETERMINED BY THE COMMUNITY DEVELOPMENT DIRECTOR, OR THEIR DESIGNEE, WITH THE ADVICE OF OTHER CITY STAFF AND THE PLANNING BOARD'S CONSULTANT.
   A. IF A MONITORING LOCATION IS SELECTED AT A POINT BEYOND THE PROPERTY BOUNDARY, WRITTEN PERMISSION TO USE THAT LOCATION FOR MONITORING SHALL BE OBTAINED FROM THE PROPERTY OWNER OF THE MONITORING SITE.
   B. AS NOISE-GENERATING EQUIPMENT IS RELOCATED WITHIN THE APPROVED EXCAVATION PERIMETER, NEW MONITORING LOCATIONS MAY BE SELECTED TO HELP ENSURE CONTINUED COMPLIANCE WITH THE NOISE STANDARD.
   C. THE EXCAVATION OPERATOR SHALL MAINTAIN A LOG OF ALL MONITORING ACTIVITIES INDICATING THE DATE, TIME PERIOD AND LOCATION OF THE RECORDED MEASUREMENTS; THE OPERATIONS BEING PERFORMED ON THE SITE AT THE TIME OF MONITORING; THE WEATHER CONDITIONS AT THE TIME OF THE MEASUREMENT, INCLUDING TEMPERATURE, WIND DIRECTION, WIND SPEED, CLOUD COVER AND PRECIPITATION; AND THE RESULTS OF THE MONITORING, INCLUDING A GRAPH OF THE CONTINUOUS MONITORING RECORD. THE CALCULATED A WEIGHTED SOUND PRESSURE LEVEL EXCEEDED 90% OF THE MEASUREMENT TIME (HEREINAFTER 'DB(A) L('90')') AND THE CALCULATED MAXIMUM DB(A) SOUND LEVEL (HEREINAFTER 'L(MAX)').
4. AMBIENT SOUND LEVELS: THE BACKGROUND AMBIENT SOUND LEVELS SHALL BE MEASURED PRIOR TO THE COMMENCEMENT OF THE INITIAL OPERATION.
   A. THE BACKGROUND SOUND LEVELS SHALL BE MEASURED ON THE DB(A) SCALE, BY RECORDING CONTINUOUS MEASUREMENTS DURING PROPOSED OPERATING HOURS OVER 5 CONSECUTIVE BUSINESS DAYS PRIOR TO THE COMMENCEMENT OF SITE PREPARATION ACTIVITIES, AND CALCULATING THE DB(A) L(90) FOR THE ENTIRE MONITORING PERIOD. SUCH MEASUREMENTS SHALL BE PERFORMED BY A CONSULTANT HIRED BY THE PLANNING BOARD AT THE APPLICANT'S EXPENSE.
   B. THE APPLICANT/OPERATOR MAY REQUEST THAT THE BACKGROUND SOUND LEVEL BE RE-MEASURED. SUCH RE-MEASUREMENT SHALL BE DONE AT A TIME SELECTED BY THE COMMUNITY DEVELOPMENT DIRECTOR IN CONSULTATION WITH THE APPLICANT AND A CONSULTANT HIRED BY THE PLANNING BOARD TO PERFORM THE MEASUREMENT AT THE APPLICANT'S EXPENSE.
5. ONGOING MONITORING: THE APPLICANT SHALL MONITOR AT THE SELECTED MONITORING LOCATIONS THE SOUND LEVELS GENERATED BY THE OPERATION, AS FOLLOWS.
   A. ON AN ANNUAL BASIS, AT A TIME SELECTED BY THE COMMUNITY DEVELOPMENT DIRECTOR, IN CONSULTATION WITH THE APPLICANT, SOUND LEVELS SHALL BE MONITORED AND RECORDED CONTINUOUSLY DURING OPERATING HOURS FOR A PERIOD OF NOT LESS THAN 20 CONSECUTIVE OPERATING DAYS. MONITORING SHALL BE MADE USING THE DB(A) SCALE AND THE DB(A) L(90) DURING THE OPERATING HOURS FOR EACH DAY AND THE L(MAX) SOUND LEVEL THROUGHOUT EACH DAY SHALL BE CALCULATED AND ENTERED INTO A NOISE MONITORING LOG MAINTAINED BY THE APPLICANT.
   B. AT ANY TIME WHEN NEW OR ADDITIONAL NOISE GENERATING EQUIPMENT IS PLACED INTO OPERATION FOLLOWING THE INITIAL 20-DAY MONITORING PERIOD, OR WHEN NOISE GENERATING EQUIPMENT IS RELOCATED WITHIN THE APPROVED EXCAVATION PERIMETER, SOUND LEVELS SHALL ALSO BE MONITORED CONTINUOUSLY AND RECORDED DURING OPERATING HOURS FOR A PERIOD OF NOT LESS THAN 5 CONSECUTIVE OPERATING DAYS. THE DB(A) L(90) DURING THE OPERATING HOURS FOR EACH DAY AND THE L(MAX) SOUND LEVEL THROUGHOUT EACH DAY SHALL BE CALCULATED AND ENTERED INTO A NOISE MONITORING LOG MAINTAINED BY THE APPLICANT.
   C. WHEN NEW OR ADDITIONAL NOISE GENERATING EQUIPMENT OR ACTIVITIES INCLUDING BUT NOT LIMITED TO DRILLING OR BLASTING ACTIVITIES WERE NOT MEASURED DURING THE INITIAL 20-DAY MONITORING PERIOD AND ARE TO BE USED ONLY FOR SHORT DURATIONS RANGING FROM A PERIOD OF HOURS TO SEVERAL DAYS, NOT EXCEEDING 5 OPERATING DAYS, SOUND LEVELS SHALL BE MONITORED AND RECORDED CONTINUOUSLY FOR THE DURATION OF THE ACTIVITIES.
   D. IN THE EVENT THAT THE MEASUREMENTS EXCEED THE NOISE STANDARDS IN THIS ARTICLE, THE APPLICANT SHALL BRING THE OPERATION INTO COMPLIANCE BY REDUCING THE NUMBER OF SOUND SOURCES CONTRIBUTING TO THE SOUND LEVEL, BY RELOCATING EQUIPMENT ON THE SITE, BY ADDING NOISE ATTENUATING STRUCTURES AROUND OR ATTACHMENTS TO THE EQUIPMENT, OR BY TAKING WHATEVER OTHER ACTIONS MAY BE NECESSARY TO BRING THE OPERATION INTO COMPLIANCE.
      a) ANY CORRECTIVE ACTION TAKEN SHALL BE CLEARLY DESCRIBED IN THE NOISE MONITORING LOG ALONG WITH A RECORD OF THE NOISE LEVEL MEASUREMENTS BEFORE AND AFTER SAID CORRECTION.
      b) ADDITIONAL NOISE LEVELS SHALL BE MONITORED FOR NO LESS THAN 5 CONSECUTIVE DAYS AFTER THE CORRECTIVE ACTION IS TAKEN.
6. COMPLAINTS REGARDING THE LEVEL OF NOISE GENERATED FROM EXCAVATION OPERATIONS SHALL BE RESOLVED PER THE PROCEDURES OUTLINED IN 24.3.15.E OF THE CITY OF KEENE LAND DEVELOPMENT CODE.

HAZARDOUS AND TOXIC SPILL RESPONSE NOTES:

1. SPILL CONTROL PRACTICES ARE OUTLINED IN THE STORMWATER POLLUTION PREVENTION PLANS (SWPPP).
2. THE CHEMICALS EMPLOYED ON-SITE WILL VARY THROUGHOUT THE EXCAVATION PROCESS, PRIMARILY CONSISTING OF PETROLEUM-BASED OILS, LUBRICANTS, AND GASOLINE-BASED FUELS. THESE SUBSTANCES MUST BE STORED SECURELY IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND MUST BE ACCOMPANIED BY MATERIAL SAFETY DATA SHEETS AND SPILL RESPONSE MATERIALS.
3. STRICT PRECAUTIONS MUST BE TAKEN DURING ON-SITE FUELING OPERATIONS TO PREVENT SPILLS AND OVERFILLING.

LOAM & SEED ALL DISTURBED AREAS (TYP.)

SEE SHEET 1 FOR OPERATION NOTES (TYP.)

SEE SHEET 4 FOR EROSION CONTROL NOTES (TYP.)

DUST CONTROL & MONITORING NOTES:

1. THE SITE SHALL OPERATE IN A MANNER THAT PREVENTS FUGITIVE DUST EMISSIONS PUSUANT TO NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES ENV-A 1002, FUGITIVE DUST.
2. DUST CONTROL PRACTICES ARE OUTLINED IN THE STORMWATER POLLUTION PREVENTION PLANS (SWPPP).
3. DUST CONTROL ACTIVITIES AND DEVICES SHALL BE INCORPORATED INTO THE EXCAVATION OPERATION, ON THE SITE AND ON THE ACCESS DRIVEWAY, IN A MANNER THAT MINIMIZES GENERATION OF AIRBORNE DUST OR TRANSPORTATION OF DUST OR MUD OFF THE SITE ONTO THE ADJACENT ROADWAYS.
   A. VISUAL MONITORING OF AIRBORNE DUST SHALL BE DONE ON AN ONGOING BASIS.
   B. DUST CONTROL MEASURES SUCH AS APPLYING WATER TO ACCESS DRIVEWAYS AND OTHER AREAS WITHIN THE EXCAVATION PERIMETER, WASHING DIRT FROM TRUCK TIRES, OR OTHER MEASURES AS MAY BE DEEMED NECESSARY, SHALL BE EMPLOYED TO MINIMIZE THE GENERATION OF AIRBORNE DUST, AND/OR THE TRANSPORTATION OF DIRT/MUD OFF THE SITE ONTO ADJACENT ROADWAYS.
   C. DUST CONTROL WILL BE ACCOMPLSHED USING A TRUCK-MOUNTED WATER TANK AND SPRAY SYSTEM AS NEEDED.
   D. INSPECTION OF ACCESS DRIVEWAY STABILIZED CONSTRUCTION ENTRANCES AND OTHER EROSION CONTROL MEASURES, DESIGNED TO ELIMINATE THE DEPOSIT OF DUST OR MUD ONTO PUBLIC STREETS, SHALL BE CONDUCTED ON A WEEKLY BASIS TO ENSURE PROPER FUNCTIONING. MAINTENANCE OF THESE ENTRANCES SHALL BE PERFORMED AS NECESSARY AND ANY DIRT OR MUD DEPOSITED ON PUBLIC STREETS SHALL BE REMOVED.
   E. THE APPLICANT SHALL MAINTAIN A LOG DOCUMENTING DUST CONTROL ACTIVITIES, INSPECTION AND MAINTENANCE OF DUST AND DIRT CONTROL STRUCTURES AND DEVICES, AND CLEAN UP OF DIRT DEPOSITED ON ROADWAYS LEADING FROM THE SITE. THE OPERATION AND MAINTENANCE MANUAL, LOCATED WITHIN THE STORMWATER MANAGEMENT REPORT, SHALL BE USED FOR INSTURCTIONS OF HOW TO INSPECT AND MAINTAIN EROSION AND SEDIMENT CONTROL PRACTICES.

FUELING NOTES:

1. FUELING AND MAINTENANCE OF EQUIPMENT OR VEHICLE PRACTICES ARE OUTLINED IN THE STORMWATER POLLUTION PREVENTION PLANS (SWPPP).
2. FUELS AND REGULATED SUBSTANCES WILL BE STORED IN A SEALED AND CLEARED LABELED CONTAINER WITHIN THE ENCLOSED CHEMICAL STORAGE AREA.
3. THE ENCLOSED CHEMICAL STORAGE AREA WILL BE STABLE, LEVEL AND IMPERVIOUS.
4. SECONDARY CONTAINMENT WILL BE PROVIDED FOR FUELING ACTIVITIES ON SITE.
5. MOBILE FUELING WILL BE USED DURING EXCAVATION ACTIVITIES.
6. ALL FUELING AND STORAGE OF FUELS ON SITE WILL COMPLY WITH STATE AND FEDERAL REQUIREMENTS.
7. EMPLOYEES WHO PARTAKE IN FUELING ACTIVITIES SHALL BE TRAINED ON SPILL PREVENTION AND CONTROL.
8. ANY SPILL THAT IS: 25 GALLONS OR MORE, NOT IMMEDIATELY CONTAINED, REMOVED WITHIN 24-HRS, A POTENTIAL SURFACE WATER OR GROUNDWATER IMPACT, SHALL BE REPORTED TO NHDES AT (603) 271-3899 OR STATE POLICE AT (603) 223-4381.
9. CONTAMINATED SOILS OR MATERIALS SHALL BE STORED AND DISPOSED OF IN ACCORDANCE WITH ALL STATE AND FEDERAL REQUIREMENTS. CONTACT NHDES HAZARDOUS WASTE MANAGEMENT BUREAU'S COMPLIANCE SECTION AT (603) 271-2942 FOR INFORMATION REGARDING HAZARDOUS MATERIALS.
10. THE CHEMICAL STORAGE AREA SHALL BE KEPT LOCKED WHEN NOT IN USE.
11. ALL FUELING RELATED ACTIVITIES SHALL BE AT LEAST 50' AWAY FROM ANY CATCH BASIN OR SURFACE WATER.

SUBSURFACE DATA

LOG	EXISTING GROUND	PROPOSED GRADE	LEDGE	DEPTH TO GROUNDWATER
T-1	881	854.5	NONE TO 867.0	---
T-2	878	854.5	NONE TO 863.0	---
TP-3	872	855.5	NONE TO 858.0	---
TP-4	874.5	870	NONE TO 859.5	---
TP-5	882	876	NONE TO 869.0	---
TP-6	887	887	NONE to 873.0	---
TP-7	893	893	881'	---
TP-8	916	916	913	---
TP-9	927	927	918	---
TP-10	910	910	904.5	---
TP-11	881	865	867	---
TP-12	875	875	867	---
TP-13	882	882	876	---
TP-14	903	903	897	---
TP-15	942	942	936	---
TP-16	980	980	975	---
SLR-1	874	865	NONE TO 853.5	---
SLR-2	894	894	889	---
SLR-3	867	852	NONE TO 842	---
SLR-4	888	888	873	---
SLR-5	890	886	862	---
SLR-6	920	920	910	---
SLR-10	884	854	NONE TO 829.0	42.9
SLR-11	871.5	855	NONE TO 795.5	NONE TO 45.2
SLR-12	888.5	888.5	877.5	1.5

SUBSURFACE DATA FROM TEST PIT, BORING, AND WELL INSTALLATION LOGS CONTAINED IN THE LIMITED GEOHYDROLOGIC INVESTIGATION BY SLR INTERNATIONAL CORPORATION, DATED MARCH 25, 2022.

DEICING NOTES:

A. RECORDS FOR TRACKING THE USE OF SALT AND OTHER DEICERS FOR EACH STORM EVENT SHALL BE MAINTAINED UNTIL ALL AREAS HAVE BEEN RECLAIMED. THE DEICING APPLICATION RATE GUIDELINES SHALL FOLLOW THE RECOMMENDATIONS IN THE NH STORMWATER MANUAL: VOLUME 2, LATEST EDITION.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

LEGEND

- ABUTTER LINE
- PROPERTY LINE
- EXCAVATION SETBACK LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- PROPOSED EDGE OF GRAVEL
- WETLANDS BOUNDARY
- WETLAND BUFFER
- SOILS SURVEYED BY THOMAS SOKOLOSKI
- SOILS SURVEYED BY LUKE HURLEY
- NRCS SOILS
- EX./PROP. TREELINE
- PROP. GRADE LINE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- PERIOD LINE
- TOWN LINE

DIG SAFE
811
UTILITIES UNDERGROUND
CALL TOLL FREE
DAMAGE PREVENTION SYSTEM

NRCS SOILS LEGEND

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60	TUNBRIDGE-BERKSHIRE COMPLEX, RATED C
61	TUNBRIDGE-LYMAN-ROCK OUTCROP COMPLEX, RATED C
73	BERKSHIRE FINE SANDY LOAM, RATED B
77	MARLOW FINE SANDY LOAM, VERY STONY, RATED C
161	LYMAN-TUNBRIDGE-ROCK OUTCROP COMPLEX, RATED D
169	SUNAPEE FINE SANDY LOAM, RATED C

SITE SPECIFIC SOIL SURVEY NOTES:

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

HYDROLOGIC SSSM SYM.	SSS MAP NAME	HISS SYM.	SOIL GRP
168	SUNAPEE	321	B
61	TURNBRIDGE LYMAN ROCK OUTCROP	224/227	C
92	LYMAN	224	D

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

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1	12/20/24	PROJECT SUBMITTAL	JD
2	2/3/25	REVISED PER CITY COMMENTS	JD
3	5/5/25	REVISED PER CITY COMMENTS	JD
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62 HOLDINGS, LLC
250 NORTH STREET
JAFFREY, NH 03452

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STAMP:
STATE OF NEW HAMPSHIRE
BRENTON J. BOLE
No. 14744
8/11/25
LICENSED PROFESSIONAL ENGINEER

LUKE P. HURLEY
No. 095M
7/15/25
STATE OF NEW HAMPSHIRE
CERTIFIED SOIL SCIENTIST

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES
KEENE

TITLE:
IMPACT CONTROL & MONITORING PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=50'
SHEET: 12 OF 23		

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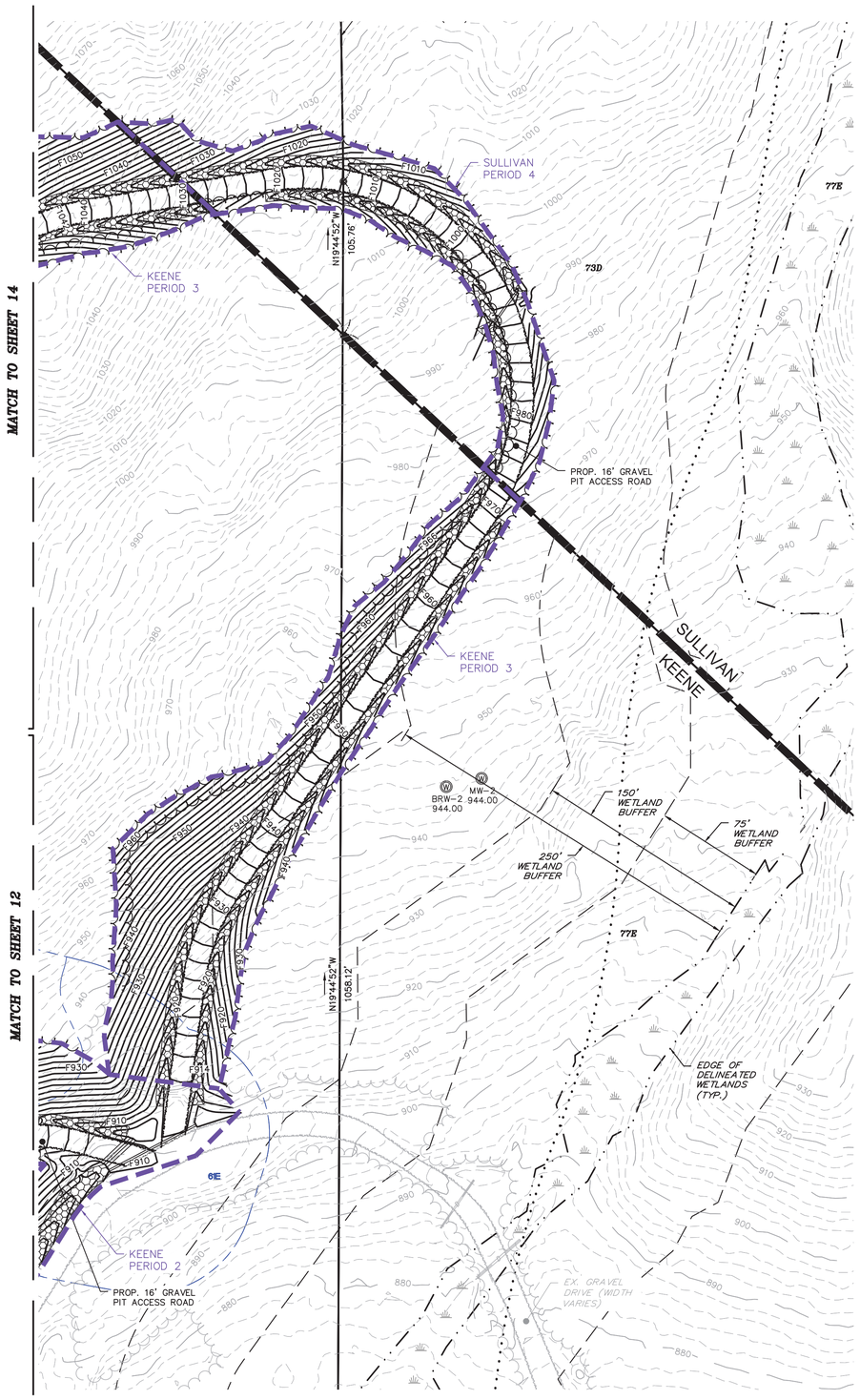

SEE SHEET 1 FOR OPERATION NOTES (TYP.)

SEE SHEET 12 FOR IMPACT CONTROL & MONITORING PLAN NOTES (TYP.)

LOAM & SEED ALL DISTURBED AREAS (TYP.)

N

LEGEND

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- PROPERTY LINE
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SLOPE PERIOD:
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LUKE D. HURLEY — STATE OF NEW HAMPSHIRE — NO. 095M — CERTIFIED SOIL SCIENTIST

DIG SAFE — CALL TOLL FREE — 811 — DAMAGE PREVENTION SYSTEM — UTILITIES UNDERGROUND

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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STAMP:
STATE OF NEW HAMPSHIRE — BRENTON S. EGLE — No. 14744 — 8/11/25 — LICENSED PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
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CHESHIRE COUNTY

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TITLE:
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SHEET: 13 OF 23		

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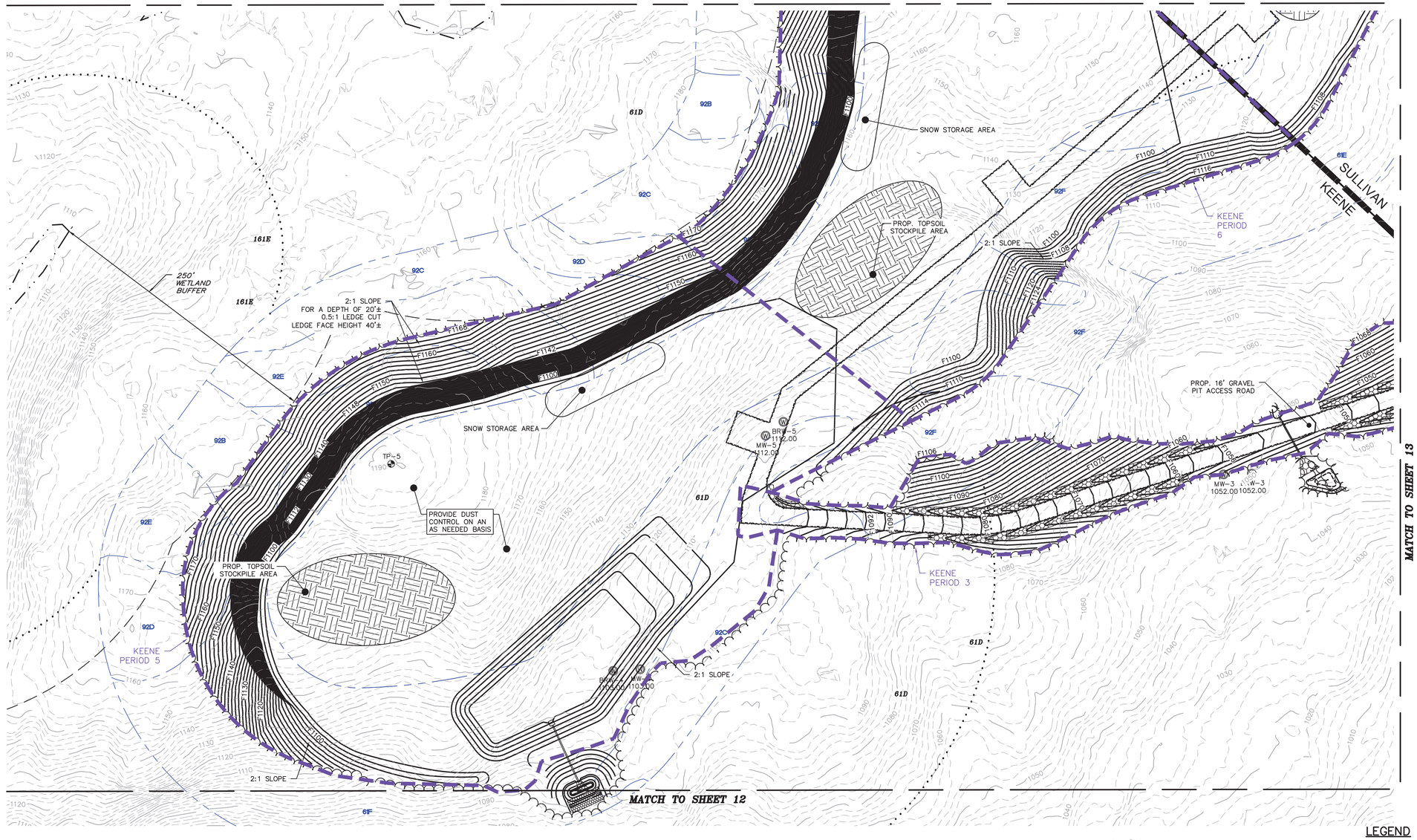

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STATE OF NEW HAMPSHIRE LUKE D. HURLEY No. 095 7/15/24 CERTIFIED SOIL SCIENTIST

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SEE SHEET 1 FOR OPERATION NOTES (TYP.)

LOAM & SEED ALL DISTURBED AREAS (TYP.)

DIG SAFE — CALL TOLL FREE 811 — DAMAGE PREVENTION SYSTEM — IT'S LIFE'S UNDERGROUND

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PROJECT:
GORDON SERVICES KEENE

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PROJECT No.	DATE:	SCALE:
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SHEET: 14 OF 23		

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

THE SITE SPECIFIC SOIL SURVEY (SSSS) WAS PRODUCED JULY 15, 2024, AND WAS PREPARED BY LUKE HURLEY, CSS #095M, HURLEY ENVIRONMENTAL AND LAND PLANNING, LLC.

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

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

HYDROLOGIC SSSM SYM.	SSS MAP NAME	HISS SYM.	SOIL GRP.
168	SUNAPEE	321	B
61	TURNBRIDGE LYMAN ROCK OUTCROP	224/227	C
92	LYMAN	224	D

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

STATE OF NEW HAMPSHIRE
LUKE D. HURLEY
NO. 095
CERTIFIED SOIL SCIENTIST

NRCS SOILS LEGEND

22	COLTON GRAVELLY SANDY LOAM, RATED A
60	TUNBRIDGE-BERKSHIRE COMPLEX, RATED C
61	TUNBRIDGE-LYMAN-ROCK OUTCROP COMPLEX, RATED C
73	BERKSHIRE FINE SANDY LOAM, RATED B
77	MARLOW FINE SANDY LOAM, VERY STONY, RATED C
161	LYMAN-TUNBRIDGE-ROCK OUTCROP COMPLEX, RATED D
169	SUNAPEE FINE SANDY LOAM, RATED C

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SEE SHEET 12 FOR IMPACT CONTROL & MONITORING PLAN NOTES (TYP.)

SEE SHEET 1 FOR OPERATION NOTES (TYP.)

LOAM & SEED ALL DISTURBED AREAS (TYP.)

LEGEND

- ABUTTER LINE
- PROPERTY LINE
- EXCAVATION SETBACK LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- PROPOSED EDGE OF GRAVEL
- WETLANDS BOUNDARY
- WETLAND BUFFER
- SOILS SURVEYED BY THOMAS SOKOLOSKI
- SOILS SURVEYED BY LUKE HURLEY
- NRCS SOILS
- EX./PROP. TREELINE
- PROP. GRADE LINE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- PERIOD LINE
- TOWN LINE

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

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REVISIONS

No.	DATE	COMMENTS	BY
1	12/20/24	PROJECT SUBMITTAL	JD
2	2/3/25	REVISED PER CITY COMMENTS	JD
3	5/9/25	REVISED PER CITY COMMENTS	JD
4	7/9/25	REVISED PER CITY COMMENTS	JD
5	7/24/25	ADDITIONAL WELL LOCATIONS	JD
6	8/11/25	REVISED PER CITY COMMENTS	JD

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STAMP:
STATE OF NEW HAMPSHIRE
BRENTON J. COLE
No. 14744
8/11/25
LICENSED PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES
KEENE

TITLE:
IMPACT CONTROL & MONITORING PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=50'
SHEET: 15 OF 23		

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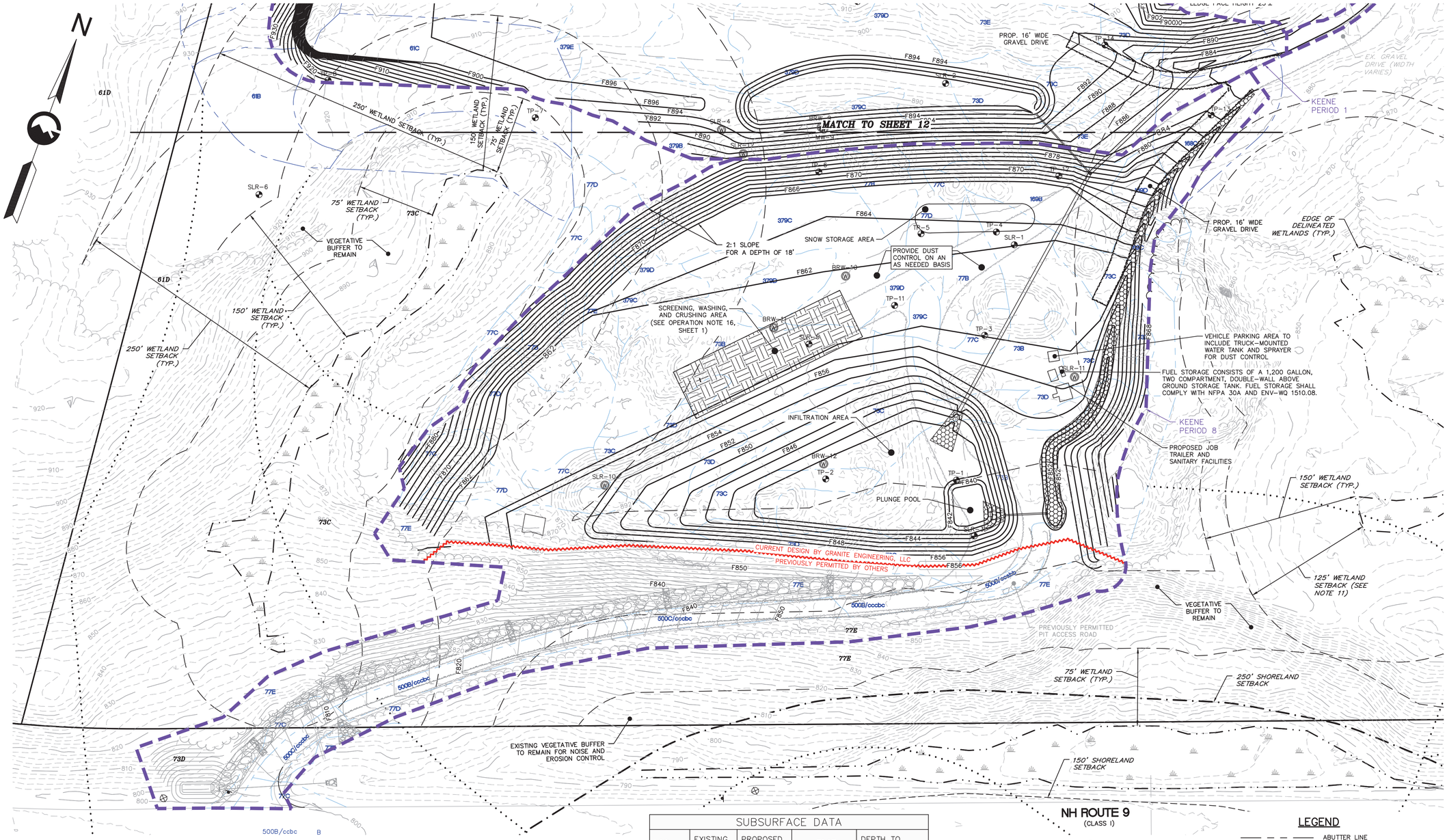

SSSS LEGEND (SURVEYED BY THOMAS SOKOLOSKI)

		HYDROLOGIC SOIL GROUP
73B	BERKSHIRE FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	B
73C	BERKSHIRE FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	B
73D	BERKSHIRE FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	B
73E	BERKSHIRE FINE SANDY LOAM, 25%+ SLOPES , VERY STONY	B
77B	BERKSHIRE FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	C
77C	BERKSHIRE FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	C
77D	BERKSHIRE FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	C
77E	BERKSHIRE FINE SANDY LOAM, 25%+ SLOPES, VERY STONY	C
169B	SUNAPEE FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	B
169C	SUNAPEE FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	B
169D	SUNAPEE FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	B
379B	DIXFIELD FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	C
379C	DIXFIELD FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	C
379D	DIXFIELD FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	C
500B/ccabb	UDORTHENTS, LOAMY, 0–8% SLOPES	B
500B/ccabb	UDORTHENTS, LOAMY, 0–8% SLOPES	B
500B/ccabb	URBAN LAND, 8–15% SLOPES	B

SEE SHEET 1 FOR OPERATION NOTES (TYP.)

SEE SHEET 12 FOR IMPACT CONTROL & MONITORING PLAN NOTES (TYP.)

LOAM & SEED ALL DISTURBED AREAS (TYP.)

SUBSURFACE DATA

LOG	EXISTING GROUND	PROPOSED GRADE	LEDGE	DEPTH TO GROUNDWATER
T–1	881	854.5	NONE TO 867.0	---
T–2	878	854.5	NONE TO 863.0	---
TP–3	872	855.5	NONE TO 858.0	---
TP–4	874.5	870	NONE TO 859.5	---
TP–5	882	876	NONE TO 869.0	---
TP–6	887	887	NONE to 873.0	---
TP–7	893	893	881'	---
TP–8	916	916	913	---
TP–9	927	927	918	---
TP–10	910	910	904.5	---
TP–11	881	865	867	---
TP–12	875	875	867	---
TP–13	882	882	876	---
TP–14	903	903	897	---
TP–15	942	942	936	---
TP–16	980	980	975	---
SLR–1	874	865	NONE TO 853.5	---
SLR–2	894	894	889	---
SLR–3	867	852	NONE TO 842	---
SLR–4	888	888	873	---
SLR–5	890	886	862	---
SLR–6	920	920	910	---
SLR–10	884	854	NONE TO 829.0	42.9
SLR–11	871.5	855	NONE TO 795.5	NONE TO 45.2
SLR–12	888.5	888.5	877.5	1.5

SUBSURFACE DATA FROM TEST PIT, BORING, AND WELL INSTALLATION LOGS CONTAINED IN THE LIMITED GEOHYDROLOGIC INVESTIGATION BY SLR INTERNATIONAL CORPORATION, DATED MARCH 25, 2022.

NH ROUTE 9
(CLASS I)

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GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

LEGEND

- ABUTTER LINE
- PROPERTY LINE
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- EXISTING EDGE OF PAVEMENT
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23-0201-1	MAY 9, 2025	HORIZ. 1"=50'
SHEET: 16 OF 23		

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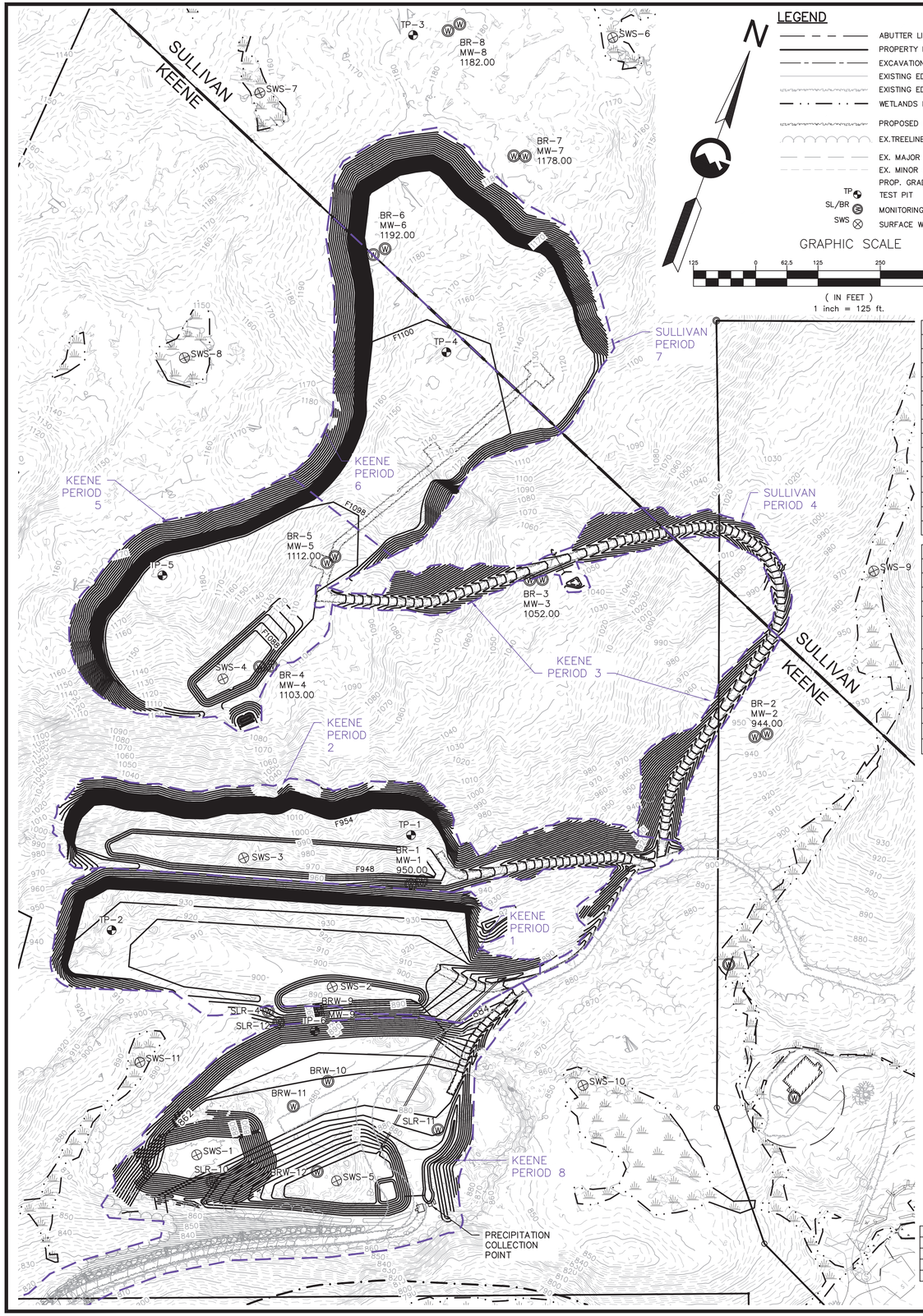

LEGEND

- ABUTTER LINE
- PROPERTY LINE
- EXCAVATION SETBACK LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- WETLANDS BOUNDARY
- PROPOSED EDGE OF GRAVEL
- EX.TREELINE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- PROP. GRADE LINE
- TP — TEST PIT
- SL/BR — MONITORING WELL
- SWS — SURFACE WATER SAMPLE LOCATION

GRAPHIC SCALE

125 0 62.5 125 250 500

(IN FEET)
1 inch = 125 ft.

ACID ROCK DRAINAGE (ARD) MONITORING		
MONITORING LOCATION	TESTING MONTHS	FREQUENCY
SLR-10	APRIL & OCTOBER	BI-ANNUALLY
SLR-11	APRIL & OCTOBER	BI-ANNUALLY
SLR-12	APRIL & OCTOBER	BI-ANNUALLY
BR-1	APRIL & OCTOBER	BI-ANNUALLY
BR-2	APRIL & OCTOBER	BI-ANNUALLY
BR-3	APRIL & OCTOBER	BI-ANNUALLY
BR-4	APRIL & OCTOBER	BI-ANNUALLY
BR-5	APRIL & OCTOBER	BI-ANNUALLY
BR-6	APRIL & OCTOBER	BI-ANNUALLY
BR-7	APRIL & OCTOBER	BI-ANNUALLY
BR-8	APRIL & OCTOBER	BI-ANNUALLY
SWS-1	APRIL & OCTOBER	BI-ANNUALLY UNTIL START OF PERIOD 8
SWS-2	APRIL & OCTOBER	BI-ANNUALLY AFTER START OF PERIOD 1
SWS-3	APRIL & OCTOBER	BI-ANNUALLY AFTER START OF PERIOD 21
SWS-4	APRIL & OCTOBER	BI-ANNUALLY AFTER START OF PERIOD 5
SWS-5	APRIL & OCTOBER	BI-ANNUALLY AFTER START OF PERIOD 8

WATER LEVEL MONITORING	
MONITORING LOCATION	FREQUENCY
SLR-10	MONTHLY
SLR-11	MONTHLY
SLR-12	MONTHLY
MW-2	MONTHLY
MW-4	MONTHLY
BR-7	MONTHLY
BR-8	MONTHLY
SWS-6	MONTHLY
SWS-7	MONTHLY
SWS-8	MONTHLY
SWS-9	MONTHLY
SWS-10	MONTHLY
SWS-11	MONTHLY

AMD FORMATION STANDARDS	
ANALYTE	STANDARD
SPECIFIC CONDUCTANCE	NO STANDARD
OXIDATION REDUCTION POTENTIAL	NO STANDARD
DISSOLVED OXYGEN	75%/5 mg/L
TURBIDITY	10 NTU (BEYOND NATURALLY OCCURRING CONDITIONS)
pH	6.0 SU
ARSENIC	5 µg/L
COPPER	1,300 µg/L
IRON	300 µg/L
MANGANESE	300 µg/L
NICKEL	100 µg/L
LEAD	15 µg/L

TEST PITS

ID	EXISTING GRADE	LEDGE	GROUNDWATER	E.S.H.W.T.
TP-1	986.0	3.1'	NONE FOUND	NONE FOUND
TP-2	926.0	NONE	NONE FOUND	20"
TP-3	1180.0	NONE	NONE FOUND	NONE FOUND
TP-4	1158.0	NONE	NONE FOUND	32"
TP-5	1190.0	0.5'	NONE FOUND	NONE FOUND
TP-6	887.0	873.0	NONE FOUND	NONE FOUND

OVERBURDEN WELLS

WELL	EXISTING GRADE	LEDGE	GROUNDWATER
MW-1	950.0	3.3'	NONE FOUND
MW-2	944.0	12'	NONE FOUND
M3-3	1052.0	14.2'	NONE FOUND
MW-4	1103.0	3.1'	NONE FOUND
MW-5	1112.0	5'	NONE FOUND
MW-6	1192.0	0.9'	NONE FOUND
MW-7	1178.0	1.9'	NONE FOUND
MW-8	1182.0	1.1'	NONE FOUND
MW-9	884.38	XX	XX

BEDROCK WELLS

Well	Ground Elevation (ft AMSL)	Bedrock Depth (feet)	Depth/Bottom Elevation (feet/ ft AMSL)	Proposed Pit Floor Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)
BRW-1	950	3	54/896	950	DRY
BRW-2	944	12	62/882	940	DRY
BRW-3	1052	14	51/1,001	1,050	DRY
BRW-4	1,103	3	81/1,022	1,098	DRY
BRW-5	1,112	3	141/971	1,098	DRY
BRW-6	1,192	1	142/1,050	1,098	DRY
BRW-7	1,178	1.9	141/1,037	1,098*	1,177.04
BRW-8	1,182	1	141/1,041	1,098*	1,179.16

*Well is located outside of project area. The pit floor elevation that is noted is the proposed elevation of the nearest excavation.

WELL	EXISTING GRADE	TOP OF WELL	DEPTH	GROUNDWATER
BRW-9	884.31	886.81	50'	877.91
BRW-10	879.94	884.34	85'	854.44
BRW-11	881.39	885.19	85'	839.96
BRW-12	882.74	886.74	90'	830.92

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ON-SITE WATER QUALITY MONITORING NOTES (ARD MONITORING)

1. PH, SPECIFIC CONDUCTANCE, OXIDATION, REDECTION POTENTIAL, DISSOLVED OXYGEN AND TURBITY AND LABRATORY ANALYSIS OF DISSOLVED AND TOTAL METALS INCLUDING; ARSENIC, COPPER, IRON, MAGNESE, NICKEL AND LEAD WILL BE TESTED AT EACH LOCATION

INITIAL RESPONSE ACTION – AMD DETECTION

IF A SURFACE AND/OR GROUNDWATER SAMPLING LOCATION PRESENTS RESULTS THAT ARE INDICATIVE OF THE FORMATION OF ACID MINE DRAINAGE, NHDES AND THE CITY OF KEENE WILL BE NOTIFIED IMMEDIATELY. FURTHERMORE, THE FOLLOWING IMMEDIATE INITIAL RESPONSE ACTIONS WILL BE IMPLEMENTED.

1. ALL ACTIVE QUARRYING/MINING OPERATIONS OCCURRING IN THE AFFECTED AREA WILL CEASE AND EXPOSED BEDROCK SURFACES SHALL BE EXPEDITIOUSLY RESTORED TO HAVE A MINIMUM THICKNESS OF 3-FEET OF COVER MATERIAL. THE COVER MATERIAL SHALL CONSIST OF A MINIMUM OF 30% CLAY CONTENT. COVER MATERIAL SHALL BE COMPACTED IN 1-FOOT LIFTS. THE INTENT OF THE CLAY CONTENT AND COMPACTION IS TO LIMIT AIR AND SURFACE WATER CONTACT WITH THE SOURCE OF THE ACID MINE DRAINAGE.
2. ANY DOWNSLOPE AFFECTED DRAINAGES WHICH MAY BE CONTRIBUTING/CONVEYING ACID MINE DRAINAGE SHALL BE ARMORED WITH 1-FOOT OF 2-INCH MINUS, CRUSHED, LIMESTONE GRAVEL.
3. THE FREQUENCY OF SURFACE WATER AND GROUNDWATER MONITORING FOR ACID MINE DRAINAGE WILL BE INCREASED TO A QUARTERLY BASIS.
4. ALL SURFACE WATER WITHIN ½-MILE DOWNGRADIENT OF THE DETECTED ACID MINE DRAINAGE SHALL BE SAMPLED WITHIN 2-WEEKS OF THE INITIAL DETECTION AND BE INCLUDED IN THE SURFACE WATER MONITORING PROGRAM.
5. SAMPLING OF ALL DOMESTIC WATER SUPPLY WELLS WITHIN ½-MILE OF THE AFFECTED AREA FOR ACID MINE DRAINAGE PARAMETERS WILL OCCUR WITHIN 2-WEEKS OF THE INITIAL DETECTION AND CONTINUE TO BE SAMPLED ON A QUARTERLY BASIS.
   A. IF ACID MINE DRAINAGE IS DETECTED IN A DOMESTIC WATER SUPPLY WELL THE HOMEOWNER SHALL BE OFFERED TO HAVE A "POINT-OF-USE" WATER TREATMENT SYSTEM INSTALLED AND MAINTAINED WHILE A NEW, UNIMPACTED, DOMESTIC WATER SUPPLY IS MADE AVAILABLE AT NO COST TO THE HOMEOWNER.
6. A GROUNDWATER QUALITY ASSESSMENT IN THE AREAS ADJACENT TO THE DETECTED ACID MINE DRAINAGE WILL BE INITIATED.
   A. THE GROUNDWATER QUALITY ASSESSMENT SHALL INCLUDE THE INSTALLATION OF A MINIMUM OF THREE (3) MONITORING WELLS; ONE UPGRADIENT OF THE AFFECTED SURFACE WATER, AND TWO DOWN-GRADIENT OF THE AFFECTED SURFACE WATER. ADDITIONAL MONITORING WELLS MAY BE REQUIRED TO DETERMINE THE HORIZONTAL AND VERTICAL DISTRIBUTION OF THE GROUNDWATER IMPACTS.
   B. GROUNDWATER SAMPLES WILL BE COLLECTED WITHIN 2 WEEKS OF INSTALLATION AND ANALYZED FOR ACID MINE DRAINAGE PARAMETERS LISTED ABOVE. A SECOND, CONFIRMATORY ROUND OF SAMPLING WILL OCCUR 2-WEEKS AFTER THE INITIAL SAMPLING ROUND. MONITORING WELLS WILL BE SAMPLED ON A QUARTERLY BASIS IF ACID MINE DRAINAGE IMPACTS ARE DETECTED.

OFF-SITE WATER QUALITY MONITORING NOTES

1. LAND OWNERS WITHIN ½ MILE OF THE EXCAVATION SITE WILL BE OFFERED GROUNDWATER QUALITY MONITORING.
2. NOTIFICATIONS WILL BE MADE TO LANDOWNERS WITH THE OPTION TO ALLOW OR DECLINE MONITORING.

BASELINE MONITORING

3. TWO ROUNDS OF SAMPLING WILL OCCUR A MINIMUM OF 14 CALENDAR DAYS APART.
4. SAMPLES WILL BE ANALYZED FOR VOLATILE ORGANIC COMPOUNDS AND NITRATE.
5. RESULTS WILL BE SENT TO THE LAND OWNER, THE CITY OF KEENE, & TOWN OF SULLIVAN.

ON-GOING MONITORING

6. BI-ANNUAL BASIS OF WELLS DURING THE TERM OF THE PERMIT.
7. BI-ANNUAL BASIS OF WELLS TWO (2) YEARS FOLLOWING THE CEASE OF OPERATIONS AT THE SITE AND RECLAMATION.
4. SAMPLES WILL BE ANALYZED FOR VOLATILE ORGANIC COMPOUNDS AND NITRATE.
5. RESULTS WILL BE SENT TO THE LAND OWNER, THE CITY OF KEENE, & TOWN OF SULLIVAN.

ADVERSE IMPACTS

6. DRINKING WATER RESULTS WILL BE COMPARED TO THE NHDES AMBIENT GROUNDWATER QUALITY STANDARDS (AGQS).
7. IF ADVERSE IMPACTS ARE NOTED, THE APPLICANT WILL IMMEDIATELY BE NOTIFIED TO CEASE BEDROCK EXCAVATION.
8. NHDES, THE CITY OF KEENE, AND TOWN OF SULLIVAN WILL BE NOTIFIED.
9. IF MONITORING INDICATES THE EXCAVATION ACTIVITIES CAUSED THE IDENTIFIED CONTAMINATION, A LICENSED NH WELL CONTRACTOR WILL BE IMMEDIATELY RETAINED FOR INSTALLATION OF A NEW WATER SUPPLY WELL IN AN AREA THAT HAS NOT BEEN IMPACTED BY CONTAMINATION.
10. COST OF WELL WILL BE THE SOLE RESPONSIBILITY OF THE APPLICANT.

BEST MANAGEMENT PRACTICES FOR BLASTING

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

(1) LOADING PRACTICES. THE FOLLOWING BLASTHOLE LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:
   (a) DRILLING LOGS SHALL BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE BLASTER. THE LOGS SHALL INDICATE DEPTHS AND LENGTHS OF VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED AS WELL AS GROUNDWATER CONDITIONS. IF A FRACTURE OR WATER BEARING ZONE IS ENCOUNTERED IN A BOREHOLE, NO BLASTING SHALL OCCUR AT THAT LOCATION.
   (b) EXPLOSIVE PRODUCTS SHALL BE MANAGED ON SITE SO THAT THEY ARE EITHER USED IN THE BOREHOLE, RETURNED TO THE DELIVERY VEHICLE, OR PLACED IN SECURE CONTAINERS FOR OFF SITE DISPOSAL.
   (c) SPILLAGE AROUND THE BOREHOLE SHALL EITHER BE PLACED IN THE BOREHOLE OR CLEANED UP AND RETURNED TO AN APPROPRIATE VEHICLE FOR HANDLING OR PLACEMENT IN SECURED CONTAINERS FOR OFF-SITE DISPOSAL.
   (d) LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND SHALL NOT BE LEFT IN THE BLASTHOLES OVERNIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED.
   (e) LOADING EQUIPMENT SHALL BE CLEANED IN AN AREA WHERE WASTEWATER CAN BE PROPERLY CONTAINED AND HANDLED IN A MANNER THAT PREVENTS RELEASE OF CONTAMINANTS TO THE ENVIRONMENT.
   (f) EXPLOSIVES SHALL BE LOADED TO MAINTAIN GOOD CONTINUITY IN THE COLUMN LOAD TO PROMOTE COMPLETE DETONATION. INDUSTRY ACCEPTED LOADING PRACTICES FOR PRIMING, STEMMING, DECKING AND COLUMN RISE NEED TO BE ATTENDED TO.
(2) EXPLOSIVE SELECTION. THE FOLLOWING BMPS SHALL BE FOLLOWED TO REDUCE THE POTENTIAL FOR GROUNDWATER CONTAMINATION WHEN EXPLOSIVES ARE USED:
   (a) EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXECUTION.
   (b) EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT HAVE THE APPROPRIATE WATER RESISTANCE FOR THE SITE CONDITIONS PRESENT TO MINIMIZE THE POTENTIAL FOR HAZARDOUS EFFECT OF THE PRODUCT UPON GROUNDWATER.
(3) PREVENTION OF MISFIRES. APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISFIRES.
(4) MUCK PILE MANAGEMENT. MUCK PILES (THE BLASTED PIECES OF ROCK) AND ROCK PILES SHALL BE MANAGED IN A MANNER TO REDUCE THE POTENTIAL FOR CONTAMINATION BY IMPLEMENTING THE FOLLOWING MEASURES:
   (a) REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.
   (b) MANAGE THE INTERACTION OF BLASTED ROCK PILES AND STORMWATER TO PREVENT CONTAMINATION OF WATER SUPPLY WELLS OR SURFACE WATER.
(5) SPILL PREVENTION MEASURES AND SPILL MITIGATION. SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED SUBSTANCES TO THE ENVIRONMENT. THE MEASURES SHALL INCLUDE AT A MINIMUM:
   (a) THE FUEL STORAGE REQUIREMENTS SHALL INCLUDE
      1. STORAGE OF REGULATED SUBSTANCES ON AN IMPERVIOUS SURFACE.
      2. SECURE STORAGE AREAS AGAINST UNAUTHORIZED ENTRY.
      3. LABEL REGULATED CONTAINERS CLEARLY AND VISIBLY.
      4. INSPECT STORAGE AREAS WEEKLY.
      5. COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS.
      6. WHEREVER POSSIBLE, KEEP REGULATED CONTAINERS THAT ARE STORED OUTSIDE MORE THAN 50 FEET FROM SURFACE WATER AND STORM DRAINS, 75 FEET FROM PRIVATE WELLS, AND 400 FEET FROM PUBLIC WELLS.
      7. SECONDARY CONTAINMENT IS REQUIRED FOR CONTAINERS CONTAINING REGULATED SUBSTANCES STORED OUTSIDE, EXCEPT FOR ON PREMISE USE HEATING FUEL TANKS, OR ABOVEGROUND OR UNDERGROUND STORAGE TANKS OTHERWISE REGULATED
   (a) THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
      1. EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED.
      2. PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS.
      3. HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS.
      4. USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES.
      5. PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
   (a) THE TRAINING OF ON-SITE EMPLOYEES AND THE ON SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.
   (b) FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION RELATED EQUIPMENT WILL COMPLY WITH THE REGULATIONS OF NHDES [NOTE THESE REQUIREMENTS ARE SUMMARIZED IN WD-DWGB-22-6: "BEST MANAGEMENT PRACTICES FOR FUELING AND MAINTENANCE OF EXCAVATION AND EARTHMOVING EQUIPMENT" OR ITS SUCCESSOR DOCUMENT.]

SUBSURFACE DATA						
LOG	EXISTING GROUND	PROPOSED GRADE	LEDGE	DEPTH TO GROUNDWATER	WELL BOTTOM	GROUNDWATER ELEV.
SLR-4	888.0	880.0	873.0	NONE FOUND	873.0	NONE FOUND
SLR-10	884.0	855.0	NONE TO 829.0	42.9	828.0	841.1
SLR-11	871.5.0	855.0	NONE TO 795.5	NONE TO 45.2	817.8	826.3
SLR-12	885.0*	885.0	877.5	1.5	850.5	883.5**

SUBSURFACE DATA FROM TEST PIT, BORING, AND WELL INSTALLATION LOGS CONTAINED IN THE LIMITED GEOHYDROLOGIC INVESTIGATION BY SLR INTERNATIONAL CORPORATION, DATED MARCH 25, 2022.

* ELEVATION BASED ON CURRENT SURVEY

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5	7/24/25	ADDITIONAL WELL LOCATIONS	JD
6	8/11/25	REVISED PER CITY COMMENTS	JD

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STAMP:
STATE OF NEW HAMPSHIRE
BRENTON J. COLE
No. 14744
8/11/25
LICENSED PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
MONITORING PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=125'
SHEET: 17 OF 23		

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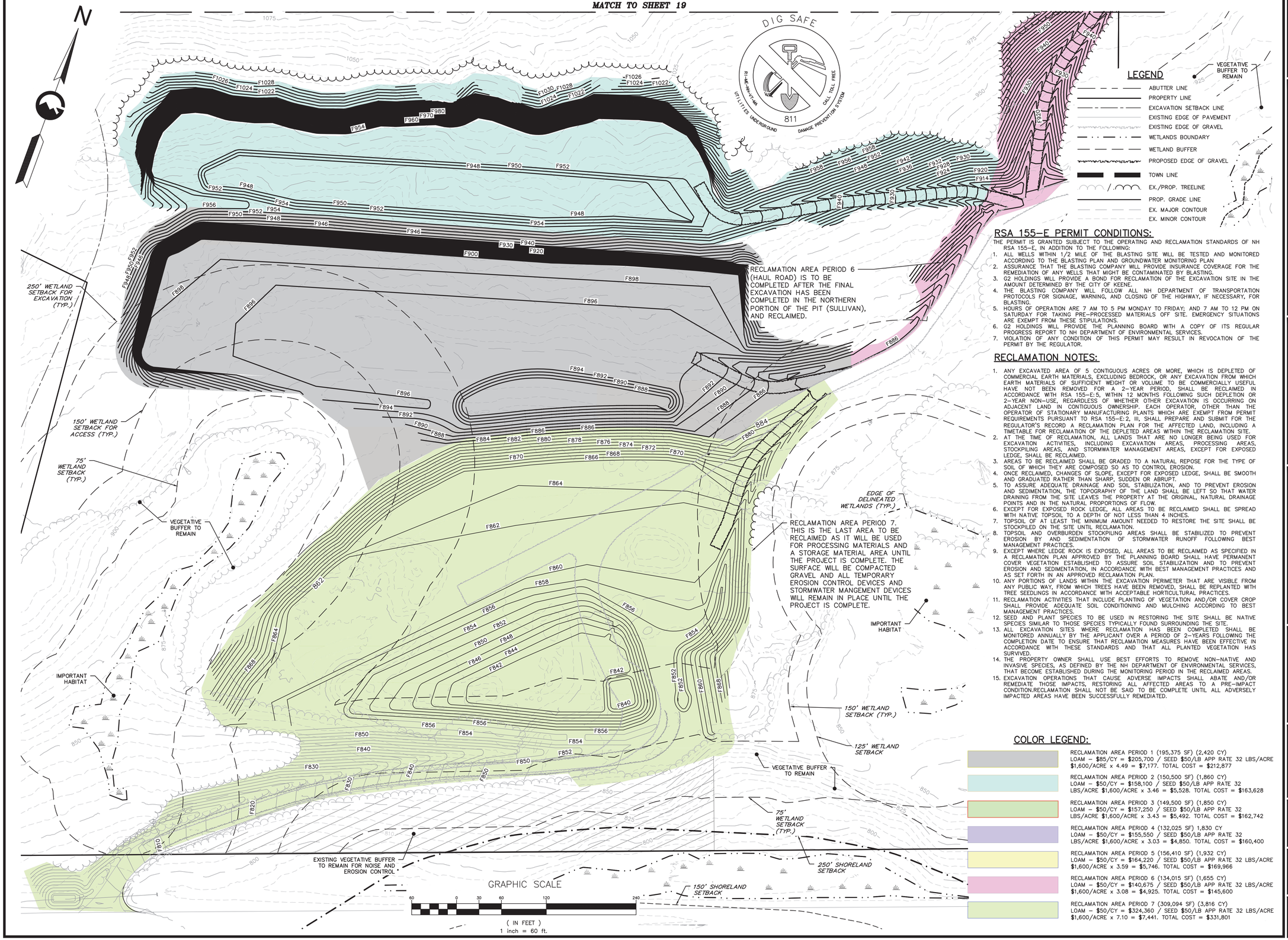
MATCH TO SHEET 19



RSA 155-E PERMIT CONDITIONS:

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1. ALL WELLS WITHIN 1/2 MILE OF THE BLASTING SITE WILL BE TESTED AND MONITORED ACCORDING TO THE BLASTING PLAN AND GROUNDWATER MONITORING PLAN.
2. ASSURANCE THAT THE BLASTING COMPANY WILL PROVIDE INSURANCE COVERAGE FOR THE REMEDIATION OF ANY WELLS THAT MIGHT BE CONTAMINATED BY BLASTING.
3. G2 HOLDINGS WILL PROVIDE A BOND FOR RECLAMATION OF THE EXCAVATION SITE IN THE AMOUNT DETERMINED BY THE CITY OF KEENE.
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5. HOURS OF OPERATION ARE 7 AM TO 5 PM MONDAY TO FRIDAY; AND 7 AM TO 12 PM ON SATURDAY FOR TAKING PRE-PROCESSED MATERIALS OFF SITE. EMERGENCY SITUATIONS ARE EXEMPT FROM THESE STIPULATIONS.
6. G2 HOLDINGS WILL PROVIDE THE PLANNING BOARD WITH A COPY OF ITS REGULAR PROGRESS REPORT TO NH DEPARTMENT OF ENVIRONMENTAL SERVICES.
7. VIOLATION OF ANY CONDITION OF THIS PERMIT MAY RESULT IN REVOCATION OF THE PERMIT BY THE REGULATOR.

RECLAMATION NOTES:

1. ANY EXCAVATED AREA OF 5 CONTIGUOUS ACRES OR MORE, WHICH IS DEPLETED OF COMMERCIAL EARTH MATERIALS, EXCLUDING BEDROCK, OR ANY EXCAVATION FROM WHICH EARTH MATERIALS OF SUFFICIENT WEIGHT OR VOLUME TO BE COMMERCIALLY USEFUL HAVE NOT BEEN REMOVED FOR A 2-YEAR PERIOD, SHALL BE RECLAIMED IN ACCORDANCE WITH RSA 155-E:5. WITHIN 12 MONTHS FOLLOWING SUCH DEPLETION OR 2-YEAR NON-USE, REGARDLESS OF WHETHER OTHER EXCAVATION IS OCCURRING ON ADJACENT LAND IN CONTIGUOUS OWNERSHIP. EACH OPERATOR, OTHER THAN THE OPERATOR OF STATIONARY MANUFACTURING PLANTS WHICH ARE EXEMPT FROM PERMIT REQUIREMENTS PURSUANT TO RSA 155-E:2, III, SHALL PREPARE AND SUBMIT FOR THE REGULATOR'S RECORD A RECLAMATION PLAN FOR THE AFFECTED LAND, INCLUDING A TIMETABLE FOR RECLAMATION OF THE DEPLETED AREAS WITHIN THE RECLAMATION SITE.
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COLOR LEGEND:

RECLAMATION AREA PERIOD 1 (195,375 SF) (2,420 CY)
LOAM - $85/CY = $205,700 / SEED $50/LB APP RATE 32 LBS/ACRE
$1,600/ACRE x 4.49 = $7,177. TOTAL COST = $212,877

RECLAMATION AREA PERIOD 2 (150,500 SF) (1,860 CY)
LOAM - $50/CY = $158,100 / SEED $50/LB APP RATE 32
LBS/ACRE $1,600/ACRE x 3.46 = $5,528. TOTAL COST = $163,628

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GORDON SERVICES
KEENE

TITLE:
RECLAMATION PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=60'
SHEET: 18 OF 23		

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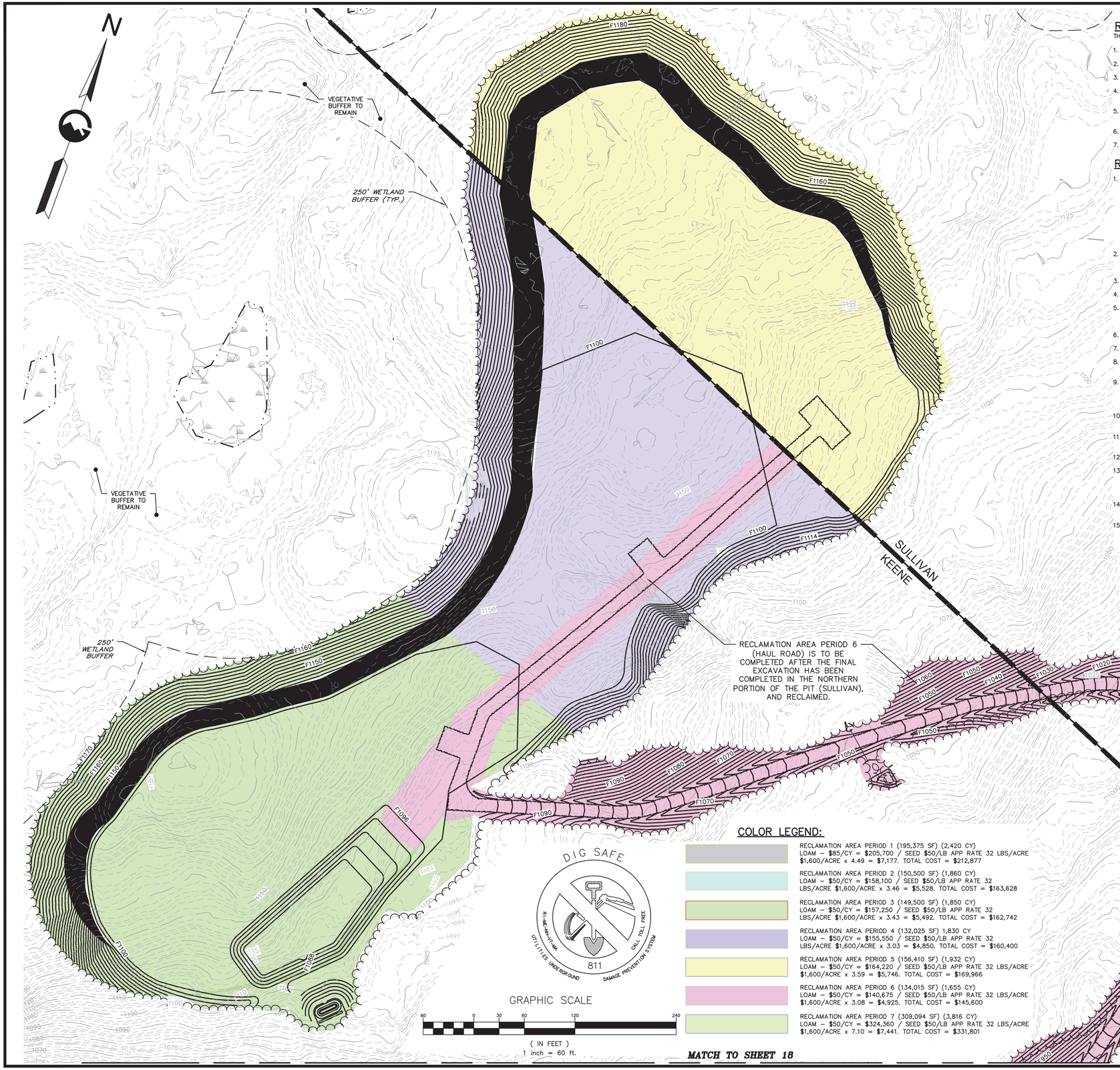

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LEGEND

- ABUTTER LINE
- PROPERTY LINE
- EXCAVATION SETBACK LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- WETLANDS BOUNDARY
- WETLAND BUFFER
- PROPOSED EDGE OF GRAVEL
- TOWN LINE
- EX./PROP. TREELINE
- PROP. GRADE LINE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR

COLOR LEGEND:

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TITLE:
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23-0201-1	MAY 9, 2025	HORIZ. 1"=60'
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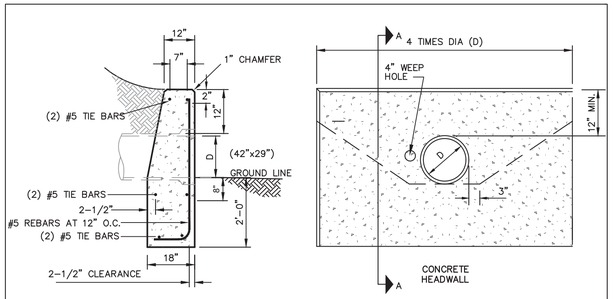


SECTION A–A
CONCRETE HEADWALL

FRONT ELEVATION

CLASS B CONCRETE – SCHEDULE FOR REINFORCED CONCRETE

PIPE DIAMETER	12"	15"	18"	24"	30"	36"	42"	48"	54"	60"
NUMBER	4	4	4	4	4	4	4	4	4	4
LENGTH OF BARS	3'–0"	3'–0"	3'–0"	3'–0"	4'–0"	4'–0"	5'–0"	5'–0"	6'–0"	6'–0"

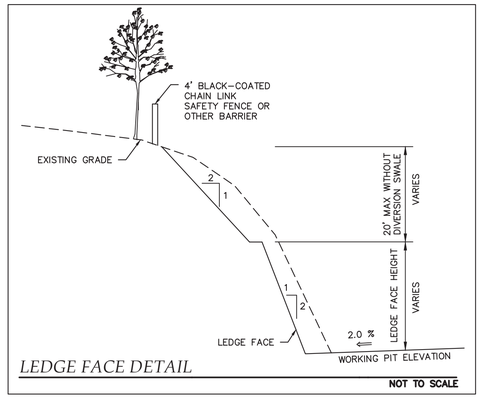
CLASS B CONCRETE – SCHEDULE FOR REINFORCED CONCRETE

PIPE DIAMETER	12"	15"	18"	24"	30"	36"	42"	48"	54"	60"
CONCRETE QUANTITY (YDS)	1.0	1.3	1.8	2.7	3.5	4.9	6.4	8.0	10.0	12.3

NOTES:
1. FOR DESCRIPTIONS, MATERIALS AND CONSTRUCTION METHODS, SEE LATEST NHDOT SPECIFICATIONS.
2. ALL CONCRETE DIMENSIONS SHOWN ARE MINIMUM.

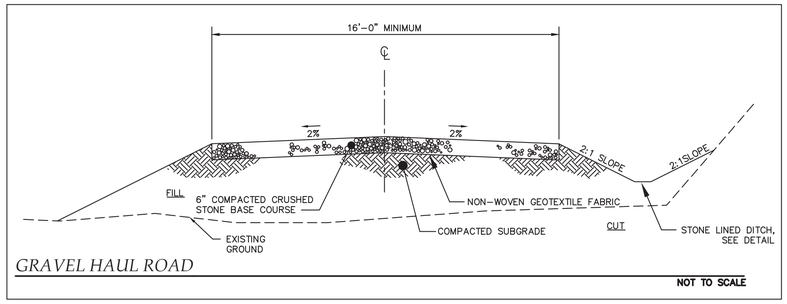
TYPICAL CONCRETE HEADWALL DETAIL

NOT TO SCALE



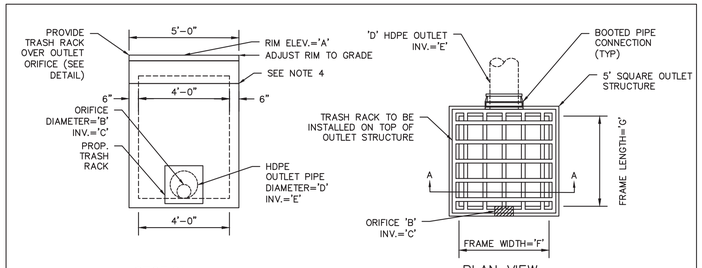
LEDGE FACE DETAIL

NOT TO SCALE



GRAVEL HAUL ROAD

NOT TO SCALE



SECTION A–A

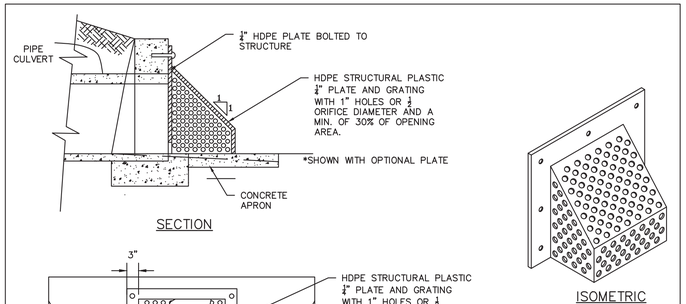
PLAN VIEW

OUTLET CONTROL STRUCTURE ELEVATIONS							
POND ID	A	B	C	D	E	F	G
SF5	1095.10	6"	1088.00	12"	1088.00	48"	48"
SF6	951.35	6"	948.00	12"	948.00	48"	48"
SF7	890.77	6"	888.00	12"	888.00	48"	48"

NOTES:
1. CONCRETE: fc=4,000 PSI @ 28 DAYS MINIMUM, TYPE III CEMENT.
2. REINFORCING STEEL: ASTM–A615 GRADE #60, ASTM A–185 WWF.
3. DESIGN LOADING: AASHTO–HS20–44, ASTM C–478 PRECAST REINFORCED CONCRETE MANHOLE SECTIONS
4. BUTYL RUBBER JOINT SEALANT CONFORMS TO LATEST ASTM C–990 SPECS
5. ONE POUR MONOLITHIC BASE SECTION.

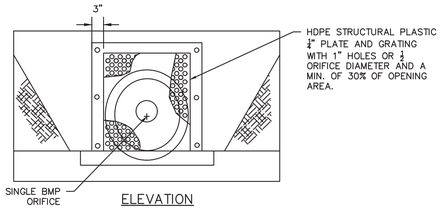
OUTLET STRUCTURE DETAIL

NOT TO SCALE



SECTION

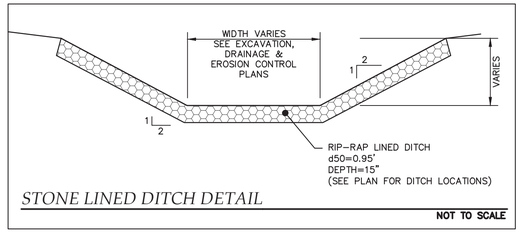
ISOMETRIC



ELEVATION

TRASH RACK DETAIL

NOT TO SCALE



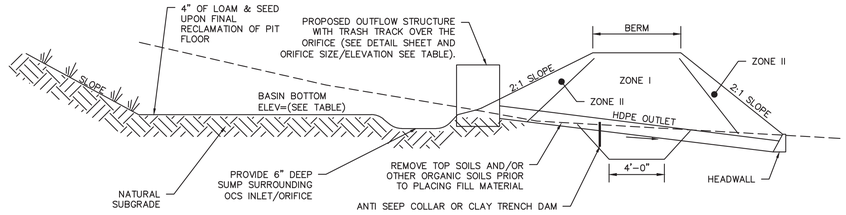
NOTES:
1. LEDGE TO BE A MINIMUM 12" BELOW BOTTOM OF PIPE.

STORM DRAIN TRENCH DETAIL

NOT TO SCALE

STONE LINED DITCH DETAIL

NOT TO SCALE



NOTES:
1. CONTRACTOR TO NOTIFY DIG–SAFE 72 HOURS PRIOR TO START OF CONSTRUCTION
2. CLEAR AND CUT THE AREA TO THE NECESSARY EXTENT. CONTRACTOR TO PROPERLY DISPOSE OF ALL DEBRIS.
3. ALL SILTATION AND TEMPORARY EROSION CONTROLS MEASURES SHALL BE INSTALLED AS CALLED FOR ON PROJECT PLANS PRIOR TO GRUBBING OF CLEARED AREAS.
4. CONTRACTOR TO COMPLETE GRUBBING AND PROPERLY DISPOSE OF ALL DEBRIS. STOCKPILE ORGANIC MATERIAL SUITABLE FOR USE AS TOPSOIL IN UPLAND AREAS. ALL STOCKPILES TO BE SEEDED AND, IF NECESSARY, SURROUNDED WITH HAY BALES TO PREVENT LOSSES DUE TO EROSION.
5. CONSTRUCT TEMPORARY CULVERTS AS NECESSARY FOR CONSTRUCTION ACTIVITIES. ALL CROSSINGS TO BE PROTECTED BY HAY BALE BARRIERS TO PREVENT EROSION.
6. CONSTRUCT CUT–OFF TRENCH (PART OF ZONE I).
7. CONSTRUCT OUTLET AND OVERFLOW STRUCTURE, CULVERT, ANTI SEEP COLLARS, HEADWALL, AND RIP RAP OUTLET PROTECTION AS SHOWN ON PLANS AND DETAILS.
8. CONSTRUCT ZONE I PORTION OF EARTH EMBANKMENT.
9. CONSTRUCT ZONE II PORTION OF EARTH EMBANKMENT.
10. APPLY TOPSOIL TO SLOPES AND OTHER AREAS OF DISTURBANCE BY CONSTRUCTION. TOPSOIL MAY BE NATIVE ORGANIC MATERIAL SCREENED SO AS TO BE FREE OF ALL DELETERIOUS MATERIAL. TOPSOIL SHALL BE A MINIMUM OF 4–INCHES OF COMPACTED THICKNESS. UPON PLACEMENT ON TOPSOIL, FINISHED AREAS ARE TO BE LIMED, SEEDED AND MULCHED. CONSTRUCTION PERSONNEL SHALL INSPECT COMPLETED SECTIONS OF WORK ON A REGULAR BASIS AND REMEDY ALL PROBLEM AREAS UNTIL GRASS HAS BECOME ESTABLISHED.
11. MAINTAIN, REPAIR AND REPLACE TEMPORARY EROSION CONTROL MEASURES AS NECESSARY UNTIL THE WHOLE CONSTRUCTION ARE HAS BEEN STABILIZED (MINIMUM ONE WINTER).
12. REMOVE AND SUITABLY DISPOSE OF TEMPORARY EROSION CONTROL MEASURES AFTER STABILIZATION.
13. MONITOR CONSTRUCTION ACTIVITIES TO INSURE THEY ARE PERFORMED IN SUCH WAYS AS TO NOT ENDANGER THE INTEGRITY OF EARTH EMBANKMENTS, STORMWATER CONTROL, STRUCTURE, CULVERT AND RIP RAP OUTLET PROTECTION.

OUTLET CONTROL STRUCTURE ELEVATIONS										
POND ID	BASIN NAME	BASIN BOTTOM	SUMP ELEVATION AROUND OCS	TOP BERM ELEVATION	OCS STRUCTURE ID	TOP OF OCS ELEVATION	ORIFICE SIZE	ORIFICE ELEVATION	OUTLET PIPE SIZE	OUTLET PIPE ELEVATION
SF5	SETTLING BASIN #5	1088.00	1087.50	1096.00	OCS #6A	1095.10	6"	1088.00	12"	1088.00
SF6	SETTLING BASIN #6	948.00	947.50	952.00	OCS #7A	951.35	6"	948.00	12"	948.00
SF7	SETTLING BASIN #7	888.00	887.50	894.00	OCS #8A & OCS #9A	890.77	6"	888.00	12"	876.00 PERIOD 1 872.00 PERIOD 8

MATERIAL TYPE/SPECIFICATIONS

ZONE I:
WELL GRADED MIXTURE OF GRAVEL, SAND, SILT OR CLAY WITH MAX. 6–INCH SIZE STONES AND GRADATION AS INDICATED BELOW. PLACE IN MAX. 12–INCH THICK LIFTS TO 95% OF MAX. DRY DENSITY IN ACCORDANCE WITH ASTM D1557. SCARIFY SURFACE PRIOR TO PLACING SUBSEQUENT LIFT. IN ADDITION REMOVE ORGANIC SOILS.

SIEVE SIZE	% BY WEIGHT PASSING
6–INCH	100
NO. 4	50–100
NO. 40	30–70
NO. 200	20–40

ZONE II:
DRAINAGE LAYER: PLACE IN MAX. 12–INCH THICK LIFTS TO 95% OF MAX DRY DENSITY IN ACCORDANCE WITH ASTM D1557

SIEVE SIZE	% BY WEIGHT PASSING
1–INCH	100
NO. 4	70–100
NO. 200	0–12 (IN SAND PORTION ONLY)

SEDIMENT RETENTION POND DETAIL

NOT TO SCALE

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2	2/3/25	REVISED PER CITY COMMENTS	JD
3	5/5/25	REVISED PER CITY COMMENTS	JD
4	7/9/25	REVISED PER CITY COMMENTS	JD
5	7/24/25	ADDITIONAL WELL LOCATIONS	JD
6	8/11/25	REVISED PER CITY COMMENTS	JD

OWNER/APPLICANT:
62 HOLDINGS, LLC
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603.518.8030
www.GraniteEng.com

STAMP:
STATE OF NEW HAMPSHIRE
BRENTON J. COLE
No. 14744
8/11/25
LICENSED PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES
KEENE

TITLE:
DETAILS

PROJECT No.	DATE:	SCALE:
23–0201–1	MAY 9, 2025	AS SHOWN
SHEET: 20 OF 23		

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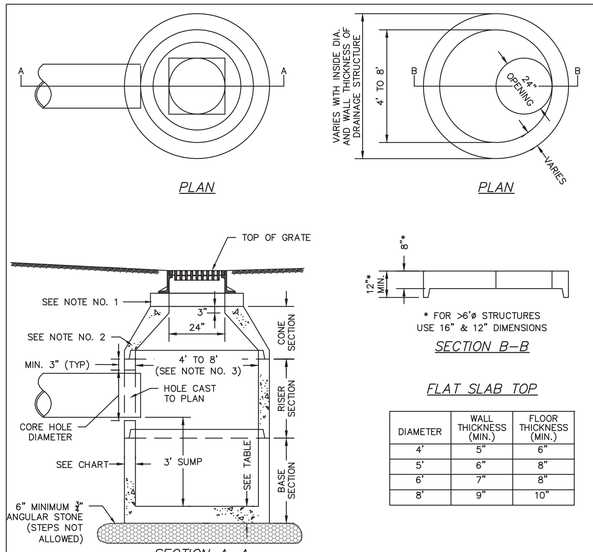


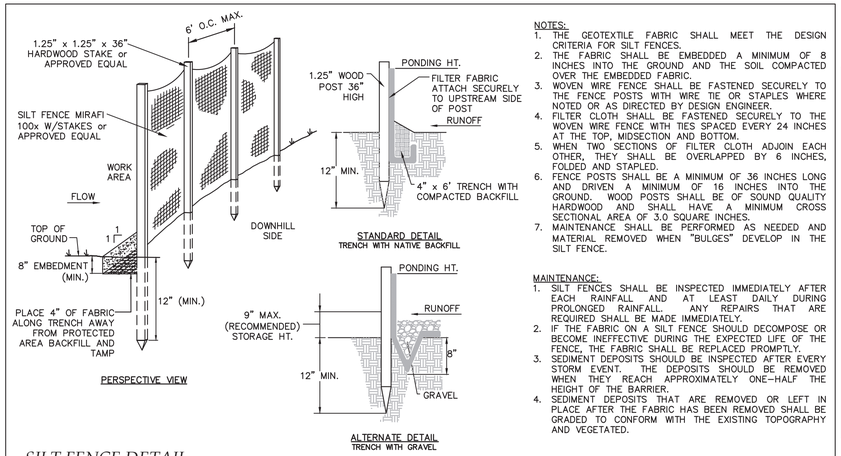
FLAT SLAB TOP

DIAMETER	WALL THICKNESS (MIN.)	FLOOR THICKNESS (MIN.)
4'	5"	6"
5'	6"	8"
6'	7"	8"
8'	9"	10"

NOTES:
1. FITTING FRAME TO GRADE MAY BE DONE WITH PREFABRICATED ADJUSTMENT RINGS OR CLAY BRICKS (2 COURSES MAX.).
2. CONE SECTIONS MAY BE EITHER CONCENTRIC OR ECCENTRIC, OR FLAT SLAB TOPS MAY BE USED WHERE PIPE WOULD OTHERWISE ENTER INTO THE CONE SECTION OF THE STRUCTURE AND WHERE PERMITTED.
3. FOR STRUCTURES WITH DIAMETERS GREATER THAN 4', THE DIAMETER MAY BE CONSTANT FROM TOP TO BOTTOM WITH A FLAT SLAB TOP, OR A RISER SECTION THAT TRANSITIONS FROM A STANDARD 4' CONE SECTION TO THE LARGER DIAMETER RISER OR BASE SECTION MAY BE USED.
4. PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
5. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
6. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN 11° ANGLE CENTERED IN THE WIDTH OF THE WALL AND SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT IN JOINTS.
7. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12"OF INSIDE SURFACE BETWEEN HOLES, NO MORE THAN 75% OF A HORIZONTAL CROSS–SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS.
8. ALL STRUCTURES SHALL MEET NHDOT SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH NHDOT SPECIFICATIONS.

PRECAST REINFORCED CONCRETE CATCH BASIN AND DRAIN MANHOLE

NOT TO SCALE

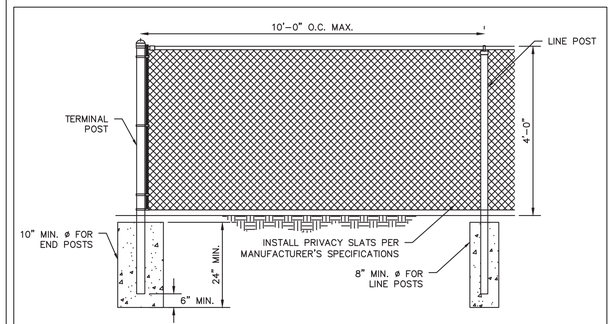


NOTES:
1. THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.
2. THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
3. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIE OR STAPLES WHERE NOTED OR AS DIRECTED BY DESIGN ENGINEER.
4. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MIDSECTION AND BOTTOM.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
6. FENCE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND DRIVEN A MINIMUM OF 16 INCHES INTO THE GROUND. WOOD POSTS SHALL BE OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES.
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

MAINTENANCE:
1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.
2. IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE–HALF THE HEIGHT OF THE BARRIER.
4. SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

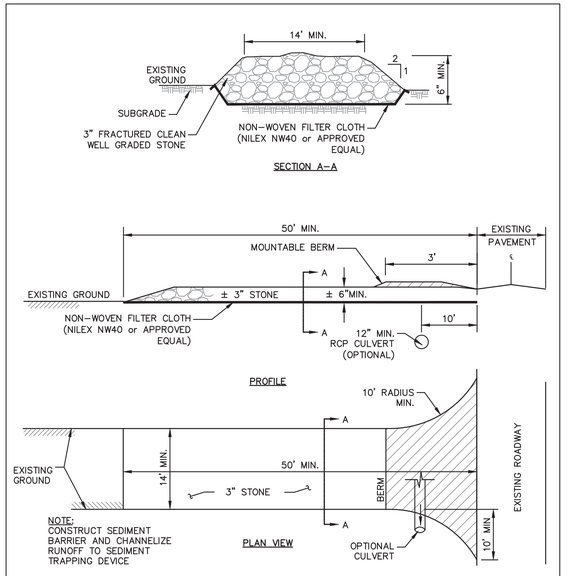
SILT FENCE DETAIL

NOT TO SCALE



CHAIN LINK FENCE DETAIL

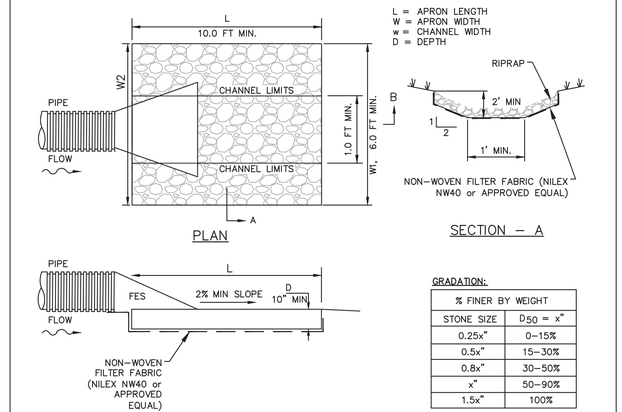
NOT TO SCALE



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

STABILIZED CONSTRUCTION EXIT DETAIL

NOT TO SCALE



GRADATION:

% FINER BY WEIGHT	
STONE SIZE	D_{50} = x"
0.25x"	0–15%
0.5x"	15–30%
0.8x"	30–50%
x"	50–90%
1.5x"	100%

NOTES:
1. THE APRON SUBGRADE TO BE PREPARED TO THE GRADES SHOWN ON THE APPROVED PLANS.
2. THE FRACTURED ROCK (RIP–RAP) SHALL CONFORM TO THE SPECIFIED GRADATION (D_{50}=4" MIN.).
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE RIP–RAP PLACEMENT. DAMAGED FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS SHALL BE A MINIMUM OF 12.0 INCHES.
4. RIP–RAP PLACEMENT SHALL BE IN ONE CONTINUOUS LIFT TO THE DEPTH SPECIFIED, AVOIDING MATERIAL SEGREGATION.

MAINTENANCE

THE APRON SHOULD BE INSPECTED AFTER EVERY MAJOR RAIN EVENT (> 3"). IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE VEGETATED CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE PERIODICALLY INSPECTED FOR DEGRADATION. IF DEGRADATION HAS OCCURRED, REPAIR IMMEDIATELY. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS AND SEDIMENT THAT COULD IMPAIR UPSTREAM CHANNEL CHARACTERISTICS. ALL DEBRIS OR SEDIMENT SHOULD BE REMOVED OFF SITE and DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LAWS.

STRUCTURE	LENGTH	W1	W2	D50	DEPTH
HW#1B	12'	16'	4'	4"	10"
HW#2B	15'	18'	4'	6"	15"
HW#3B & HW#4B	34'	46'	12'	6"	15"
HW#5B	9'	13'	4'	4"	10"
HW#6B	10'	13'	3'	4"	10"
HW#7B	9'	12'	3'	4"	10"
HW#8	37'	24'	9'	4"	10"
HW#11B (FINAL)	14'	9'	4'	4"	10"
HW#12 (FINAL)	37'	24'	9'	4"	10"

OUTLET PROTECTION DETAIL

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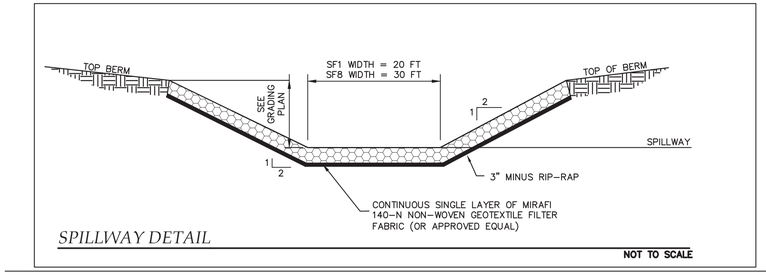

SPILLWAY DETAIL

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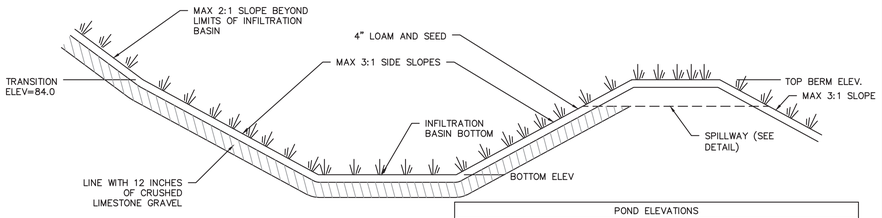

POND ELEVATIONS				
POND ID	BASIN NAME	BASIN BOTTOM	TOP BERM	SPILLWAY
SF1	TEMPORARY SEDIMENTATION AREA IN PERIOD 1	854.00	874.00	873.50
SF8	INFILTRATION POND IN PERIOD 8	842.00	856.00	855.50

NOTES:
1. DO NOT DISCHARGE SEDIMENT–LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO PERMANENT INFILTRATION BMPS.
2. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
3. AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
4. IMMEDIATELY AFTER CONSTRUCTING THE BASIN, STABILIZE ITS BOTTOM AND SIDE SLOPES WITH A DENSE TURF OF WATER–TOLERANT GRASS. USE LOW–MAINTENANCE, RAPIDLY GERMINATING GRASSES, SUCH AS FESCUES.
5. DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

ABOVE-GROUND INFILTRATION POND #SF1 AND SF8

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3	5/9/25	REVISED PER CITY COMMENTS	JD
4	7/9/25	REVISED PER CITY COMMENTS	JD
5	7/24/25	ADDITIONAL WELL LOCATIONS	JD
6	8/11/25	REVISED PER CITY COMMENTS	JD

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www.GraniteEng.com

STAMP:
STATE OF NEW HAMPSHIRE
BRENTON J. SOLE
No. 14744
8/11/25
LICENSED
PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES
KEENE

TITLE:
DETAILS

PROJECT No.	DATE:	SCALE:
23–0201–1	MAY 9, 2025	AS SHOWN
SHEET:	21 OF 23	

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IF MORE THAN 5000 CUBIC YARDS ARE BLASTED:
IDENTIFY DRINKING WATER WELLS LOCATED WITHIN 1/2 MILE OF THE PROPOSED BLASTING ACTIVITIES.
DEVELOP A GROUNDWATER QUALITY SAMPLING PROGRAM TO MONITOR FOR NITRATE EITHER IN THE DRINKING WATER SUPPLY WELLS OR IN OTHER WELLS THAT ARE REPRESENTATIVE OF THE DRINKING WATER SUPPLY WELLS IN THE AREA. THE PLAN MUST INCLUDE PRE AND POST BLAST WATER QUALITY MONITORING AND BE APPROVED BY NHDES PRIOR TO INITIATING BLASTING. THE GROUNDWATER SAMPLE PROGRAM MUST BE IMPLEMENTED ONCE APPROVED BY NHDES.

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

(1) LOADING PRACTICES. THE FOLLOWING BLASTHOLE LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:
- (a) DRILLING LOGS SHALL BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE BLASTER. THE LOGS SHALL INDICATE DEPTHS AND LENGTHS OF VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED AS WELL AS GROUNDWATER CONDITIONS.
- (b) EXPLOSIVE PRODUCTS SHALL BE MANAGED ON SITE SO THAT THEY ARE EITHER USED IN THE BOREHOLE, RETURNED TO THE DELIVERY VEHICLE, OR PLACED IN SECURE CONTAINERS FOR OFF SITE DISPOSAL.
- (c) SPILLAGE AROUND THE BOREHOLE SHALL EITHER BE PLACED IN THE BOREHOLE OR CLEANED UP AND RETURNED TO AN APPROPRIATE VEHICLE FOR HANDLING OR PLACEMENT IN SECURED CONTAINERS FOR OFF-SITE DISPOSAL.
- (d) LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND SHALL NOT BE LEFT IN THE BLASTHOLES OVERNIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED.
- (e) LOADING EQUIPMENT SHALL BE CLEANED IN AN AREA WHERE WASTEWATER CAN BE PROPERLY CONTAINED AND HANDLED IN A MANNER THAT PREVENTS RELEASE OF CONTAMINANTS TO THE ENVIRONMENT.
- (f) EXPLOSIVES SHALL BE LOADED TO MAINTAIN GOOD CONTINUITY IN THE COLUMN LOAD TO PROMOTE COMPLETE DETONATION. INDUSTRY ACCEPTED LOADING PRACTICES FOR PRIMING, STEMMING, DECKING AND COLUMN RISE NEED TO BE ATTENDED TO.

(2) EXPLOSIVE SELECTION. THE FOLLOWING BMPS SHALL BE FOLLOWED TO REDUCE THE POTENTIAL FOR GROUNDWATER CONTAMINATION WHEN EXPLOSIVES ARE USED:
- (a) EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXECUTION.
- (b) EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT HAVE THE APPROPRIATE WATER RESISTANCE FOR THE SITE CONDITIONS PRESENT TO MINIMIZE THE POTENTIAL FOR HAZARDOUS EFFECT OF THE PRODUCT UPON GROUNDWATER.

(3) PREVENTION OF MISFIRES. APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISFIRES.

(4) MUCK PILE MANAGEMENT. MUCK PILES (THE BLASTED PIECES OF ROCK) AND ROCK PILES SHALL BE MANAGED IN A MANNER TO REDUCE THE POTENTIAL FOR CONTAMINATION BY IMPLEMENTING THE FOLLOWING MEASURES:
- (a) REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.
- (b) MANAGE THE INTERACTION OF BLASTED ROCK PILES AND STORMWATER TO PREVENT CONTAMINATION OF WATER SUPPLY WELLS OR SURFACE WATER.

(5) SPILL PREVENTION MEASURES AND SPILL MITIGATION. SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED SUBSTANCES TO THE ENVIRONMENT. THE MEASURES SHALL INCLUDE AT A MINIMUM:
- (a) THE FUEL STORAGE REQUIREMENTS SHALL INCLUDE
  1. STORAGE OF REGULATED SUBSTANCES ON AN IMPERVIOUS SURFACE.
  2. SECURE STORAGE AREAS AGAINST UNAUTHORIZED ENTRY.
  3. LABEL REGULATED CONTAINERS CLEARLY AND VISIBLY.
  4. INSPECT STORAGE AREAS WEEKLY.
  5. COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS.
  6. WHEREVER POSSIBLE, KEEP REGULATED CONTAINERS THAT ARE STORED OUTSIDE MORE THAN 50 FEET FROM SURFACE WATER AND STORM DRAINS, 75 FEET FROM PRIVATE WELLS, AND 400 FEET FROM PUBLIC WELLS.
  7. SECONDARY CONTAINMENT IS REQUIRED FOR CONTAINERS CONTAINING REGULATED SUBSTANCES STORED OUTSIDE, EXCEPT FOR ON PREMISE USE HEATING FUEL TANKS, OR ABOVEGROUND OR UNDERGROUND STORAGE TANKS OTHERWISE REGULATED
- (a) THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
  1. EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED.
  2. PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS.
  3. HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS.
  4. USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES.
  5. PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
- (a) THE TRAINING OF ON SITE EMPLOYEES AND THE ON SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.
- (b) FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION RELATED EQUIPMENT WILL COMPLY WITH THE REGULATIONS OF NHDES [NOTE THESE REQUIREMENTS ARE SUMMARIZED IN WD-DWGB-22-6: 'BEST MANAGEMENT PRACTICES FOR FUELING AND MAINTENANCE OF EXCAVATION AND EARTHMOVING EQUIPMENT"OR ITS SUCCESSOR DOCUMENT.]

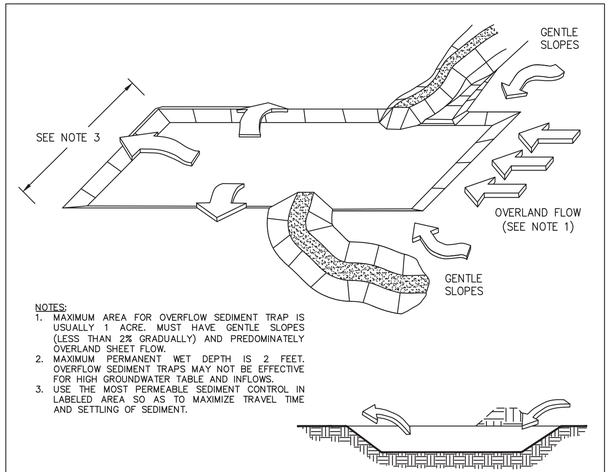
BEST MANAGEMENT PRACTICES FOR BLASTING

1. CONTACT DIG SAFE AT LEAST 72 HOURS BEFORE ANY EXCAVATION WORK.
2. CUT AND CLEAR TREES AND BRUSH WITHIN LIMITS OF CLEARING SHOWN ON PLAN.
3. INSTALL ALL APPLICABLE TEMPORARY EROSION CONTROL MEASURES PRIOR PRIOR TO COMMENCEMENT OF ANY EARTHMOVING OPERATIONS. THE STABILIZED CONSTRUCTION EXIT SHALL BE IN PLACE AS SHOWN ON THE PROJECT PLANS.
4. REMOVE STUMPS FROM THE SITE FOR SITE GRADING TO COMMENCE. ALL STUMPS AND SIMILAR ORGANIC DEBRIS SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR UNLESS A STUMP DUMP IS NOTED ON THE PLAN. NATIVE ORGANIC SOIL MATERIALS SUITABLE FOR USE AS TOPSOIL SHALL BE STOCKPILED WITHIN AREAS OUT OF THE WAY OF OTHER CONSTRUCTION ACTIVITIES AND DRAINAGE FLOW. STOCKPILES SHALL BE TEMPORARILY SEEDED WITH WINTER RYE AND BE SURROUNDED BY PERIMETER CONTROLS TO PREVENT EROSION.
5. THIS PROJECT IS TO BE MANAGED IN A MANOR THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
6. ALL PERMANENT EROSION CONTROL MEASURES AND DETENTION FACILITIES SHOULD BE INSTALLED PRIOR TO GRADING FOR PROJECT.
7. COMMENCE EARTHWORK OPERATIONS.
8. ALL DRAINAGE SYSTEMS AND OTHER UTILITIES SHOULD BE CONSTRUCTED FROM LOW GRADE TO HIGH GRADE. INCOMPLETE WORK SHALL BE PROTECTED FROM SILTATION BY THE USE OF PERIMETER CONTROLS UNTIL THE SITE HAS BECOME FULLY STABILIZED.
9. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
   A. BASE COURSE GRAVELS ARE INSTALLED IN AREAS TO BE PAVED;
   B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
9. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES ARE REQUIRED, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY DEVICES OR CONSULT WITH THE ENGINEER.
10. ALL STORMWATER FLOWS SHALL NOT BE DIRECTED TO THE STORMWATER MEASURES UNTIL ALL CONTRIBUTING AREAS HAVE BEEN DEEMED STABLE. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
11. COMPLETE GRADING ACTIVITIES AND WHEN COMPLETE, BEGIN TOPSOILING PROPOSED TURF AREAS USING STOCKPILED LOAM SUPPLEMENTED WITH BORROW LOAM, IF NECESSARY, TO LEAVE THE SPECIFIED THICKNESS.
12. FINE GRADE ALL TURF AREAS AND COMPLETE PERMANENT SEEDING AND LANDSCAPING BY HYDROSEEDING WITH THE SPECIFIED SEED MIXTURE IMMEDIATELY AFTER FINE GRADING IS COMPLETED. ALL AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
13. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE ESTABLISHED THEMSELVES.

CONSTRUCTION SEQUENCE

1. ALL MEASURES IN THE PLAN SHALL MEET AS A MINIMUM THE BEST MANAGEMENT PRACTICES SET FORTH IN VOLUME 3 OF THE NEW HAMPSHIRE STORMWATER MANUAL "EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" AS PUBLISHED AND AMENDED BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES.
2. THIS PROJECT IS TO BE MANAGED IN A MANOR THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
3. WHENEVER PRACTICAL, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED OR SUPPLEMENTED. THE STRIPPING OF VEGETATION SHALL BE DONE IN A MANNER THAT MINIMIZES SOIL EROSION.
4. APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO LAND DISTURBANCE.
5. THE AREA OF DISTURBANCE SHALL BE KEPT TO A MINIMUM. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 30 DAYS SHALL BE STABILIZED.
6. MEASURES SHALL BE TAKEN TO CONTROL EROSION WITHIN THE PROJECT AREA. SEDIMENT IN RUNOFF WATER SHALL BE TRAPPED AND RETAINED WITHIN THE PROJECT AREA USING APPROVED MEASURES.
7. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN FUNCTIONING CONDITION UNTIL FINAL SITE STABILIZATION IS ACCOMPLISHED.
8. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. TRAPPED SEDIMENT AND OTHER DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 DAYS UNLESS CONDITIONS DICTATE OTHERWISE.
9. THE TOWN OF MILFORD SHALL RESERVE THE RIGHT TO REQUIRE FURTHER EROSION CONTROL PRACTICES DURING CONSTRUCTION SHOULD THEY FIND IT NECESSARY.
10. THE RESPONSIBLE PARTY SHALL INSTALL, INSPECT, REPORT, OPERATE, AND MAINTAIN ALL STORMWATER MANAGEMENT AND EROSION CONTROL MEASURES REQUIRED BY THESE PLANS.
11. TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH PROJECT PLANS. IN ADDITION, SIMILAR MEASURES SHALL BE INSTALLED WHERE AND WHEN THE FIELD CONDITION, OR FIELD OPERATION OF THE INDIVIDUAL SITE CONTRACTOR, MAY WARRANT.
12. ALL DISTURBED AREAS DESIGNATED TO BE TURF, SHALL RECEIVE A MINIMUM APPLICATION OF 4 INCHES OF LOAM (COMPACTED THICKNESS), PRIOR TO FINAL SEEDING AND MULCHING.
13. IN THE EVENT THAT, DURING CONSTRUCTION OF ANY PORTION OF THIS PROJECT, A WINTER SHUTDOWN IS NECESSARY, THE CONTRACTOR SHALL STABILIZE ALL INCOMPLETE WORK AND PROVIDE FOR SUITABLE METHODS OF DIVERTING RUNOFF IN ORDER TO ELIMINATE SHEET FLOW ACROSS FROZEN SURFACES.
14. DUST SHALL BE CONTROLLED BY THE USE OF WATER AS NECESSARY THROUGHOUT THE CONSTRUCTION PERIOD, IN ACCORDANCE WITH ENV-A 1000.
15. IN NO WAY ARE THOSE TEMPORARY EROSION CONTROL MEASURES INDICATED ON THESE PLANS TO BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR SHALL USE JUDGEMENT IN INSTALLING SUPPLEMENTARY EROSION CONTROL MEASURES WHERE AND WHEN SPECIFIC SITE CONDITIONS AND/OR CONSTRUCTION METHODS MAY WARRANT.
16. EARTHWORK SHALL BE LIMITED TO THE AREAS WITHIN THE LIMITS OF CLEARING AS SHOWN ON THE PLAN. AT NO TIME SHALL MORE THAN FIVE (5) ACRES OF SITE AREA BE IN AN UNSTABLE CONDITION. NO GIVEN AREA OF THE SITE SHALL BE LEFT IN AN UNSTABILIZED CONDITION FOR A PERIOD OF TIME EXCEEDING THIRTY (30) CALENDAR DAYS.
17. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
18. PERIMETER CONTROLS MUST BE INSTALLED PRIOR TO EARTHWORK.
19. EROSION CONTROL MEASURES USED SHALL BE INSPECTED AT LEAST WEEKLY AND WITHIN 24 HOURS AFTER 0.25" OF RAINFALL OR MORE. ALL DEFICIENCIES SHALL BE FIXED IN ORDER TO KEEP OPERATION EFFECTIVE. THEY SHALL BE CLEANED AND MAINTAINED AND OTHERWISE KEPT IN AN EFFECTIVE OPERATING MANNER THROUGHOUT THE CONSTRUCTION PERIOD.
20. ALL STORMWATER PRACTICES AND DRAINAGE SWALES ARE TO BE INSTALLED PRIOR TO ROUGH GRADING OF THE SITE. THEY SHOULD BE FULLY STABILIZED PRIOR TO RECEIVING STORMWATER. PERIODIC INSPECTION AND MAINTENANCE TO MAINTAIN DESIGN INTENT IS REQUIRED.
21. ALL DISTURBED AREAS DESIGNATED TO BE TURF, SHALL RECEIVE THE REQUIRED AMOUNT OF LOAM (COMPACTED THICKNESS), PRIOR TO FINAL SEEDING AND MULCHING.
22. IF DURING CONSTRUCTION A WINTER SHUTDOWN IS NECESSARY, THE CONTRACTOR SHALL STABILIZE ALL INCOMPLETE WORK AND PROVIDE FOR SUITABLE METHODS OF DIVERTING RUNOFF IN ORDER TO ELIMINATE SHEET FLOW ACROSS FROZEN SURFACES.
23. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
   A. BASE COURSE GRAVELS ARE INSTALLED IN AREAS TO BE PAVED;
   B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR
   D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
23. ALL DUST SHALL BE CONTROLLED BY THE USE OF WATER IN ACCORDANCE WITH ENV-A 1000.
24. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES ARE REQUIRED, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY DEVICES OR CONSULT WITH THE ENGINEER.
25. JUTE MATTING INSTALLED TO CONFORM WITH THE RECOMMENDED BEST MANAGEMENT PRACTICE OUTLINED IN VOLUME 3 OF THE NEW HAMPSHIRE STORMWATER MANUAL 'EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" ON ALL 3:1 SLOPES OR GREATER.
26. ALL ROADWAYS AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS.
27. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED WITHIN 72 HOURS.

EROSION CONTROL NOTES



NOTES:
1. MAXIMUM AREA FOR OVERFLOW SEDIMENT TRAP IS USUALLY 1 ACRE. MUST HAVE GENTLE SLOPES (LESS THAN 2% GRADUALLY) AND PREDOMINATELY OVERLAND SHEET FLOW.
2. MAXIMUM PERMANENT WET DEPTH IS 2 FEET. OVERFLOW SEDIMENT TRAPS MAY NOT BE EFFECTIVE FOR HIGH GROUNDWATER TABLE AND INFLOWS.
3. USE THE MOST PERMEABLE SEDIMENT CONTROL IN LABELED AREA SO AS TO MAXIMIZE TRAVEL TIME AND SETTLING OF SEDIMENT.

SEDIMENT TRAP DETAIL

NOT TO SCALE

1. ALL PROPOSED POST-DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT BE DONE OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL (NHDOT 304.3).

WINTER CONSTRUCTION NOTES

1. ALL AREAS TO BE SEEDED SHALL BE PREPARED TO PROVIDE A REASONABLY FIRM BUT FRIABLE SEED BED.
2. SLOPED AREAS SHALL NOT BE LEFT TOO SMOOTH; THE SURFACE SHALL BE LEFT IN A RUFFLED CONDITION SUCH AS MAY BE PRODUCED BY THE USE OF TRACKED VEHICLES RUN UP AND DOWN THE SLOPES. SMOOTH, COMPACTED SLOPES, SUCH AS FROM BLADING, WHICH MIGHT ALLOW THE FREE FLOW OF WATER DOWN THEM SHALL BE DISKED, HARROWED, DRAGGED WITH A CHAIN OR MAT, MACHINE-RAKED, OR HAND-WORKED TO GIVE THE EFFECT OF MINIATURE TERRACES, PARTICULARLY IN SILTY OR CLAYEY SOILS. THE SLOPES SHALL BE LEFT SMOOTH ENOUGH TO ENABLE MOWING.
3. LAWN AREAS, SUCH AS WHERE LOAM HAS BEEN SPREAD, SHALL BE PREPARED FOR SEEDING. THE LOAM SHALL BE SPREAD UPON THE PREVIOUSLY PREPARED SUBGRADE. SURFACE TO THE DEPTH OF 4" ± 1/2" UNLESS OTHERWISE SPECIFIED AND SHALL BE RAKED CAREFULLY TO REMOVE ALL OBJECTIONABLE MATERIALS. LOAM SHALL BE SPREAD IN SUCH A MANNER AS TO ESTABLISH A LOOSE, FRIABLE SEEDBED. IN ORDER TO MAINTAIN A CONSISTENT GRADE, LOAM PLACED ADJACENT TO LAWNS OR WHERE DIRECTED SHALL BE COMPACTED WITH A ROLLER WEIGHING APPROXIMATELY 100 POUNDS PER FOOT OF ROLLER WIDTH. ALL DEPRESSIONS EXPOSED DURING THE ROLLING PROCEDURE SHALL BE FILLED WITH ADDITIONAL LOAM, AND ROLLED.
4. LOAM SHALL CONSIST OF LOOSE FRIABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE OF VIABLE PARTS OF PROHIBITED INVASIVE PLANTS LISTED IN TABLE 3800.1 OF PART AGR 3800. LOAM SHALL BE GENERALLY FREE FROM STONES, LUMPS, STUMPS, OR SIMILAR OBJECTS LARGER THAN 2"IN GREATEST DIAMETER, SUBSOIL, ROOTS, AND WEEDS. THE MINIMUM AND MAXIMUM PH VALUE SHALL BE FROM 5.5 TO 7.6. LOAM SHALL CONTAIN A MINIMUM OF 3 PERCENT AND A MAXIMUM OF 10 PERCENT OF ORGANIC MATTER AS DETERMINED BY LOSS BY IGNITION. NOT MORE THAN 65 PERCENT SHALL PASS A NO. 200 SIEVE AS DETERMINED BY THE WASH TEST IN ACCORDANCE WITH ASTM D 1140. IN NO INSTANCE SHALL MORE THAN 20% OF THAT MATERIAL PASSING THE NO. 4 SIEVE CONSIST OF CLAY SIZE PARTICLES.
5. ALL AREAS TO BE SEEDED SHALL MEET THE SPECIFIED GRADES AND SHALL BE FREE OF GROWTH AND DEBRIS.
6. CARE SHALL BE TAKEN TO PREVENT THE FORMATION OF LOW PLACES AND POCKETS WHERE WATER WILL STAND.
7. WHERE RYEGRASS HAS BEEN PLANTED FOR TEMPORARY EROSION CONTROL AND HAS NOT BEEN ELIMINATED PRIOR TO THE COMPLETION OF THE WORK, SUCH AREAS SHALL BE DISC-HARROWED AT LEAST 3' DEEP AND SEEDED WITH PERMANENT GRASSES TO PREVENT THE RYEGRASS FROM RESEEDING AND BECOMING COMPETITIVE WITH AND RETARDING DEVELOPMENT OF THE PERMANENT COVER.
8. FERTILIZER SHALL BE UNIFORMLY APPLIED. THE RATE OF APPLICATION SHALL BE A RATE OF 2.0 POUNDS OF NITROGEN PER 1,000 SQUARE FEET. NOT LESS THAN THREE MONTHS SHALL ELAPSE BETWEEN THE INITIAL FERTILIZATION AND THE REFERTILIZATION. NO REFERTILIZATION WILL BE ALLOWED BETWEEN NOVEMBER 1, OR WHEN THE GROUND HAS FROZEN, AND THE FOLLOWING APRIL 1, OR BETWEEN JUNE 1 AND THE FOLLOWING SEPTEMBER 1. REFERTILIZATION WILL BE ALLOWED BETWEEN AUGUST 15 AND 31 ONLY WHEN IT IS DETERMINED THAT THE PERMANENT GRASSES HAVE DEVELOPED WELL AND FEW WEEDS HAVE APPEARED, AND SUCH REFERTILIZATION WILL NOT TEND TO PROMOTE THE GROWTH OF NOXIOUS WEEDS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING AND CARING FOR SEEDED AREAS UNTIL ACCEPTANCE OF THE WORK. CONTRACTOR SHALL REPAIR AT HIS OWN EXPENSE ANY DAMAGE TO SEEDED AREAS CAUSED BY PEDESTRIAN OR VEHICULAR TRAFFIC OR OTHER CAUSES.
10. THE SEEDED AREAS SHALL BE CAREFULLY AND SUITABLY WATERED AS NECESSARY TO PRODUCE A SATISFACTORY GROWTH.
11. AREAS SEEDED WITH PARK SEED SHALL BE MOWED WHENEVER NECESSARY TO KEEP THE GROWTH BETWEEN 3 AND 5' IN ORDER TO ALLOW LIGHT TO PENETRATE TO THE SHORTER, SLOWER GROWING SPECIES IN THE MIXTURE.
12. AREAS SEEDED WITH SLOPE SEED MAY BE ORDERED MOWED WHENEVER THE CONTRACT EXTENDS INTO A SECOND GROWING SEASON. WEEDS GROWING IN AREAS SEEDED WITH THE SLOPE SEED SHALL BE CUT BACK TO PREVENT THEM FROM DOMINATING THE DESIRED GRASS PLANTS
13. SELECT ONE OF THE GRASS/LEGUME MIXES BASED ON THE PERCENT WEIGHT PASSING A NO. 200 SIEVE AS OUTLINED ABOVE. MIX 2 IS RECOMMENDED IF SUPPRESSION OF WOODY GROWTH IS DESIRED AND THERE ARE MORE THAN 15 PERCENT FINES. THE STANDARD CONSERVATION MIXES AVAILABLE FROM LOCAL SEED SUPPLIERS ARE NOT RECOMMENDED ON DROUGHTY SITES. THESE MIXES USUALLY PROVIDE A GREEN COVER VERY QUICKLY, BUT THE PLANT SPECIES BEGIN TO DIE IN 2-4 YEARS ON STERILE AND DROUGHTY SITES.
14. FOR MIX 1, IN LIEU OF A SOIL TEST, LIME AT THE RATE OF 1 TON/ACRE (50 LBS/1,000 SQ FT). FERTILIZE WITH 500 LBS/ACRE (11 LBS/1,000 SQ FT) OF 10-20-20 OR EQUIVALENT. INCORPORATE LIME, FERTILIZER, AND SEED USING RAKES IF SEEDING IS DONE BY HAND. IT IS STRONGLY RECOMMENDED TO USE A BULLDOZER TO 'TRACK' THE SITE AFTER SEEDING. TRACKING WILL INCORPORATE THE LIME, FERTILIZER, AND SEED TO PROMOTE SEED GERMINATION. FOR MIXES 2 & 3, IN LIEU OF A SOIL TEST, LIME AT THE RATE OF 2 TONS/ACRE (90 LBS/1,000 SQ FT). FERTILIZE WITH 500 LBS/ACRE (11 LBS/1,000 SQ FT) OF 10-20-20 OR EQUIVALENT. THE SEED NEEDS TO BE INCORPORATED TO ENSURE SUCCESS AND TO SHORTEN ESTABLISHMENT TIME. THIS IS ESPECIALLY TRUE OF MIXES 1 AND 2, AND IS MOST CRITICAL FOR THE LARGE SEEDED LEGUMES IN MIX 2. ON THE FLATTER SLOPES, USE A BULLDOZER TO "TRACK IN" THE SEED.
15. WHEN MULCHING FOR MIX 1, WEED FREE MULCH, CLEAN STRAW IS RECOMMENDED. MULCH AT THE MAXIMUM RATE OF 500-700 LBS/ACRE. HIGHER MULCHING RATES AND MULCH WITH WEED SEED CONTENT WILL INHIBIT SEEDING SUCCESS SIGNIFICANTLY. IF THE EROSION HAZARD IS LOW AND THE SEED IS INCORPORATED, MULCHING IS NOT NECESSARY FOR SEEDING SUCCESS. DO NOT APPLY MULCH PRIOR TO TRACKING WITH A BULLDOZER. WHEN MULCHING FOR MIXES 2 & 3, MULCH WITH WEED FREE HAY OR STRAW AND MULCH AT THE RATE OF 2-3 TONS/ACRE FOR MIX 2 AND 12 TONS/ACRE FOR MIX 3. THE HIGHER MULCHING RATE IS RECOMMENDED WHERE SEED INCORPORATION IS DIFFICULT. THIS IS ESPECIALLY CRITICAL FOR MIX 2.
16. WHEN SEEDING LARGE AREAS AND/OR STEEP SLOPES APPLY LIME, SEED, AND FERTILIZER WITH A HYDROSEEDER AND, DEPENDING ON THE CONSISTENCY OF THE SOIL MATERIAL, STEEPNESS OF SLOPE, AND SEED MIXTURE USED: (A) PRESS THE SEED INTO THE SOIL BY TRACKING WITH A BULLDOZER, OR (B) COVER THE SEED BY WALKING BACK AND FORTH OVER STEEP LOOSE SANDY SLOPES, OR (C) APPLY MULCH AND A TACKIFIER TO HOLD THE MULCH IN PLACE. WHEN SEEDING FLAT TO GENTLY SLOPING AREAS (2:1 SLOPES MAXIMUM) APPLY LIME, SEED AND FERTILIZER USING FARM TYPE SPREADERS AND TRACK THE SITE WITH A BULLDOZER OR APPLY MULCH.
17. PRIMARY SEEDING DATES BEGIN AS SOON AS THE SNOW MELTS IN THE SPRING AND ENDS MAY 15. THE IMPORTANCE OF EARLY SEEDING CANNOT BE OVEREMPHASIZED. THIS IS ESPECIALLY TRUE FOR MIX 1. DEPENDING ON WEATHER CONDITIONS, SUBSTANTIAL FAILURE CAN BE EXPECTED IF SEEDING IS DONE LATER. LATE SUMMER AND EARLY FALL SEEDLINGS ARE NOT RECOMMENDED FOR MIZES 1 AND 2. IF LATE SEEDINGS OF MIXES 1 AND 2 ARE NECESSARY, THEY SHOULD BE DONE AFTER OCTOBER 20 TO PREVENT FALL GERMINATION AND SUBSEQUENT WINTERKILL. MIX 3 CAN ALSO BE SEEDED FROM AUGUST 15 TO SEPTEMBER 1 WITH CONVENTIONAL SEEDING.
18. THE PLANT SPECIES IN MIXES 1 AND 2 GERMINATE AND GROW SLOWLY. COMPLETE COVER MAY NOT OCCUR FOR 2-4 YEARS. HOWEVER, A WELL-ESTABLISHED STAND WILL ENDURE FOR YEARS. FOLLOW-UP SEEDING MAY BE NEEDED TO ESTABLISH VEGETATION ON THE MORE DIFFICULT PARTS OF SOME SITES. THE NEED TO DO FOLLOW-UP SEEDING CAN BE DETERMINED THE YEAR AFTER THE INITIAL PLANTING.

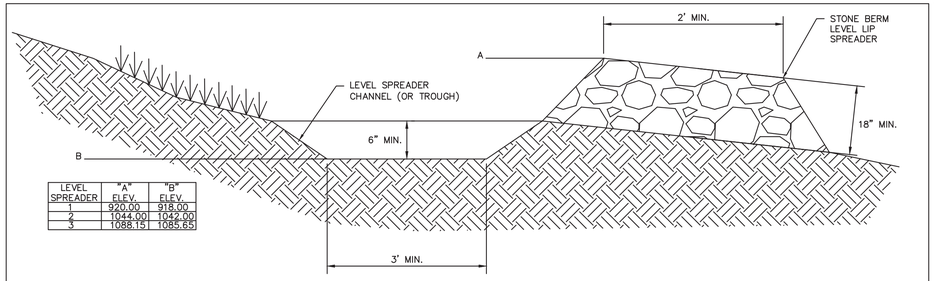
MIX 1 (WARM SEASON GRASSES)	
KIND OF SEED	POUNDS/ACRE
SWITCHGRASS TRAILBLAZER	6
BIG BLUESTEM NIAGARA	4
LITTLE BLUESTEM	2
SAND LOVEGRASS	4

MIX 2 (LEGUMES AND COOL SEASON GRASSES)	
KIND OF SEED	POUNDS/ACRE
FLATPEA	10
PERENNIAL PEA	2
CROWN VETCH	10
TALL FESCUE	10

MIX 3 (COOL SEASON GRASSES AND LEGUMES)	
KIND OF SEED	POUNDS/ACRE
TALL FESCUE	20
REDTOP	2
BIRDSFOOT TREFOIL	8

TURF ESTABLISHMENT SPECIFICATIONS

1. SECONDARY CONTAINMENT EQUIPMENT USED DURING MOBILE FUELING SHOULD BE SIZED TO CONTAIN THE MOST LIKELY VOLUME OF FUEL TO BE SPILLED DURING A FUEL TRANSFER.
2. PORTABLE CONTAINMENT EQUIPMENT SHOULD BE POSITIONED TO CATCH ANY FUEL SPILLS DUE TO OVERFILLING THE EQUIPMENT AND ANY OTHER SPILLS THAT MAY OCCUR AT OR NEAR THE FUEL FILLER PORT TO THAT EQUIPMENT. THE SELECTION OF CONTAINMENT EQUIPMENT AND ITS POSITIONING AND USE SHOULD TAKE INTO ACCOUNT ALL OF THE DRIP POINTS ASSOCIATED WITH THE FUEL FILLING PORT AND THE HOSE FROM THE FUEL DELIVERY TRUCK.
3. PERSONNEL MUST ATTEND TO THE FUELING PROCESS TO ENSURE THAT ANY SPILLS WILL BE OF LIMITED VOLUME.
4. SECONDARY CONTAINMENT FOR OUTDOOR STORAGE AREAS (FOR FUEL OR OTHER REGULATED SUBSTANCES) MUST BE COVERED WITH A ROOF, PLASTIC SHEETING, OR WATERPROOF TARPAULINS TO KEEP CONTAINERS DRY, EXCEPT WHEN MATERIALS ARE BEING ADDED OR REMOVED. THE AREA MUST BE KEPT FREE OF RAIN, SNOW, AND ICE TO ENSURE SUFFICIENT CONTAINMENT VOLUME REMAINS TO CONTAIN A RELEASE FROM THE LARGEST STORAGE TANK. FOR RELATIVELY SMALL STORAGE AREAS, SPILL CONTAINMENT PALLETS AND COVERS ARE COMMERCIALLY AVAILABLE.
5. IF ANY OF THE FOLLOWING OCCURS, THE SPILL MUST BE IMMEDIATELY REPORTED TO THE NHDES AT (603) 271-3899 OR STATE POLICE AT (603)



LEVEL SPREADER	"A" ELEV.	"B" ELEV.
1	920.00	918.00
2	1044.00	1042.00
3	1088.15	1085.65

CONSTRUCTION NOTES:
1. IT IS CRITICAL TO INSTALL LEVEL SPREADERS AT A ZERO PERCENT GRADE ALONG THE LENGTH OF THE DISCHARGE LIP. FLOW MUST DISCHARGE UNIFORMLY ALONG THE LENGTH OF THE SPREADER.
2. CARE MUST BE EXERCISED IN SITING THE SPREADER, SO THAT IT DISCHARGES ONTO A GENTLY SLOPING GRADE, WHERE RUNOFF EXITING THE SPREADER WILL NOT RE-CONCENTRATE AND CAUSE EROSION. A SLOPE THAT IS CONCAVE IN SHAPE (SUCH AS A SHALLOW SWALE) IS NOT SUITABLE FOR RECEIVING DISCHARGE FROM A LEVEL SPREADER. SUITABLE SLOPES ARE PLANAR OR CONVEX IN SHAPE, SO THAT FLOW WILL CONTINUE AS DISPERSED SHEET FLOW ACROSS THE SITE.
3. IT IS ESSENTIAL TO STABILIZE THE OUTLET LIP OF THE SPREADER, AND TO DISCHARGE ONTO A WELL STABILIZED RECEIVING AREA (PREFERABLY UNDISTURBED VEGETATION) TO PREVENT EROSION.

MAINTENANCE NOTES:
1. INSPECT AT LEAST ONCE ANNUALLY FOR ACCUMULATION OF SEDIMENT AND DEBRIS AND FOR SIGNS OF EROSION WITHIN APPROACH CHANNEL, SPREADER CHANNEL OR DOWN-SLOPE OF THE SPREADER.
2. REMOVE DEBRIS WHENEVER OBSERVED DURING INSPECTION.
3. REMOVE SEDIMENT WHEN ACCUMULATION EXCEEDS 25% OF SPREADER CHANNEL DEPTH.
4. MOW AS REQUIRED BY LANDSCAPING DESIGN. AT A MINIMUM, MOW ANNUALLY TO CONTROL WOODY VEGETATION WITHIN THE SPREADER.
5. SNOW SHOULD NOT BE STORED WITHIN OR DOWN-SLOPE OF THE LEVEL SPREADER OR ITS APPROACH CHANNEL.
6. REPAIR ANY EROSION AND RE-GRADE OR REPLACE STONE BERM MATERIAL, AS WARRANTED BY INSPECTION.
7. RECONSTRUCT THE SPREADER IF DOWN-SLOPE CHANNELIZATION INDICATES THAT THE SPREADER IS NOT LEVEL OR THAT DISCHARGE HAS BECOME CONCENTRATED AND CORRECTIONS CANNOT BE MADE THROUGH MINOR RE-GRADING.

LEVEL SPREADER DETAIL

NOT TO SCALE

Wood Turtle

New Hampshire Species of Special Concern

Contact NHFG Wildlife Biologist if observed within your project site:

Josh Megyesy 603-271-1127 or 978-578-0802c (call or text)

- **Turtles may be attracted to disturbed ground during nesting season (May 15th – July 15th)**
- **Turtles are most active from April 15th – October 15th**

Identifying traits

- Neck and forelimbs are orange
- Highly sculpted shell with each large scute taking on an irregular pyramidal shape
- Adults can be 5-8 inches long

Habitat

- Wooded areas near streams
- Uplands surrounding streams
- Stream channel or associated wetland

NOTE: It is illegal to remove a wood turtle from the wild

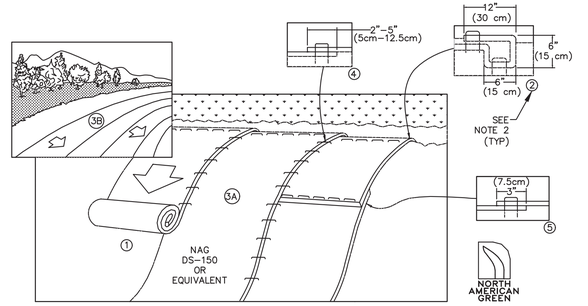
Immediately report nesting turtles, suspected nesting turtles or suspected nest sites to NHFG Wildlife Biologist.

All other observation of this species shall be reported to NHFG via email at NHFGReview@wildlife.nh.gov. Include in the email subject line: NHBxx-xxx, Project Name, Wildlife Observation. Photo documentation, location, date/time of observation.

State laws pertaining to this species RSA 207:1, FIS 804.02, FIS 1401.03 (a)

RARE TURTLE FLYERS

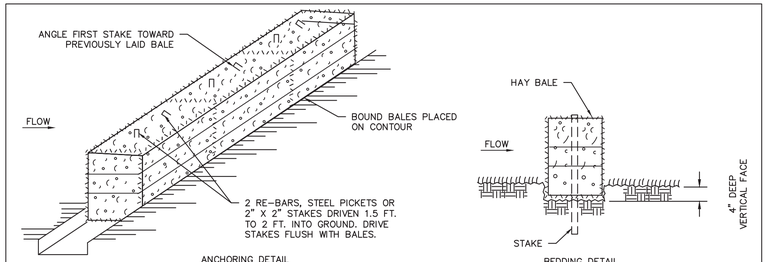
NOT TO SCALE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
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.
6. THERE SHALL BE NO PLASTIC, OR MULTIFILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES MATERIAL UTILIZED.

EROSION CONTROL BLANKET DETAIL

NOT TO SCALE



NOTES:
1. BALES SHALL BE PLACED AT THE TOP OF SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4", AND PLACED SO THAT BINDINGS ARE HORIZONTAL.
3. 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 BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

HAY BALE BARRIER DETAIL

NOT TO SCALE

WILDLIFE PROTECTION NOTES:

- ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES SHALL BE REPORTED IMMEDIATELY TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV. EMAIL SUBJECT LINE: NHB22-1680, NHB21-0316, KEENE SAND AND GRAVEL, WILDLIFE SPECIES OBSERVATION.
- PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHF&G IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION AS FEASIBLE.
- IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHF&G AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHF&G, IF ANY, TO ASSURE THE PROJECT DOES NOT APPRECIABLY JEOPARDIZE THE CONTINUED EXISTENCE OF THREATENED AND ENDANGERED SPECIES AS DEFINED IN FIS 1002.04.
- THE NHF&G, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.

PROTECTED SPECIES INFORMATION:

WOOD TURTLE (GLYPTEMYS INSCULPTA)

NH CONSERVATION STATUS: SPECIES OF SPECIAL CONCERN, WILDLIFE ACTION PLAN SPECIES IN GREATEST NEED OF CONSERVATION. LEGALLY PROTECTED IN NEW HAMPSHIRE: POSSESSION, SALE, IMPORT, AND TAKE (HARM, HARASS, INJURING, KILLING) IS ILLEGAL.

STATE RANK STATUS: VULNERABLE TO EXTIRPATION AND EXTINCTION.

DISTRIBUTION: THROUGHOUT NH EXCEPT REGIONS OF HIGH ELEVATION.

DESCRIPTION: A 5-8 INCH TURTLE CHARACTERIZED BY ITS HIGHLY SCULPTED SHELL WHERE EACH LARGE SCUTE TAKES AN IRREGULAR PYRAMIDAL SHAPE. THE NECK AND FORELIMBS ARE ORANGE.

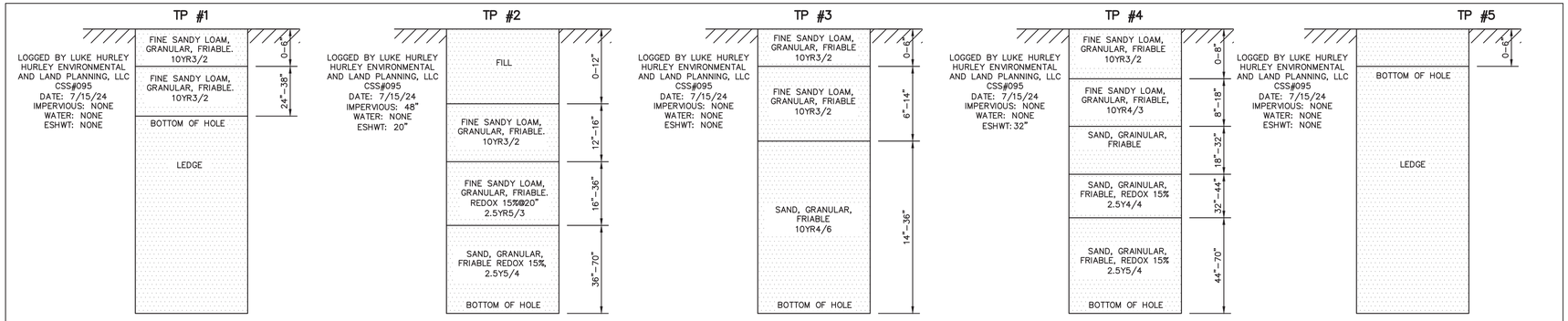
COMMONLY CONFUSED SPECIES: JUVENILE SNAPPING TURTLES.

HABITAT: FOUND IN SLOW-MOVNG STREAMS AND CHANNELS WITH SANDY BOTTOMS. EXTENSIVE USE OF TERRESTRIAL HABITATS DURING SUMMER, INCLUDING FLOODPLAINS, MEADOWS, WOODLANDS, FIELDS, AS WELL AS WETLANDS.

LIFE HISTORY: LAY 4-12 EGGS IN SHALLOW DEPRESSIONS IN SANDY, WELL-DRAINED SOILS. NEST SITES ARE USUALLY NEAR STREAMS BUT MAY ALSO BE IN CLEARINGS, AGRICULTURAL FIELDS, OR OTHER DISTURBED AREAS. HIBERNATE IN SLOW-MOVING STREAMS AND RIVERS UNDER RIVERBANKS, ROOT MASSES, OR WOODY DEBRIS.

CONSERVATION THREATS: ROAD MORTALITY, HABITAT LOSS AND FRAGMENTATION, STREAM ALTERATION, HUMAN COLLECTION, AND INCREASED ABUNDANCE OF SUBSIDIZED PREDATORS.

SOURCE: NEW HAMPSHIRE FISH AND GAME DEPARTMENT © HTTPS://WILDLIFE.STATE.NH.US/WILDLIFE/PROFILES/WOOD-TURTLE.HTML



NOTES:
TEST PITS PERFORMED BY LUKE HURLEY ON 7/15/24

TEST PIT LOGS

NOT TO SCALE

GRANITE ENGINEERING
civil engineering
land planning
municipal services

REVISIONS

No.	DATE	COMMENTS	BY
1	12/20/24	PROJECT SUBMITTAL	JD
2	2/3/25	REVISED PER CITY COMMENTS	JD
3	5/5/25	REVISED PER CITY COMMENTS	JD
4	7/9/25	REVISED PER CITY COMMENTS	JD
5	7/24/25	ADDITIONAL WELL LOCATIONS	JD
6	8/11/25	REVISED PER CITY COMMENTS	JD

OWNER/APPLICANT:
62 HOLDINGS, LLC
250 NORTH STREET
JAFFREY, NH 03452

GRANITE ENGINEERING
civil engineering • land planning • municipal services
150 Dow Street, Tower 2, Suite 421
Manchester, New Hampshire 03101
603.518.8030
www.GraniteEng.com

STAMP:
STATE OF NEW HAMPSHIRE
BRENTON J. COLE
No. 14744
8/11/25
LICENSED PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
DETAILS

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	AS SHOWN
SHEET:	23 OF 23	

P:\3\2302011\dwg\Production Plans\2302011-DETAILS.dwg, 8/7/2025 10:13:09 AM

August 8, 2025
File No. 2024042

City of Keene
Community Development Department – Planning and Zoning
3 Washington Street
Keene, New Hampshire 03431

Re: Addendum to: G2 Holdings – Keene Quarry Expansion – 2024 Hydrogeologic Investigation Report

Dear Community Development Department – Planning and Zoning;

Frontier Geoservices, LLC. (Frontier) is pleased to present this addendum to the G2 Holdings – Keene Quarry Expansion – 2024 Hydrogeologic Investigation Report. The contents of this report contain additional information on the hydrogeological conditions at the above referenced Site located at 57 Route 9, Keene New Hampshire, which is identified on the City of Keene Tax Map 215 Block 7.

Purpose of Addendum

This addendum has been prepared to document supplemental hydrogeologic investigations conducted in response to uncertainties regarding groundwater elevations observed in historic monitoring well SRL-12. The quarry expansion plan proposes excavation to depths below the previously reported static water level in SRL-12, prompting the need for further subsurface characterization.

Although historical data from adjacent test pits and monitoring wells suggested that groundwater would not be encountered at the proposed excavation depths, the anomalously shallow water levels recorded in SRL-12 introduced ambiguity that warranted further investigation. To address this uncertainty and support excavation planning, additional lithologic logging and groundwater observations were completed within the proposed quarry expansion area.

Summary of Field Activities

To resolve uncertainties related to groundwater elevation in the vicinity of monitoring well SRL-12, a targeted hydrogeologic investigation was performed by Frontier Geoservices, LLC. Field activities involved the installation of five additional monitoring wells: MW-9, BRW-9, BRW-10, BRW-11, and BRW-12 and comprehensive groundwater level monitoring of all site wells. All drilling was performed by Geosearch Environmental Contractor under the oversight of Frontier Geoservices personnel.

Please refer to **Attachment A** for a **Monitoring Well Location Map.**

Frontier Geoservices, LLC.
127 Old Warner Road
Bradford, NH 03221
T (603) 748-3715

Drilling and Well Installation

MW-9

Monitoring well MW-9 was installed on July 14, 2025, to a total depth of 9 feet below ground surface (bgs). Drilling was conducted using a track-mounted Diedrich D-50 drill rig employing hollow-stem auger methods. Lithology was logged by Frontier Geoservices staff from drill cuttings.

The subsurface profile at MW-9 consisted of fragmented bedrock with a minor sand and gravel component from ground surface to the termination depth of 9 feet bgs. The material was described as dry throughout, and refusal was encountered at 9 feet, indicating shallow bedrock.

No groundwater was encountered during drilling, and the borehole remained dry during the stabilization period. Groundwater observations conducted approximately 8 days after installation still indicated dry conditions.

BRW-9

Monitoring well BRW-9 was installed on July 14, 2025, and advanced to a total depth of 50 feet bgs using hollow-stem auger methods followed by a 3-inch air hammer.

The upper 9 feet of the boring consisted of light gray, fragmented bedrock with minor sand and gravel content, logged as dry. From 9 to 50 feet bgs, drilling encountered a light gray to tan, highly weathered schist, which was fine- to medium-grained, extremely friable, and lacked competent rock fragments. The recovered cuttings exhibited mica, imparting a subtle sheen and platy texture to some samples. Trace amounts of pyrite were observed in select intervals as fine, disseminated grains.

A subhorizontal fracture was encountered at approximately 23.5 feet bgs, which yielded approximately 3 gallons per minute of groundwater during air rotary drilling. No staining or mineral precipitates were observed along the fracture.

The well was completed with the screened interval positioned to intercept the observed water-producing zone. Water level monitoring conducted approximately 8 days post-installation recorded a stabilized depth to water of 9.44 feet bgs, corresponding to an elevation of 877.37 feet AMSL.

BRW-10

Monitoring well BRW-10 was installed on July 15, 2025, and advanced to a total depth of 85 feet bgs using hollow-stem auger methods followed by a 3-inch air hammer.

From 0 to 16 feet bgs, drilling encountered light gray, weathered and fragmented bedrock with minor sand content. This interval consisted of angular rock fragments mixed with medium- to coarse-grained sand, interpreted as a transition zone between overburden and underlying bedrock, likely representing in-place mechanical breakdown. The interval was dry and yielded no competent fragments.

From 16 to 85 feet bgs, the boring encountered light gray to tan, highly weathered schist, recovered as extremely friable, fine- to medium-grained cuttings. Mica was present throughout, giving portions of the sample a platy texture and subtle sheen. Trace disseminated pyrite was observed in select intervals. Though the rock is inferred to be schistose, foliation could not be confirmed due to sample disaggregation during drilling.

Two notable fracture features were encountered:

- At 23.5 feet bgs, a subhorizontal fracture produced an estimated 3 gallons per minute of groundwater during air rotary drilling.
- At 71.6 feet bgs, a narrow, clean fracture was intersected, which contributed to an increase in total airlift recovery to approximately 5 gallons per minute, likely due to cumulative flow from both fractures. No staining or mineral precipitates were observed.

Post-installation groundwater monitoring recorded a stabilized depth to water of 34.41 feet bgs, corresponding to an elevation of 849.93 feet AMSL, approximately 8 days after well installation.

BRW-11

Monitoring well BRW-11 was installed on July 16, 2025, to a total depth of 85 feet bgs. Drilling was conducted using a combination of hollow-stem auger, 3-inch air hammer, and air roller methods.

From 0 to 18 feet bgs, the boring advanced through light gray, weathered and fragmented bedrock with a minor sand component, interpreted as a transition zone between overburden and underlying bedrock. Material was dry and composed of angular fragments mixed with medium- to coarse-grained sand, indicative of in-place mechanical breakdown of the upper bedrock surface.

Between 18 and 48 feet bgs, drilling encountered highly weathered schist, which was light gray to tan, fine- to medium-grained, and extremely friable, with no competent fragments recovered. Muscovite mica was present throughout, giving the cuttings a platy texture and subtle sheen. Trace disseminated pyrite was observed in some intervals.

At approximately 48 feet bgs, a sand- and silt-filled fracture was encountered, yielding less than 1 gallon per minute of groundwater. The infilled nature and low flow suggest limited connectivity or permeability. Drilling conditions degraded significantly at this depth due to the fragility of the formation.

From 51 to 85 feet bgs, the boring continued through extremely weak and poorly consolidated schist, which displayed even lower competency than the overlying material. Due to persistent fragmentation and unstable borehole conditions, the drilling method was switched from air rotary to air roller at 51 feet. Cuttings continued to exhibit abundant mica and minor pyrite, consistent with the schist observed at shallower depths.

Groundwater level measurements approximately 7 days after installation indicated a stabilized water level of 46.34 feet bgs, equivalent to 838.84 feet AMSL.

BRW-12

Monitoring well BRW-12 was installed on July 17, 2025, and advanced to a total depth of 90 feet bgs using hollow-stem auger and 3-inch air roller methods.

From 0 to 9 feet bgs, the boring encountered light gray, highly weathered schist, which was more competent than similar intervals observed in adjacent wells. While no clear contact was observed between overburden and competent bedrock, the material exhibited sufficient structural cohesion to behave as bedrock during drilling. Schistosity was inferred from subtle platy textures and the presence of mica, and small competent rock fragments were recovered.

Between 9 and 78 feet bgs, drilling progressed through highly weathered schist that was light gray to tan, fine- to medium-grained, and extremely friable, with no competent fragments recovered. Mica was prevalent, giving the material a subtle sheen, and trace pyrite was observed as fine disseminated grains. Although the rock was inferred to be schistose, foliation could not be definitively identified due to the nature of the drilling method.

At approximately 78 feet bgs, the boring encountered an abrupt contact with a more intact, tan, moist, hard, competent schist. The unit was mica-rich, producing fine- to medium-sand–sized cuttings with a silvery sheen due to the high mica content. This zone extended from 78 to 90 feet bgs, where drilling was terminated.

Groundwater level measurements collected approximately 5 days after well installation indicated a stabilized depth to water of 54.60 feet bgs, corresponding to an elevation of 832.14 feet AMSL.

Please refer to **Attachment B** for **Boring & Monitoring Well Construction Logs.**

Well Development

Following installation, each monitoring well was developed using a Geotech GeoSub2® submersible pump on July 22, 2025. Wells were purged and surged continuously until clean, low-turbidity water was observed. Development procedures ensured removal of fine-grained material introduced during drilling, improved hydraulic connectivity to surrounding formation, and stabilized the water column for future sampling. None of the wells went dry during development, with sustained yields observed in the range of 3 to 5 gallons per minute, indicating sufficient recharge and hydraulic capacity for ongoing monitoring activities.

August 5, 2025 Comprehensive Groundwater Level Monitoring Event

On August 5, 2025, Frontier Geoservices, LLC conducted a comprehensive synoptic round of groundwater level monitoring across both overburden and bedrock monitoring wells. The event aimed to evaluate static groundwater conditions under consistent hydrologic settings, supporting assessments related to potential quarry expansion.

Overburden Monitoring Wells (MW-1 through MW-5 and MW-9)
Of the six monitored overburden wells, five were dry during the event, indicating the absence of saturated conditions within surficial soils across most of the site. MW-2, located in a lower-lying area, exhibited trace groundwater (<3 inches below ground surface), suggestive of a perched or discontinuous zone of saturation. These results are consistent with previous monitoring rounds and support the interpretation that a continuous water table is not present in the overburden.

Existing Bedrock Monitoring Wells (BRW-1 through BRW-8)
Only BRW-7 showed measurable groundwater, with a static water level of 2.78 feet bgs (1179.22 feet AMSL). This water is associated with a shallow fracture zone at approximately 5 feet bgs, which likely provides localized recharge. All other existing bedrock wells were dry, including BRW-8, which intersects a fracture at 9 feet bgs that has produced water in the past but was found to be dry during this event. These results indicate limited connectivity and recharge within shallow bedrock fractures.

New Bedrock Monitoring Wells (BRW-9 through BRW-12)
Water levels were observed in all four newly installed bedrock wells:

- BRW-9: Water at 9.44 ft bgs (877.37 ft AMSL); associated with a productive fracture at 23.5 ft.
- BRW-10: Water at 34.41 ft bgs (845.59 ft AMSL); cumulative yield from intersecting fractures at 23.5 and 71.6 ft.
- BRW-11: Water at 46.34 ft bgs (834.66 ft AMSL); limited recharge from a sand- and silt-filled fracture at 48 ft.
- BRW-12: Water at 54.60 ft bgs (828.40 ft AMSL); competent bedrock unit with no observed active flow.

These results reflect deeper, fracture-controlled groundwater in the bedrock system, with variability in hydraulic connectivity and recharge across the site.

Based on groundwater elevations measured during the August 5, 2025 monitoring round, groundwater flow is inferred to be generally toward the south. This is consistent with site topography and the relative elevations of the monitored wells and supports the interpretation that recharge from precipitation is transmitted downgradient toward the base of the quarry and/or the intermittent stream corridor**.**

Please refer to **Attachment C** for a **Groundwater Elevation Table** and **Attachment D** for a **Groundwater Flow Direction Map.**

Stream Observation

In conjunction with groundwater monitoring, the intermittent stream located east of the proposed quarry expansion area was walked to assess surface water conditions. While no active flow was observed at the time of inspection, several standing puddles were present, indicating that the streambed does retain water intermittently. This observation is consistent with the National Wetlands Inventory (NWI) Database, which maps this feature as an intermittent stream. These findings further

support the conclusion that surface water-groundwater interaction is limited or seasonally variable within the project area.

Hydrogeological Conceptual Model

The hydrogeologic setting of the site is characterized by a thin, highly permeable overburden layer overlying metamorphic bedrock of varying structure and weathering intensity. The behavior of groundwater at the site is governed by the physical properties of both the surficial materials and the underlying bedrock, as well as the nature of regional topography and surface water features.

Overburden Conditions

The overburden across the site consists primarily of coarse-textured, unconsolidated material with high hydraulic conductivity. This results in minimal residence time for infiltrating precipitation. Rainfall that does not run off is rapidly transmitted downgradient, particularly following precipitation events, with limited capacity for storage or perched saturation.

Groundwater level monitoring confirms that the overburden remains largely unsaturated, with only localized, trace saturation (e.g., MW-2) potentially representing perched or discontinuous zones. The majority of groundwater transmitted through the overburden is presumed to discharge downgradient to the intermittent stream east of the site or toward the base of the existing quarry excavation.

Bedrock Conditions and Variability

A notable contrast exists between the character of the bedrock observed in older and newer monitoring wells:

- BRW-1 through BRW-8 encountered massive, hard, and non-friable schist with minimal weathering and limited fracture development. These wells exhibited either no groundwater yield or extremely shallow, localized flow conditions. The bedrock in this portion of the site acts as a relatively impermeable barrier to infiltration, with minimal primary porosity and low permeability outside of discrete fracture zones.
- In contrast, BRW-9 through BRW-11 encountered bedrock that is more weathered and saprolite-like in character, with a friable texture and higher secondary porosity. These zones exhibit greater capacity for storing and transmitting infiltrated water, and the transition from overburden to bedrock is more gradational. Nevertheless, fracture flow remains the dominant mechanism for groundwater movement in these wells, with productive features encountered at discrete intervals (e.g., 23.5 ft and 71.6 ft bgs).
- BRW-12, while also productive, intersected competent, less weathered schist at depth, yielding low or no flow, further emphasizing the heterogeneity of the bedrock system across the site.

Surface Water Interaction

The intermittent stream east of the quarry expansion area provides a key hydrologic boundary. During the August 5, 2025 field investigation, no active flow was observed but standing water (puddles) were present in the channel. The stream is mapped as intermittent in the National Wetlands

Inventory and likely represents a seasonal or storm-driven discharge zone for groundwater moving through the overburden and shallow fractured bedrock.

Summary

The site's hydrogeology can be summarized as follows:

- Rapid infiltration and downgradient transmission of recharge through permeable overburden.
- Localized perched water or shallow saturation in discrete areas.
- Low groundwater occurrence in massive, unweathered bedrock (BRW-1 through BRW-8).
- Enhanced porosity and flow in weathered, saprolitic bedrock (BRW-9 through BRW-11).
- Fracture-controlled groundwater movement dominates across all bedrock zones.
- The intermittent stream and quarry base serve as primary discharge boundaries.

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

Sincerely,

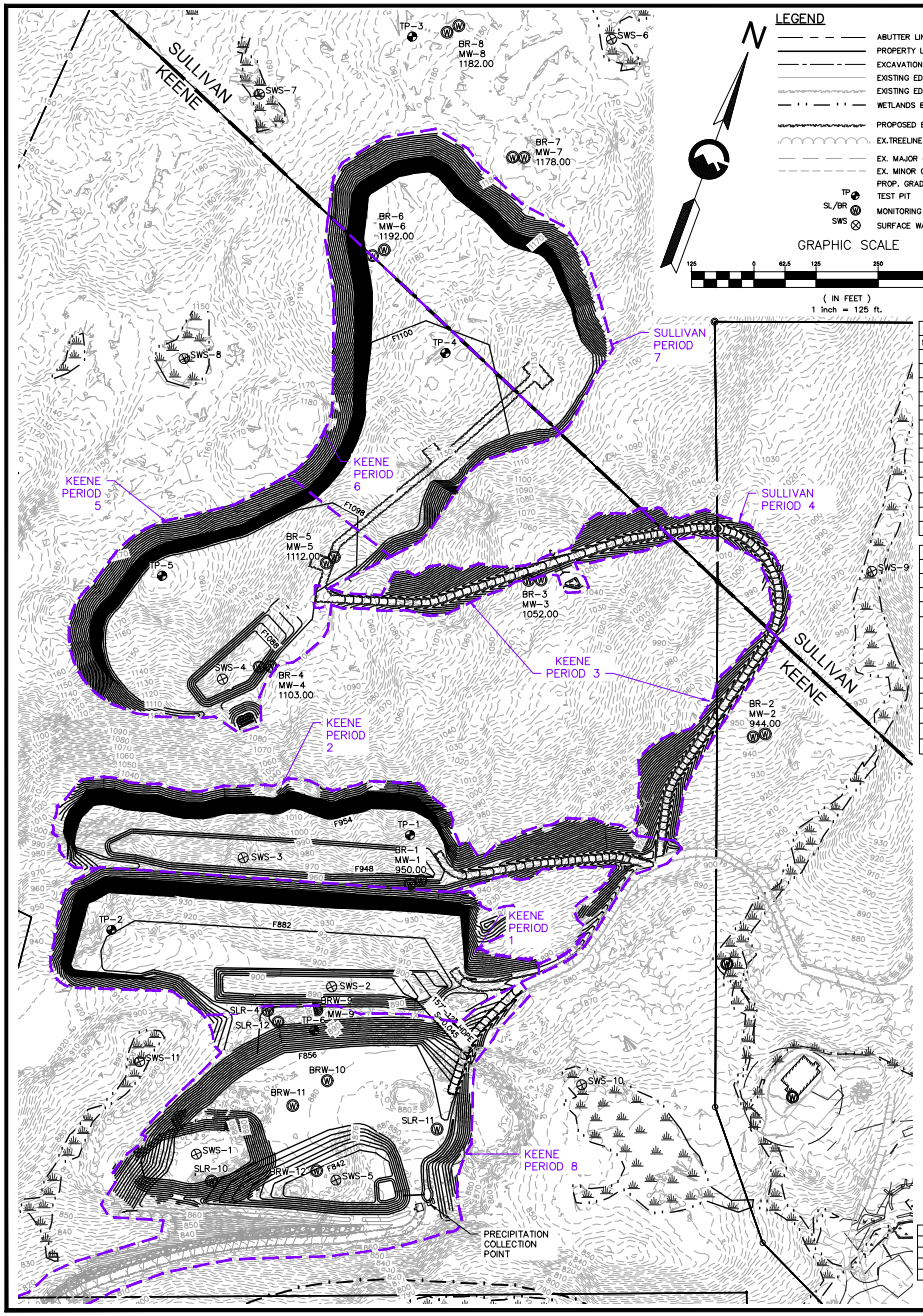
Frontier Geoservices, LLC.

Joel Banaszak, P.G.
President

Attachments
c: File No. 2024012 (w/attachments)

ATTACHMENTS

Attachment A
Monitoring Well Location Map



LEGEND

- ABUTTER LINE
- PROPERTY LINE
- EXCAVATION SETBACK LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- WETLANDS BOUNDARY
- PROPOSED EDGE OF GRAVEL
- EX.TREELINE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- PROP. GRADE LINE
- TP — TEST PIT
- SL/BR — MONITORING WELL
- SWS — SURFACE WATER SAMPLE LOCATION

GRAPHIC SCALE

125 0 62.5 125 250 500

(IN FEET)
1 inch = 125 ft.

DIG SAFE
811
CALL DIG SAFE
DAMAGE PREVENTION SYSTEM
UTILITIES UNDERGROUND

ACID ROCK DRAINAGE (ARD) MONITORING		
MONITORING LOCATION	TESTING MONTHS	FREQUENCY
SLR-10	APRIL & OCTOBER	BI-ANNUALLY
SLR-11	APRIL & OCTOBER	BI-ANNUALLY
SLR-12	APRIL & OCTOBER	BI-ANNUALLY
BR-1	APRIL & OCTOBER	BI-ANNUALLY
BR-2	APRIL & OCTOBER	BI-ANNUALLY
BR-3	APRIL & OCTOBER	BI-ANNUALLY
BR-4	APRIL & OCTOBER	BI-ANNUALLY
BR-5	APRIL & OCTOBER	BI-ANNUALLY
BR-6	APRIL & OCTOBER	BI-ANNUALLY
BR-7	APRIL & OCTOBER	BI-ANNUALLY
BR-8	APRIL & OCTOBER	BI-ANNUALLY
SWS-1	APRIL & OCTOBER	BI-ANNUALLY UNTIL START OF PERIOD 8
SWS-2	APRIL & OCTOBER	BI-ANNUALLY AFTER START OF PERIOD 1
SWS-3	APRIL & OCTOBER	BI-ANNUALLY AFTER START OF PERIOD 21
SWS-4	APRIL & OCTOBER	BI-ANNUALLY AFTER START OF PERIOD 5
SWS-5	APRIL & OCTOBER	BI-ANNUALLY AFTER START OF PERIOD 8

WATER LEVEL MONITORING	
MONITORING LOCATION	FREQUENCY
SLR-10	MONTHLY
SLR-11	MONTHLY
SLR-12	MONTHLY
MW-2	MONTHLY
MW-4	MONTHLY
BR-7	MONTHLY
BR-8	MONTHLY
SWS-6	MONTHLY
SWS-7	MONTHLY
SWS-8	MONTHLY
SWS-9	MONTHLY
SWS-10	MONTHLY
SWS-11	MONTHLY

AMD FORMATION STANDARDS	
ANALYTE	STANDARD
SPECIFIC CONDUCTANCE	NO STANDARD
OXIDATION REDUCTION POTENTIAL	NO STANDARD
DISSOLVED OXYGEN	75%/5 mg/L
TURBIDITY	10 NTU (BEYOND NATURALLY OCCURRING CONDITIONS)
pH	6.0 SU
ARSENIC	5 µg/L
COPPER	1,300 µg/L
IRON	300 µg/L
MANGANESE	300 µg/L
NICKEL	100 µg/L
LEAD	15 µg/L

TEST PITS

ID	EXISTING GRADE	LEDGE	GROUNDWATER	E.S.H.W.T.
TP-1	986.0	3.1'	NONE FOUND	NONE FOUND
TP-2	926.0	NONE	NONE FOUND	20"
TP-3	1180.0	NONE	NONE FOUND	NONE FOUND
TP-4	1158.0	NONE	NONE FOUND	32"
TP-5	1190.0	0.5"	NONE FOUND	NONE FOUND
TP-6	887.0	873.0	NONE FOUND	NONE FOUND

OVERBURDEN WELLS

WELL	EXISTING GRADE	LEDGE	GROUNDWATER
MW-1	950.0	3.3'	NONE FOUND
MW-2	944.0	12'	NONE FOUND
MW-3	1052.0	14.2'	NONE FOUND
MW-4	1103.0	3.1'	NONE FOUND
MW-5	1112.0	5'	NONE FOUND
MW-6	1192.0	0.9'	NONE FOUND
MW-7	1178.0	1.9'	NONE FOUND
MW-8	1182.0	1.1'	NONE FOUND
MW-9	884.38	XX	XX

BEDROCK WELLS

Well	Ground Elevation (ft AMSL)	Bedrock Depth (feet)	Depth/Bottom Elevation (feet/ AMSL) ft	Proposed Floor Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)
BRW-1	960	3	84/896	960	DRY
BRW-2	944	2	82/882	940	DRY
BRW-3	1052	4	51+/1001	1,050	DRY
BRW-4	1,103	3	81+/1,022	1,099	DRY
BRW-5	1,112	3	141/971	1,098	DRY
BRW-6	1,192		142+/1,050	1,098	DRY
BRW-7	1,178	18	141+/1,037	1,098*	1,177.64
BRW-8	1,182		141+/1,041	1,098*	1,179.16

*Well is located outside of project area. The pit floor elevation that is noted is the proposed elevation of the nearest excavation.

WELL	EXISTING GRADE	TOP OF WELL	LEDGE	GROUNDWATER
BRW-9	884.31	886.81	XX	XX
BRW-10	879.94	884.34	XX	XX
BRW-11	881.39	885.19	XX	XX
BRW-12	882.74	886.74	XX	XX

ON-SITE WATER QUALITY MONITORING NOTES (ARD MONITORING)

1. PH, SPECIFIC CONDUCTANCE, OXIDATION, REDECTION POTENTIAL, DISSOLVED OXYGEN AND TURBITY AND LABRATORY ANALYSIS OF DISSOLVED AND TOTAL METALS INCLUDING: ARSENIC, COPPER, IRON, MAGNESE, NICKEL AND LEAD WILL BE TESTED AT EACH LOCATION

INITIAL RESPONSE ACTION – AMD DETECTION

IF A SURFACE AND/OR GROUNDWATER SAMPLING LOCATION PRESENTS RESULTS THAT ARE INDICATIVE OF THE FORMATION OF ACID MINE DRAINAGE, NHDES AND THE CITY OF KEENE WILL BE NOTIFIED IMMEDIATELY. FURTHERMORE, THE FOLLOWING IMMEDIATE INITIAL RESPONSE ACTIONS WILL BE IMPLEMENTED.

1. ALL ACTIVE QUARRYING/MINING OPERATIONS OCCURRING IN THE AFFECTED AREA WILL CEASE AND EXPOSED BEDROCK SURFACES SHALL BE EXPEDITIOUSLY RESTORED TO HAVE A MINIMUM THICKNESS OF 3-FEET OF COVER MATERIAL. THE COVER MATERIAL SHALL CONSIST OF A MINIMUM OF 30% CLAY CONTENT. COVER MATERIAL SHALL BE COMPACTED IN 1-FOOT LIFTS. THE INTENT OF THE CLAY CONTENT AND COMPACTION IS TO LIMIT AIR AND SURFACE WATER CONTACT WITH THE SOURCE OF THE ACID MINE DRAINAGE.
2. ANY DOWNSLOPE AFFECTED DRAINAGES WHICH MAY BE CONTRIBUTING/CONVEYING ACID MINE DRAINAGE SHALL BE ARMORED WITH 1-FOOT OF 2-INCH MINUS, CRUSHED, LIMESTONE GRAVEL.
3. THE FREQUENCY OF SURFACE WATER AND GROUNDWATER MONITORING FOR ACID MINE DRAINAGE WILL BE INCREASED TO A QUARTERLY BASIS.
4. ALL SURFACE WATER WITHIN ¼-MILE DOWNGRADIENT OF THE DETECTED ACID MINE DRAINAGE SHALL BE SAMPLED WITHIN 2-WEEKS OF THE INITIAL DETECTION AND BE INCLUDED IN THE SURFACE WATER MONITORING PROGRAM.
5. SAMPLING OF ALL DOMESTIC WATER SUPPLY WELLS WITHIN ½-MILE OF THE AFFECTED AREA FOR ACID MINE DRAINAGE PARAMETERS WILL OCCUR WITHIN 2-WEEKS OF THE INITIAL DETECTION AND CONTINUE TO BE SAMPLED ON A QUARTERLY BASIS.
   A. IF ACID MINE DRAINAGE IS DETECTED IN A DOMESTIC WATER SUPPLY WELL THE HOMEOWNER SHALL BE OFFERED TO HAVE A 'POINT-OF-USE' WATER TREATMENT SYSTEM INSTALLED AND MAINTAINED WHILE A NEW, UNIMPACTED, DOMESTIC WATER SUPPLY IS MADE AVAILABLE AT NO COST TO THE HOMEOWNER.
6. A GROUNDWATER QUALITY ASSESSMENT IN THE AREAS DOWNGRADIENT TO THE DETECTED ACID MINE DRAINAGE WILL BE INITIATED.
   A. THE GROUNDWATER QUALITY ASSESSMENT SHALL INCLUDE THE INSTALLATION OF A MINIMUM OF THREE (3) MONITORING WELLS; ONE UPGRADIENT OF THE AFFECTED SURFACE WATER, AND TWO DOWN-GRADIENT OF THE AFFECTED SURFACE WATER. ADDITIONAL MONITORING WELLS MAY BE REQUIRED TO DETERMINE THE HORIZONTAL AND VERTICAL DISTRIBUTION OF THE GROUNDWATER IMPACTS.
   B. GROUNDWATER SAMPLES WILL BE COLLECTED WITHIN 2 WEEKS OF INSTALLATION AND ANALYZED FOR ACID MINE DRAINAGE PARAMETERS LISTED ABOVE. A SECOND, CONFIRMATORY ROUND OF SAMPLING WILL OCCUR 2-WEEKS AFTER THE INITIAL SAMPLING ROUND. MONITORING WELLS WILL BE SAMPLED ON A QUARTERLY BASIS IF ACID MINE DRAINAGE IMPACTS ARE DETECTED.

OFF-SITE WATER QUALITY MONITORING NOTES

1. LAND OWNERS WITHIN ½ MILE OF THE EXCAVATION SITE WILL BE OFFERED GROUNDWATER QUALITY MONITORING.
2. NOTIFICATIONS WILL BE MADE TO LANDOWNERS WITH THE OPTION TO ALLOW OR DECLINE MONITORING.

BASELINE MONITORING

3. TWO ROUNDS OF SAMPLING WILL OCCUR A MINIMUM OF 14 CALENDAR DAYS APART.
4. SAMPLES WILL BE ANALYZED FOR VOLATILE ORGANIC COMPOUNDS AND NITRATE.
5. RESULTS WILL BE SENT TO THE LAND OWNER, THE CITY OF KEENE, & TOWN OF SULLIVAN.

ON-GOING MONITORING

6. BI-ANNUAL BASIS OF WELLS DURING THE TERM OF THE PERMIT.
7. BI-ANNUAL BASIS OF WELLS TWO (2) YEARS FOLLOWING THE CEASE OF OPERATIONS AT THE SITE AND RECLAMATION.
4. SAMPLES WILL BE ANALYZED FOR VOLATILE ORGANIC COMPOUNDS AND NITRATE.
5. RESULTS WILL BE SENT TO THE LAND OWNER, THE CITY OF KEENE, & TOWN OF SULLIVAN.

ADVERSE IMPACTS

6. DRINKING WATER RESULTS WILL BE COMPARED TO THE NHDES AMBIENT GROUNDWATER QUALITY STANDARDS (AGQS).
7. IF ADVERSE IMPACTS ARE NOTED, THE APPLICANT WILL IMMEDIATELY BE NOTIFIED TO CEASE BEDROCK EXCAVATION.
8. NHDES, THE CITY OF KEENE, AND TOWN OF SULLIVAN WILL BE NOTIFIED.
9. IF MONITORING INDICATES THE EXCAVATION ACTIVITIES CAUSED THE IDENTIFIED CONTAMINATION, A LICENSED NH WELL CONTRACTOR WILL BE IMMEDIATELY RETAINED FOR INSTALLATION OF A NEW WATER SUPPLY WELL IN AN AREA THAT HAS NOT BEEN IMPACTED BY CONTAMINATION.
10. COST OF WELL WILL BE THE SOLE RESPONSIBILITY OF THE APPLICANT.

BEST MANAGEMENT PRACTICES FOR BLASTING

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

(1) LOADING PRACTICES. THE FOLLOWING BLASTHOLE LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:
   (a) DRILLING LOGS SHALL BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE BLASTER. THE LOGS SHALL INDICATE DEPTHS AND LOCATIONS OF VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED AS WELL AS GROUNDWATER CONDITIONS. IF A FRACTURE OR WATER BEARING ZONE IS ENCOUNTERED IN A BOREHOLE, NO BLASTING SHALL OCCUR AT THAT LOCATION.
   (b) EXPLOSIVE PRODUCTS SHALL BE MANAGED ON SITE SO THAT THEY ARE EITHER USED IN THE BOREHOLE, RETURNED TO THE DELIVERY VEHICLE, OR PLACED IN SECURE CONTAINERS FOR OFF SITE DISPOSAL.
   (c) SPILLAGE AROUND THE BOREHOLE SHALL EITHER BE PLACED IN THE BOREHOLE OR CLEANED UP AND RETURNED TO AN APPROPRIATE VEHICLE FOR HANDLING OR PLACEMENT IN SECURED CONTAINERS FOR OFF-SITE DISPOSAL.
   (d) LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND SHALL NOT BE LEFT IN THE BLASTHOLES OVERNIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED.
   (e) LOADING EQUIPMENT SHALL BE CLEANED IN AN AREA WHERE WASTEWATER CAN BE PROPERLY CONTAINED AND HANDLED IN A MANNER THAT PREVENTS RELEASE OF CONTAMINANTS TO THE ENVIRONMENT.
   (f) EXPLOSIVES SHALL BE LOADED TO MAINTAIN GOOD CONTINUITY IN THE COLUMN LOAD TO PROMOTE COMPLETE DETONATION. INDUSTRY ACCEPTED LOADING PRACTICES FOR PRIMING, STEMMING, DECKING AND COLUMN RISE NEED TO BE ATTENDED TO.
(2) EXPLOSIVE SELECTION. THE FOLLOWING BMPS SHALL BE FOLLOWED TO REDUCE THE POTENTIAL FOR GROUNDWATER CONTAMINATION WHEN EXPLOSIVES ARE USED:
   (a) EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXECUTION.
   (b) EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT HAVE THE APPROPRIATE WATER RESISTANCE FOR THE SITE CONDITIONS PRESENT TO MINIMIZE THE POTENTIAL FOR HAZARDOUS EFFECT OF THE PRODUCT UPON GROUNDWATER.
(3) PREVENTION OF MISFIRES. APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISFIRES.
(4) MUCK PILE MANAGEMENT. MUCK PILES (THE BLASTED PIECES OF ROCK) AND ROCK PILES SHALL BE MANAGED IN A MANNER TO REDUCE THE POTENTIAL FOR CONTAMINATION BY IMPLEMENTING THE FOLLOWING MEASURES:
   (a) REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.
   (b) MANAGE THE INTERACTION OF BLASTED ROCK PILES AND STORMWATER TO PREVENT CONTAMINATION OF WATER SUPPLY WELLS OR SURFACE WATER.
(5) SPILL PREVENTION MEASURES AND SPILL MITIGATION. SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED SUBSTANCES TO THE ENVIRONMENT. THE MEASURES SHALL INCLUDE AT A MINIMUM:
   (a) THE FUEL STORAGE REQUIREMENTS SHALL INCLUDE
      1. STORAGE OF REGULATED SUBSTANCES ON AN IMPERVIOUS SURFACE.
      2. SECURE STORAGE AREAS AGAINST UNAUTHORIZED ENTRY.
      3. LABEL REGULATED CONTAINERS CLEARLY AND VISIBLY.
      4. INSPECT STORAGE AREAS WEEKLY.
      5. COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS.
      6. WHEREVER POSSIBLE, KEEP REGULATED CONTAINERS THAT ARE STORED OUTSIDE MORE THAN 50 FEET FROM SURFACE WATER AND STORM DRAINS, 75 FEET FROM PRIVATE WELLS, AND 400 FEET FROM PUBLIC WELLS.
      7. SECONDARY CONTAINMENT IS REQUIRED FOR CONTAINERS CONTAINING REGULATED SUBSTANCES STORED OUTSIDE, EXCEPT FOR ON PREMISE USE HEATING FUEL TANKS, OR ABOVEGROUND OR UNDERGROUND STORAGE TANKS OTHERWISE REGULATED
   (a) THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
      1. EXPECT WHEN IN USE KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED.
      2. PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS.
      3. HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS.
      4. USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES.
      5. PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
   (a) THE TRAINING OF ON-SITE EMPLOYEES AND THE ON SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.
   (b) FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION RELATED EQUIPMENT WILL COMPLY WITH THE REGULATIONS OF NHDES [NOTE THESE REQUIREMENTS ARE SUMMARIZED IN WD-DWGB-22-6: 'BEST MANAGEMENT PRACTICES FOR FUELING AND MAINTENANCE OF EXCAVATION AND EARTHMOVING EQUIPMENT' OR ITS SUCCESSOR DOCUMENT.]

SUBSURFACE DATA

LOG	EXISTING GROUND	PROPOSED GRADE	LEDGE	DEPTH TO GROUNDWATER	WELL BOTTOM	GROUNDWATER ELEV.
SLR-4	888.0	880.0	873.0	NONE FOUND	873.0	NONE FOUND
SLR-10	884.0	855.0	NONE TO 829.0	42.9	828.0	841.1
SLR-11	871.5.0	855.0	NONE TO 795.5	NONE TO 45.2	817.8	826.3
SLR-12	885.0*	885.0	877.5	1.5	850.5	883.5**

SUBSURFACE DATA FROM TEST PIT, BORING, AND WELL INSTALLATION LOGS CONTAINED IN THE LIMITED GEOHYDROLOGIC INVESTIGATION BY SLR INTERNATIONAL CORPORATION, DATED MARCH 25, 2022.

* ELEVATION BASED ON CURRENT SURVEY

REVISIONS

No.	DATE	COMMENTS	BY
1	12/20/24	PROJECT SUBMITTAL	JD
2	5/9/25	REVISED PER CITY COMMENTS	JD
3	5/9/25	REVISED PER CITY COMMENTS	JD
4	7/9/25	REVISED PER CITY COMMENTS	JD
5	7/24/25	ADDITIONAL WELL LOCATIONS	JD

OWNER/APPLICANT:
CZ HOLDINGS, LLC
2 ADAMS AVENUE
ASHFORD, NH 03452

GRANITE ENGINEERING
civil engineering • land planning • municipal services
130 Dow Street, Tower 2, Suite 421
Manchester, New Hampshire 03101
603.518.8030
www.GraniteEng.com

STAMP:

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES
KEENE

TITLE:
MONITORING PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=125'
SHEET:	17 OF 23	

P:\23\23201\Eng Production Files\23201-WELL.dwg, WELL MONITORING PLAN, 7/24/2025 3:40:19 AM, jjustice, DWG To PDF.pc3, ANSI full bleed D (34.00 x 22.00 Inches), 1:1

Attachment B
Boring & Monitoring Well Construction Logs

FRONTIER GEOSERVICES

PROJECT

Gordon Services - Keene Pit

21 Route 9, Keene & Sullivan, New Hampshire

BORING NO. MW-9

SHEET 1 of 1

FILE NO. 2024012

CHKD. BY JFB

Boring Co.	Geosearch Environmental Contractors	Boring Location	See Boring Location Plan		
Driller	Michael DeAmicis	Ground Surface El.	884 FT AMSL	Datum	NAD83
Logged By	JFB	Date Start	7/14/2025	Date End	7/14/2025

Sampler Type:	Logged from cuttings
Sampler Size:	NA
Type Drill Rig:	Deidrich D-50 - Track Mounted
Drilling Method:	Hollow Stem Auger

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
7/22/2025	9:05:00 AM	DRY	DRY	~8 days
8/5/2025	10:00:00 AM	DRY	DRY	~3 weeks

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	WELL CONSTRUCTION DETAILS (NOT TO SCALE)
1							0 - 9' Fragmented bedrock with minor sand and gravel component. Dry.	
2								
3								
4								
5								
6								
7								
8								
9							Refusal at 9' BGS.	
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

GRANULAR SOILS (N-Values)	COHESIVE SOILS (N-Values)	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	2. U denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff	5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard	6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

Lithology logged from drill cuttings.

FRONTIER GEOSERVICES	**PROJECT** Gordon Services - Keene Pit 21 Route 9, Keene & Sullivan, New Hampshire	BORING NO. BRW-9 SHEET 1 of 1 FILE NO. 2024012 CHKD. BY JFB

Boring Co.	Geosearch Environmental Contractors	Boring Location	See Boring Location Plan		
Driller	Michael DeAmicis	Ground Surface El.	884 FT AMSL	Datum	NAD83
Logged By	JFB	Date Start	7/14/2025	Date End	7/14/2025

Sampler Type:	Logged from cuttings
Sampler Size:	N/A
Type Drill Rig:	Deidrich D-50 - Track Mounted
Drilling Method:	Hollow Stem Auger/3-inch Air Hammer

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
7/22/2025	9:10:00 AM	9.44' BGS	877.37	~8 days
8/5/2025	10:05:00 AM	10.71' BGS	876.1	~3 weeks

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	WELL CONSTRUCTION DETAILS (NOT TO SCALE)
5							0 - 9' Light gray, fragmented bedrock with minor sand and gravel component. Dry.	
10							9' - 50' Light gray to tan, highly weathered schist; fine- to medium-grained; recovered as extremely friable cuttings with no competent fragments. Mica is present throughout, giving portions of the sample a platy texture and subtle sheen. Trace pyrite observed in select cuttings, appearing as fine disseminated grains. Rock is inferred to be schistose, though foliation could not be confirmed due to sample disaggregation and the drilling method.	
15								
20								
25							23.5' Subhorizontal fracture was encountered. No staining or mineral precipitate was observed. The fracture yielded an estimated 3 gallons per minute of groundwater during air rotary drilling.	
30								
35								
40								
45								
50							Drilling terminated at 50' BGS.	
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								

GRANULAR SOILS (N-Values)	COHESIVE SOILS (N-Values)	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	2. U denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff	5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard	6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

Lithology logged from drill cuttings.

FRONTIER GEOSERVICES	**PROJECT** Gordon Services - Keene Pit 21 Route 9, Keene & Sullivan, New Hampshire	BORING NO. BRW-10 SHEET 1 of 1 FILE NO. 2024012 CHKD. BY JFB

Boring Co.	Geosearch Environmental Contractors	Boring Location	See Boring Location Plan		
Driller	Michael DeAmicis	Ground Surface El.	880 FT AMSL	Datum	NAD83
Logged By	JFB	Date Start	7/14/2025	Date End	7/15/2025

Sampler Type:	Logged from cuttings
Sampler Size:	N/A
Type Drill Rig:	Deidrich D-50 - Track Mounted
Drilling Method:	Hollow Stem Auger/3-inch Air Hammer

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
7/22/2025	9:15:00 AM	34.41' BGS	849.93	~8 days
8/5/2025	10:10:00 AM	32.44' BGS	851.9	~3 weeks

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	WELL CONSTRUCTION DETAILS (NOT TO SCALE)
5							0 - 16' Light gray, weathered and fragmented bedrock with a minor sand component. Material recovered as a mixture of angular rock fragments and medium- to coarse-grained sand, suggesting in-place mechanical breakdown of the upper bedrock surface. Likely represents a transition zone between overburden and underlying schist bedrock. No competent core fragments recovered. Dry.	
10								
15								
20							16 - 85' Light gray to tan, highly weathered schist; fine- to medium-grained; recovered as extremely friable cuttings with no competent fragments. Mica is present throughout, giving portions of the sample a platy texture and subtle sheen. Trace pyrite observed in select cuttings, appearing as fine disseminated grains. Rock is inferred to be schistose, though foliation could not be confirmed due to sample disaggregation and the drilling method.	
25								
30								
35							23.5' Subhorizontal fracture was encountered. No staining or mineral precipitate was observed. The fracture yielded an estimated 3 gallons per minute of groundwater during air rotary drilling.	
40								
45								
50								
55								
60								
65								
70							71.6' A narrow, clean fracture was encountered. The feature did not produce a notable increase in groundwater yield, though overall airlift recovery increased slightly from approximately 3 to 5 gallons per minute, likely reflecting cumulative flow from this and the previously identified fracture at 23.5 feet. No staining or mineral precipitate was observed. The fracture appeared less open than the shallower feature and may represent a more restricted flow path	
75								
80								
85							Drilling terminated at 85' BGS.	
90								
95								
100								

GRANULAR SOILS (N-Values)	COHESIVE SOILS (N-Values)	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	2. U denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff	5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard	6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

Lithology logged from drill cuttings.

FRONTIER GEOSERVICES

PROJECT

Gordon Services - Keene Pit

21 Route 9, Keene & Sullivan, New Hampshire

BORING NO.	BRW-11
SHEET	1 of 1
FILE NO.	2024012
CHKD. BY	JFB

Boring Co.	Geosearch Environmental Contractors	Boring Location	See Boring Location Plan		
Driller	Michael DeAmicis	Ground Surface El.	881 FT AMSL	Datum	NAD83
Logged By	JFB	Date Start	7/15/2025	Date End	7/16/2025

Sampler Type:	Logged from cuttings
Sampler Size:	N/A
Type Drill Rig:	Deidrich D-50 - Track Mounted
Drilling Method:	Hollow Stem Auger/3-inch Air Hammer/ Air Roller

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
7/22/2025	9:20:00 AM	46.34' BGS	838.84	~7 days
8/5/2025	10:15:00 AM	48.11' BGS	837.08	~3 weeks

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	WELL CONSTRUCTION DETAILS (NOT TO SCALE)
5							0 - 18' Light gray, weathered and fragmented bedrock with a minor sand component. Material recovered as a mixture of angular rock fragments and medium- to coarse-grained sand, suggesting in-place mechanical breakdown of the upper bedrock surface. Likely represents a transition zone between overburden and underlying schist bedrock. No competent core fragments recovered. Dry.	
10								
15								
20							18 - 48' Light gray to tan, highly weathered schist; fine- to medium-grained; recovered as extremely friable cuttings with no competent fragments. Mica is present throughout, giving portions of the sample a platy texture and subtle sheen. Trace pyrite observed in select cuttings, appearing as fine disseminated grains. Rock is inferred to be schistose, though foliation could not be confirmed due to sample disaggregation and the drilling method.	
25								
30								
35								
40								
45								
50							48' Sand- and silt-filled fracture was encountered. The feature yielded less than 1 gallon per minute of groundwater during air rotary drilling, suggesting limited connectivity or permeability. The fine-grained infill and lack of competent rock fragments indicate in-situ weathering or infilling of a structural void. The formation was fragile at this depth, and drilling conditions deteriorated, prompting a change in method from air rotary to air roller at 51 feet bgs.	
55								
60								
65								
70							51 - 85' Light gray, extremely weak and poorly consolidated schist, exhibiting even lower competency than the overlying material. Due to the fragile nature of the formation and persistent fragmentation, drilling was switched from air rotary to air roller at 51 feet. Cuttings contained abundant mica and minor pyrite, consistent with the schistose material observed at shallower depths.	
75								
80								
85							Drilling terminated at 85' BGS.	
90								
95								
100								

GRANULAR SOILS (N-Values)	COHESIVE SOILS (N-Values)	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	2. U denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff	5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard	6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

Lithology logged from drill cuttings.

FRONTIER GEOSERVICES

PROJECT

Gordon Services - Keene Pit

21 Route 9, Keene & Sullivan, New Hampshire

BORING NO.	BRW-12
SHEET	1 of 1
FILE NO.	2024012
CHKD. BY	JFB

Boring Co.	Geosearch Environmental Contractors	Boring Location	See Boring Location Plan		
Driller	Michael DeAmicis	Ground Surface El.	883 FT AMSL	Datum	NAD83
Logged By	JFB	Date Start	7/16/2025	Date End	7/17/2025

Sampler Type:	Logged from cuttings
Sampler Size:	N/A
Type Drill Rig:	Deidrich D-50 - Track Mounted
Drilling Method:	Hollow Stem Auger/3-inch Air Roller

Groundwater Readings (from ground surface)

Date	Time	Depth	Elev.	Stabilization Time
7/22/2025	9:25:00 AM	54.60' BGS	832.14	~5 days
8/5/2025	10:20:00 AM	57.64' BGS	829.1	~3 weeks

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	PEN/REC (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	PID ppmv	SAMPLE DESCRIPTION	WELL CONSTRUCTION DETAILS (NOT TO SCALE)
5							0 - 9' Light gray, highly weathered schist; fine- to medium-grained. Material is more competent than that encountered in other borings, with limited structural integrity but sufficient cohesion to behave as bedrock during drilling. No distinct contact was observed between overburden and competent bedrock, indicating a gradational transition. Schistose character is inferred from mica content and subtle platy textures in cuttings. Small competent fragments were recovered, suggesting residual bedrock structure remains intact in portions of this interval.	
10								
15								
20							9 - 78' Light gray to tan, highly weathered schist; fine- to medium-grained. Material was recovered as extremely friable cuttings with no competent fragments. Mica is present throughout, imparting a subtle sheen and platy texture to portions of the sample. Trace pyrite observed in select cuttings as fine disseminated grains. Rock is inferred to be schistose; however, foliation could not be confirmed due to sample disaggregation and the limitations of the drilling method.	
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80							78 - 90' Tan, moist, hard, competent fine- to medium-grained, mica-rich schist; cuttings produced by air roller drilling appeared as fine to medium sand; material exhibited high mica content, imparting a silvery sheen to cuttings. Abrupt contact encountered at top of unit.	
85								
90								
95							Drilling terminated at 90' BGS.	
100								

GRANULAR SOILS (N-Values)	COHESIVE SOILS (N-Values)	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	1. S denotes split-barrel sampler.	7. PID denotes Photoionization Detector
5 to 10 - Loose	3 to 4 - Soft	2. U denotes 3-inch O.D. undisturbed sample.	8. PPM denotes parts per million.
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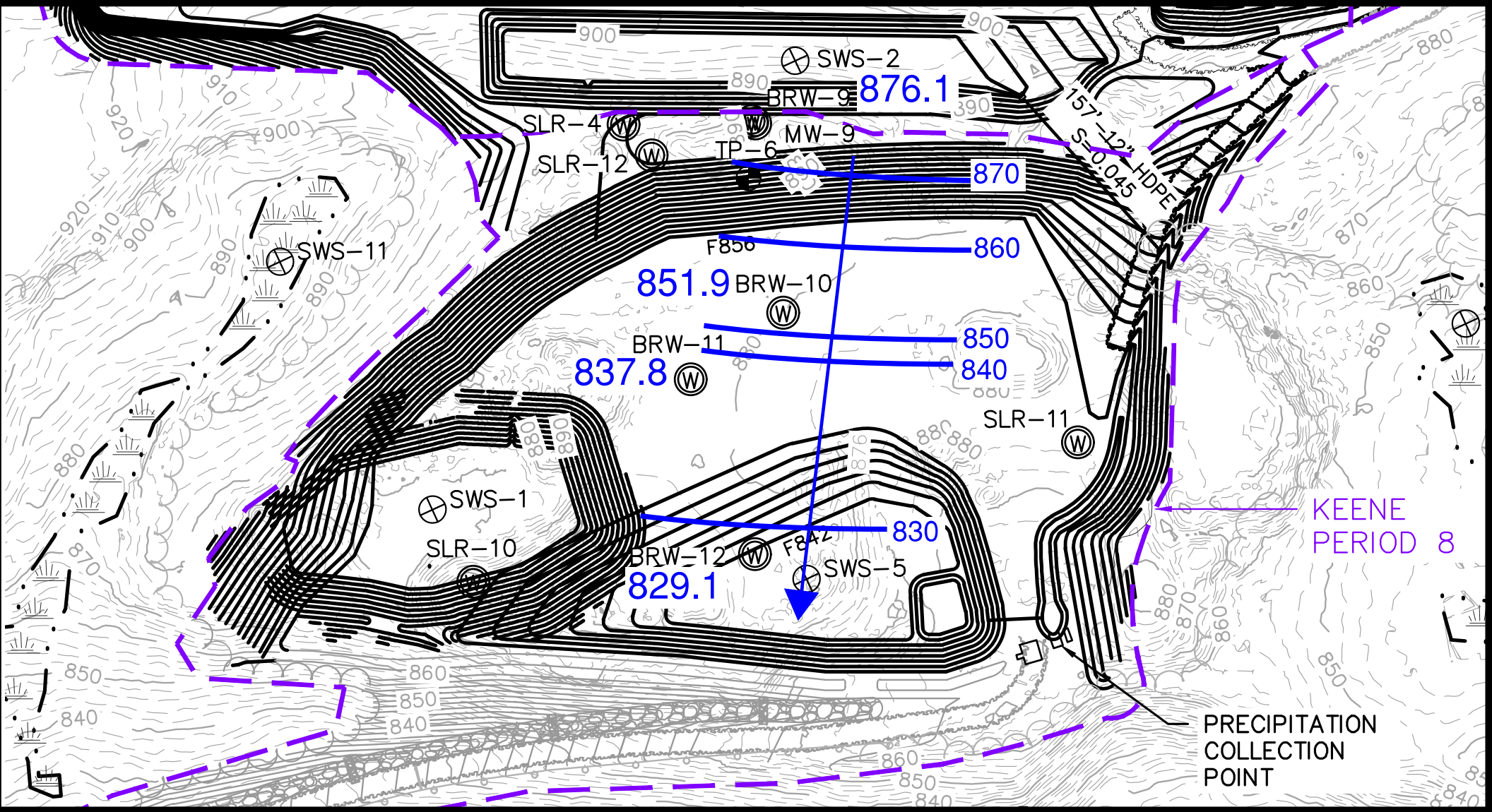
Over 50 - Very Dense	16 to 30 - Very Stiff	5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard	6. SPT denotes Standard Penetration Test.	12. R denotes core run number.

Lithology logged from drill cuttings.

Attachment C
Groundwater Elevation Table

Well ID	Well Type	GSE (ft AMSL)	DTW (ft bgs)	Water Elev. (ft AMSL)	Notes
MW-1	Overburden	950	Dry		No water observed
MW-2	Overburden	944	0.25	943.75	Trace water observed (<3")
MW-3	Overburden	1052	Dry		Dry
MW-4	Overburden	1103	Dry		Dry
MW-5	Overburden	1112	Dry		Dry
MW-9	Overburden	884	Dry		No water observed
BRW-1	Bedrock	950	Dry		Dry
BRW-2	Bedrock	944	Dry		Dry
BRW-3	Bedrock	1052	Dry		Dry
BRW-4	Bedrock	1103	Dry		Dry
BRW-5	Bedrock	1112	Dry		Dry
BRW-6	Bedrock	1192	Dry		Dry
BRW-7	Bedrock	1182	2.78	1179.22	Shallow fracture at 5' BGS; only BRW well with water
BRW-8	Bedrock	1182	Dry		Fracture at 9' BGS; previously produced water but dry on this date
BRW-9	Bedrock	884	9.44	877.37	Fracture flow at 23.5 ft
BRW-10	Bedrock	880	34.41	845.59	Fractures at 23.5 ft & 71.6 ft
BRW-11	Bedrock	881	46.34	834.66	Trace yield at 48 ft
BRW-12	Bedrock	883	54.6	828.4	No flow noted

Attachment D
Groundwater Flow Direction Map



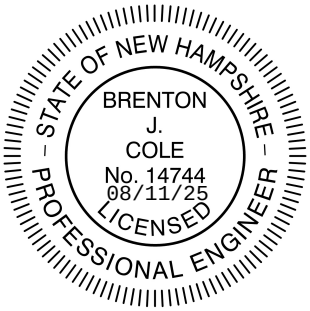
Attachment D
Groundwater Flow Map
Gordon Service - Keene Pit

*Note limited groundwater elevation data, flow direction is partially inferred from topography

North

FRONTIER GEOSERVICES

STORMWATER MANAGEMENT REPORT



GRANITE ENGINEERING

civil engineering ● land planning ● municipal services

GORDON SERVICES - KEENE

Keene: Map 215; Lots 7 & 8
Sullivan: Map 5; Lots 46 & 46-1
57 Route 9
Keene & Sullivan, New Hampshire
January 22, 2025
Revised: July 9, 2025

PREPARED FOR:
G2 HOLDINGS, LLC
250 NORTH STREET
JAFFREY, NH 03452

PREPARED BY:
GRANITE ENGINEERING, LLC
150 DOW STREET, TOWER 2, SUITE 421
MANCHESTER, NH 03101
603.518.8030

GE Project No. 23-0201-1

I. INTRODUCTION

A. Project Description

The subject properties propose the expansion of an existing gravel and earth removal operation for G2 Holdings, LLC. The properties are located at 57 Route 9 in Keene and Sullivan, New Hampshire. The majority of the site is located within the Keene R (Rural) Zoning District. A proposed gravel road will be constructed to access various points on the site. Stormwater runoff will be managed through a series of sediment basins that connect to an existing infiltration pond.

B. Existing Site Conditions

Keene Tax Map 215 Lot 7 is approximately 78.4 acres in area. Keene Tax Map 215 Lot 8 is approximately 23.1 acres in area. Sullivan Tax Map 5 Lot 46 is approximately 169.0 acres in area. Tax map 5 Lot 46-1 is approximately 28.1 acres in area. The total area of all four subject properties is therefore 298.6 acres in area. The property is currently developed with a gravel removal operation. There are wetlands on the properties to the north and east. There is an existing, previously permitted, stormwater basin located to the south of the property, closest to Route 9.

According to the Site Specific Soil Survey, the predominant onsite soil types are Sunapee, Tunbridge Lyman Rock Outcrop, and Lyman.

Please refer to sections three (3) and eight (8) of this stormwater report for project specific NRCS soils and SSSS report information.

II. STORM DRAINAGE ANALYSIS & DESIGN

A. Methodology

The purpose of this analysis was to determine if the proposed sediment ponds could capture, detain, and release the stormwater flows through small, controlled, outlet pipes to both the existing infiltration area located currently on-site, as well as the proposed infiltration area to be completed during the final phase of the project (Period 8).

In accordance with generally accepted engineering practice, the 2-year, 10-year, 25-year, 50-year and 100-year frequency storm has been used in the various aspects of analysis and design of stormwater management considerations for the subject site. Stormwater-treatment provisions and all drainage facilities have been designed to be fully functional during a 50-year return frequency storm.

In appreciation of the benefits and limitations related to each of the various methods available to design professionals for estimating peak stormwater discharge rates for use in analysis and design, the TR-20 computer model was used. Values for Time of Concentration used in the analysis were estimated using the methodology contained within USDA-S.C.S. publication Urban Hydrology for Small Watersheds Technical Release No. 55 (TR 55).

All proposed stormwater inlet structures were designed to remain under inlet control throughout a design storm of the return frequency noted. Outlet protection for each discharging culvert was designed in accordance with the methodology for the "best management practice", in accordance with a publication entitled New Hampshire Stormwater Manual Volume 2: Post-Construction Best Management Practices Selection and Design. In addition, this publication served as the primary reference for the numerous temporary and permanent erosion control methods incorporated into the design of this project.

All design and analysis calculations performed using the referenced methodologies are attached to this report. The minimum time of concentrations used for the analysis is 6 minutes. These calculations document each catchment area, a breakdown of surface type, time of concentration, rainfall intensity, peak discharge volume, Manning's "n" value, peak velocity, and other descriptive design data for each watershed and pipe segment evaluated. In addition, the "Post Development Drainage Area Plans" graphically define and illustrate the extent of each watershed or catchment area investigated.

B. Post-Development Drainage Conditions

In order to evaluate the impact of the proposed development, two (2) Point of Analysis (POA) was analyzed to demonstrate that the peak rates of runoff would not increase from the site improvements.

The first POA, Link A, is located in the wetlands adjacent to Route 9 and directly south of the proposed project area. Within the wetlands, there is an 18" culvert directing runoff to the southern side of Route 9. This culvert has been shown on DOT Reference plans.

The second POA, Link B, is located in the wetlands directly to the east of the project area. Within the wetlands, there is an box culvert directing runoff to the southern side of Route 9.

Pre-development peak rates of discharge are identified in Table 2. Further explanation of the post-condition hydrology will show a net decrease to the point of analysis.

For a more visual description of the information presented in this section, please refer to the attached “Pre-Development Drainage Areas Plan” attached in the appendix of this report.

The analysis for the development of the site is broken into two segments, Interim and Final. “Interim Development” is in reference to the development of the site from Period 1 through Period 7. Once Period 7 is completed, the project will proceed with Period 8. In this Period, there is an additional excavation in the area of Period 1. For the construction of Period 8, this is viewed as the “Final Development”.

Stormwater from within the project area is managed by multiple sediment basins/detention ponds around each work area. These detention ponds are represented in the HydroCAD model and are denoted as SF 5, SF6, and SF7. The intent of the grading of the pit areas, as well as the haul roads, was to keep the stormwater self-contained, with no runoff during a 50-year, 24-hour storm event.

Within the HydroCAD Model, all significant grading for the excavation pits and detention basins was assigned as a grass surface and a hydrologic soil group ‘D’.

The detention basins mentioned above are designed to withhold and slowly discharge stormwater runoff to the infiltration basins near the lower portion of the project. During the project, in Period 1, the Infiltration Basin SF1 will be constructed to handle the runoff from the project site and infiltrate into the soil. Once Period 7 is completed, the project will move forward with Period 8. In this Period, Infiltration Basin SF8 will be constructed and will observe the runoff that originally was directed to SF1.

The proposed infiltration area was designed to use exfiltration though the native soils as its only means of outlet. Infiltration rates for the infiltration ponds were calculated by the default method as set forth in Env-Wq 1054.14. The practice is located in an area identified in the Soil Series Survey as Berkshire, Fine Sandy Loam Soils. Using Ksat values for New Hampshire Soils, Soil Scientists of Northern New England, Special Publications No. 5, September 2009, the lowest value associated with Berkshire soils is 0.6 inches per hour. Using a safety factor of 2, the infiltration rate utilized in the drainage analysis is 0.3 inches per hour.

Test pit data performed by TF Moran were used to determine the floor elevation of the pond, keeping it above the estimated seasonal high-water table.

The results of the drainage analysis determined that the stormwater was infiltrated in its entirety during a 50-year, 24-hour storm event. The self-

contained 50-year storm event for both the Interim and Final Development of the project. This was done through capturing stormwater in large sediment basins with small, controlled outlet devices to release stormwater in a controlled manner and by directing stormwater to the infiltration area.

During the 100-yr, 24-hour storm event, both the Interim and Final Development of the project provide a decrease in peak flow rate that discharge to the two points of analysis.

For a more visual description of the information presented in this section, please refer to the attached "Post-Development Drainage Areas Plan" attached in the appendix of this report.

All of these ponds provide adequate storage to offset the peak rates of runoff for the design storms. The detailed hydrologic and hydraulic relationship of each sub-catchment is described within the HydroCAD stormwater modeling, also contained in the appendix of this report.

The peak stormwater runoff rate for the specific storm frequency is presented and analyzed in the subsequent summary section of this report, for the point of analysis (Table 1).

C. Summary:

TABLE 1: CHANNEL PROTECTION REQUIREMENTS

Site Pre-Development vs. Post-Development (Storm Volume in Acre-Feet)			
Analysis Point	2-Year		
	Pre	Interim	Post
A	**1.011**	0.795	0.795
B	**5.037**	3.902	3.902

TABLE 2: PEAK RUNOFF (ENV-WQ 1507.06)

Site Pre-Development vs. Post-Development (Peak Discharge Rate in cfs)									
Analysis Point	2-Year			10-Year			25-Year		
	Pre	Interim	Post	**Pre**	Interim	Post	**Pre**	Interim	Post
A	**4.07**	3.47	3.47	**11.06**	8.71	8.71	**17.43**	13.39	13.39
B	**19.72**	15.86	15.86	**61.33**	46.94	46.94	**101.14**	76.24	76.24

Site Pre-Development vs. Post-Development (Peak Discharge Rate in cfs)						
Analysis Point	50-Year			100-Year		
	Pre	Interim	Post	**Pre**	Interim	Post
A	**23.78**	17.98	17.98	**31.70**	23.63	23.63
B	**141.45**	105.66	105.66	**192.17**	142.52	142.52

TABLE 3: PEAK STORMWATER POND ELEVATION

Site Post Development (Peak Pond Elevation)				
Description	**50-Year**		**100-Year**	
	Post - Interim	Final	Post - Interim	Final
Stormwater Basin Berm Elevation	874.00	856.00	874.00	856.00
Peak Water Elevation	873.04	854.40	873.66	855.32

III. EROSION & SEDIMENTATION CONTROL PROVISIONS

A. Temporary Erosion Control Measures

Temporary erosion and sediment control measures are indicated on the design plans, construction details, general notes and within the drainage report. Although not integral with this stormwater report, due to the size of the proposed development both temporary and permanent erosion control measures will also be specified within the project's Stormwater Pollution Prevention Plan (SWPPP). All erosion control measures specified are designed to reduce or eliminate potential soil migration and water quality degradation, both during and after the construction period.

The following temporary erosion control measures will be implemented;

- Silt Fence and/or Silt Logs
- Erosion Control Blankets on slopes 3:1 and steeper
- Riprap Aprons & Spillway Stabilization
- Turf Establishment - Hydroseeding with mulch and tackifiers
- Stone Check Dams
- Temporary Sediment Basins

These temporary erosion control measures are also discussed in the projects. Operation and Maintenance plan contained in the appendices of this report.

In addition to the above-listed erosion control measures, references are made throughout the project documents to the New Hampshire Stormwater Manual; Volume 3: Erosion and Sediment Temporary Controls During Construction for additional measures, as necessary.

B. Construction Sequence

A site-specific construction sequence sensitive to limiting soil loss due to erosion and associated water quality degradation was prepared specifically for this project and is shown on the project plans. As pointed out in the erosion control notes, it is important for the contractor to recognize that proper judgment in the implementation of work will be essential if erosion is to be limited and protection of completed work is to be realized. Moreover, any specific changes in sequence and/or field conditions affecting the ability of specific erosion control measures to adequately serve their intended purpose should be reported to this office by the contractor. Furthermore, the contractor is encouraged to supplement specified erosion control measures during the construction period where and when in his/ her best judgment, additional protection is warranted.

C. Permanent Erosion Control Measures

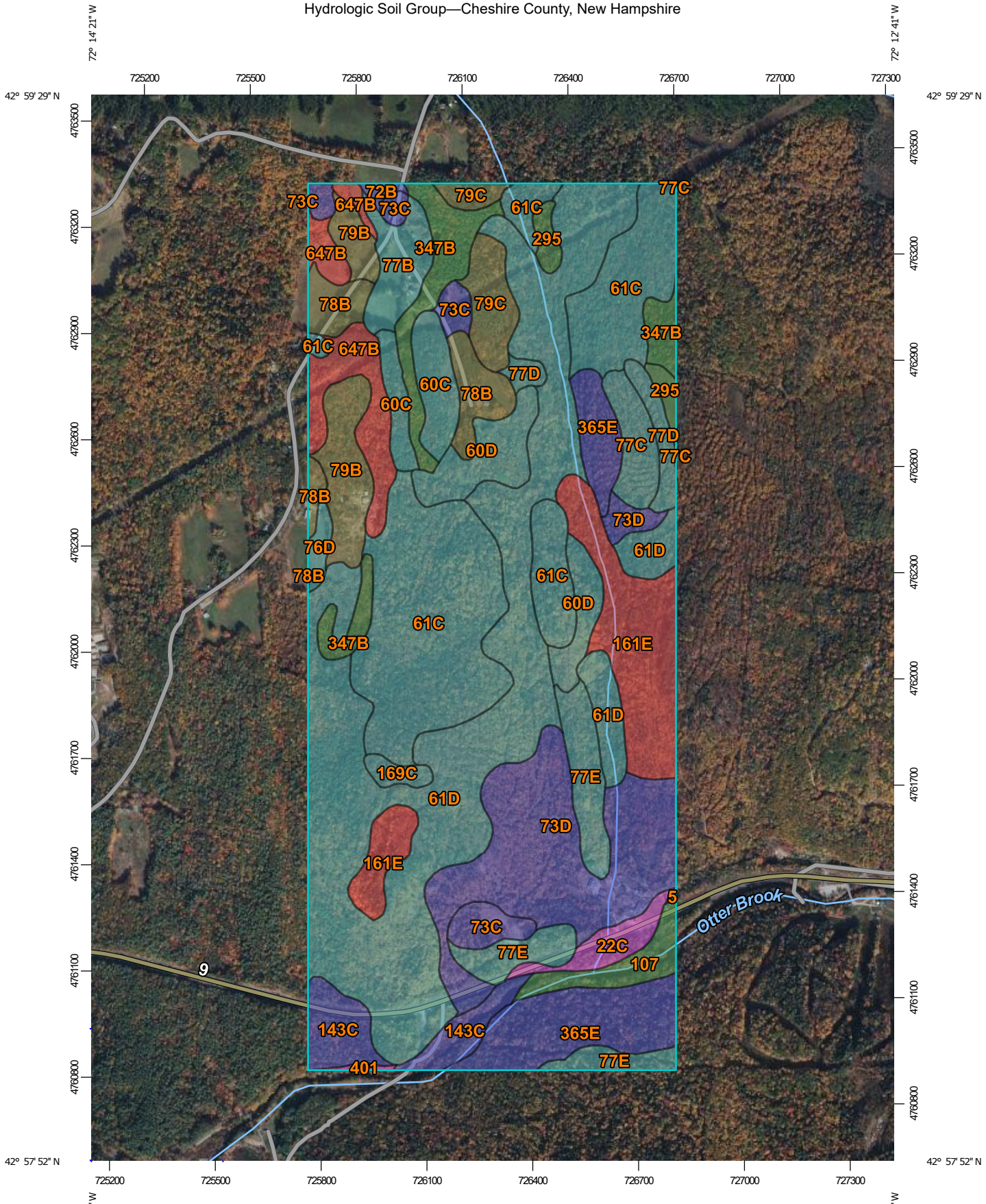
Similar to temporary erosion control measures, all permanent erosion control measures are indicated on the design plans, construction details, general notes, drainage report, SWPPP and O & M project documents.

The following permanent erosion control measures will be implemented;

- Stone-lined ditches
- Inlet & Outlet Protection - Riprap Stabilization
- Stormwater Basins with multi-stage outlets
- Turf Establishment - Hydroseeding with mulch and tackifiers

Each of the above-mentioned permanent erosion control measures are designed in a project-specific manner within both state and local regulatory compliance standards.

3. WEB SOIL SURVEY


72° 14' 21" W
72° 12' 41" W
42° 59' 29" N
42° 57' 52" N
725200
725500
725800
726100
726400
726700
727000
727300
4763500
4763200
4762900
4762600
4762300
4762000
4761700
4761400
4761100
4760800
73C
72B
647B
79C
61C
77C
79B
295
347B
77B
78B
365E
77D
60C
60D
169C
161E
143C
401
22C
107
5
9
Otter Brook
Map Scale: 1:14,700 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 200 400 800 1200
Feet
0 500 1000 2000 3000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	HYDROLOGIC SOIL GROUP
168	SUNAPEE	B
61	TUNBRIDGE LYMAN ROCK OUTCROP	C
92	LYMAN	D

SLOPE PHASE: 0–8%=B, 8–15%=C, 15–25%=D, 25%+=E

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOILS SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, PRODUCED BY A CERTIFIED SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCE CONSERVATION SERVICE. THERE IS A NARRATIVE REPORT THAT ACCOMPANIES THIS MAP AND MAP KEY.

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION AND TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP. THE SITE SPECIFIC SURVEY (SSSS) WAS PRODUCED JULY 15, 2024 AND WAS PREPARED BY LUKE HURLEY, CSS #095. SOILS WERE IDENTIFIED WITH THE NEW HAMPSHIRE STATE-WIDE NUMERICAL SOILS LEGEND, USDA NRCS, DURHAM, NH. ISSUE #10, JANUARY 2011. THE NUMERIC LEGEND WAS AMENDED TO IDENTIFY THE CORRECT SOILS COMPONENTS OF THE COMPLEX. HYDROLOGIC SOIL GROUP FROM KSAT VALUES FOR NEW HAMPSHIRE SOILS, SOCIETY OF SOIL SCIENTISTS OF NEW ENGLAND, SPECIAL PUBLICATION NO.5, SEPTEMBER, 2009

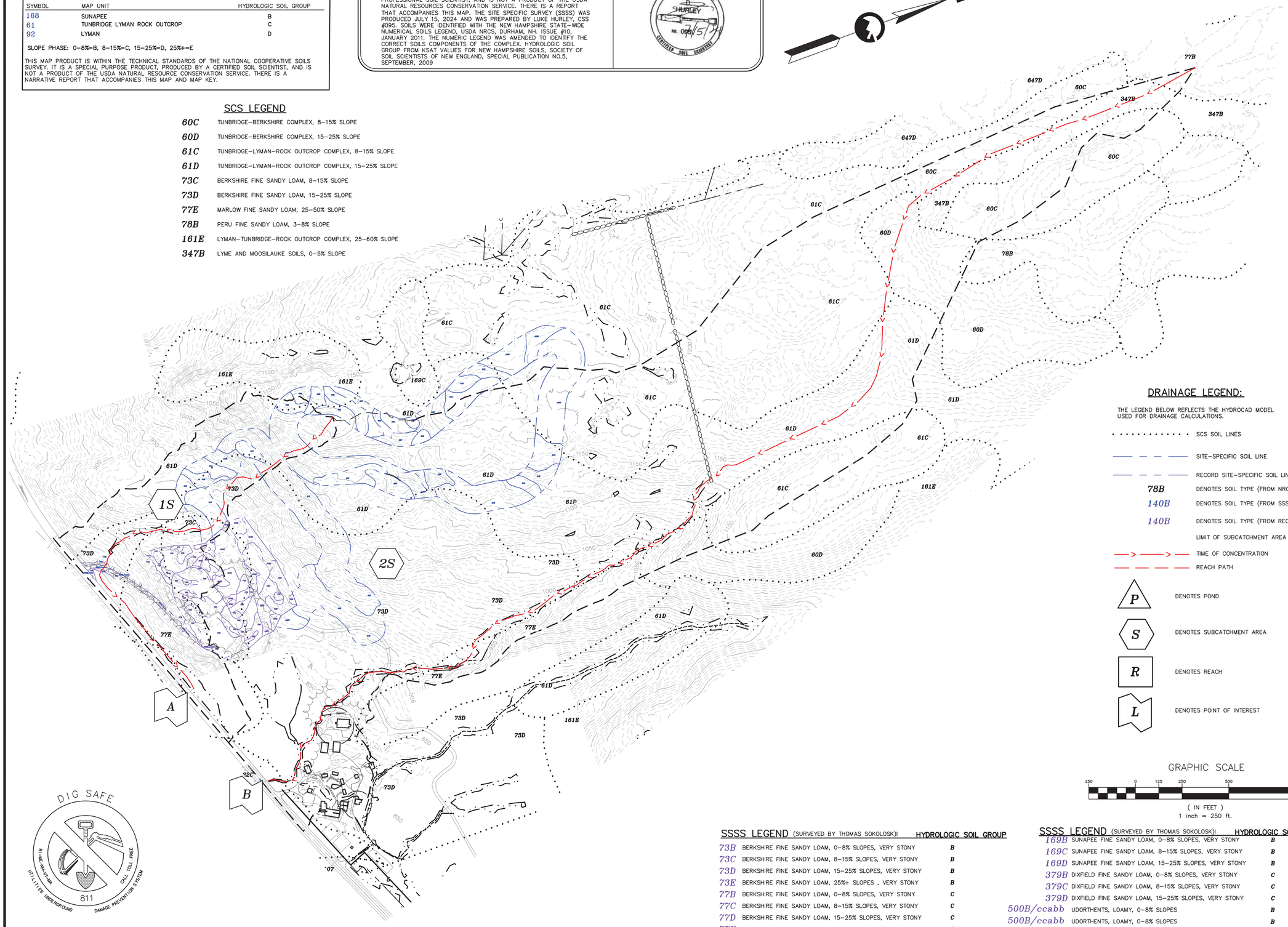
STATE OF NEW HAMPSHIRE – LUKE D HURLEY – NO. 095 – 7/15 – CERTIFIED SOIL SCIENTIST

NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE VARIOUS STORMWATER SUBCATCHMENT AREAS, CORRESPONDING TIMES OF CONCENTRATION, PONDS, AND REACHES ASSOCIATED WITH THE SUBJECT PARCEL PRE-DEVELOPMENT.

SCS LEGEND

60C	TUNBRIDGE–BERKSHIRE COMPLEX, 8–15% SLOPE
60D	TUNBRIDGE–BERKSHIRE COMPLEX, 15–25% SLOPE
61C	TUNBRIDGE–LYMAN–ROCK OUTCROP COMPLEX, 8–15% SLOPE
61D	TUNBRIDGE–LYMAN–ROCK OUTCROP COMPLEX, 15–25% SLOPE
73C	BERKSHIRE FINE SANDY LOAM, 8–15% SLOPE
73D	BERKSHIRE FINE SANDY LOAM, 15–25% SLOPE
77E	MARLOW FINE SANDY LOAM, 25–50% SLOPE
78B	PERU FINE SANDY LOAM, 3–8% SLOPE
161E	LYMAN–TUNBRIDGE–ROCK OUTCROP COMPLEX, 25–60% SLOPE
347B	LYME AND MOOSILAUKE SOILS, 0–5% SLOPE



DRAINAGE LEGEND:

THE LEGEND BELOW REFLECTS THE HYDROCAD MODEL USED FOR DRAINAGE CALCULATIONS.

- SCS SOIL LINES
- SITE–SPECIFIC SOIL LINE
- RECORD SITE–SPECIFIC SOIL LINE
- 78B — DENOTES SOIL TYPE (FROM NRCS)
- 140B — DENOTES SOIL TYPE (FROM SSSS)
- 140B — DENOTES SOIL TYPE (FROM RECORD SSSS)
- LIMIT OF SUBCATCHMENT AREA
- TIME OF CONCENTRATION
- REACH PATH
- P — DENOTES POND
- S — DENOTES SUBCATCHMENT AREA
- R — DENOTES REACH
- L — DENOTES POINT OF INTEREST

GRAPHIC SCALE

250 0 125 250 500 1,000

(IN FEET)
1 inch = 250 ft.

DIG SAFE – CALL TOLL FREE 811 – IT'S THE LAW!!! – UTILITIES UNDERGROUND – DAMAGE PREVENTION SYSTEM

SSSS LEGEND (SURVEYED BY THOMAS SOKOLOSK)I

		HYDROLOGIC SOIL GROUP
73B	BERKSHIRE FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	B
73C	BERKSHIRE FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	B
73D	BERKSHIRE FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	B
73E	BERKSHIRE FINE SANDY LOAM, 25%+ SLOPES , VERY STONY	B
77B	BERKSHIRE FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	C
77C	BERKSHIRE FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	C
77D	BERKSHIRE FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	C
77E	BERKSHIRE FINE SANDY LOAM, 25%+ SLOPES, VERY STONY	C

SSSS LEGEND (SURVEYED BY THOMAS SOKOLOSK)I

		HYDROLOGIC SOIL GROUP
169B	SUNAPEE FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	B
169C	SUNAPEE FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	B
169D	SUNAPEE FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	B
379B	DIXFIELD FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	C
379C	DIXFIELD FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	C
379D	DIXFIELD FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	C
500B/ccabb	UDORTHENTS, LOAMY, 0–8% SLOPES	B
500B/ccabb	UDORTHENTS, LOAMY, 0–8% SLOPES	B
500B/ccabb	URBAN LAND, 8–15% SLOPES	B

GRANITE ENGINEERING
civil engineering
land planning
municipal services

REVISIONS

No.	DATE	COMMENTS	BY
1	12/20/24	PROJECT SUBMITTAL	JD
2	2/3/25	REVISED PER CITY COMMENTS	JD
3	5/9/25	REVISED PER CITY COMMENTS	JD
4	7/9/25	REVISED PER CITY COMMENTS	JD

OWNER/APPLICANT:
62 HOLDINGS, LLC
250 NORTH STREET
JAFFREY, NH 03452

GRANITE ENGINEERING
civil engineering • land planning • municipal services
150 Dow Street, Tower 2, Suite 421
Manchester,
New Hampshire 03101
603.518.8030
www.GraniteEng.com

STAMP:

STATE OF NEW HAMPSHIRE – BRENTON J COLE – NO. 14754 – 7/9/25 – LICENSED PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
PRE-DEVELOPMENT DRAIN AREAS PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=250'
SHEET:	1 OF 5	

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	HYDROLOGIC SOIL GROUP
168	SUNAPEE	B
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92	LYMAN	D

SLOPE PHASE: 0–8%=B, 8–15%=C, 15–25%=D, 25%+=E

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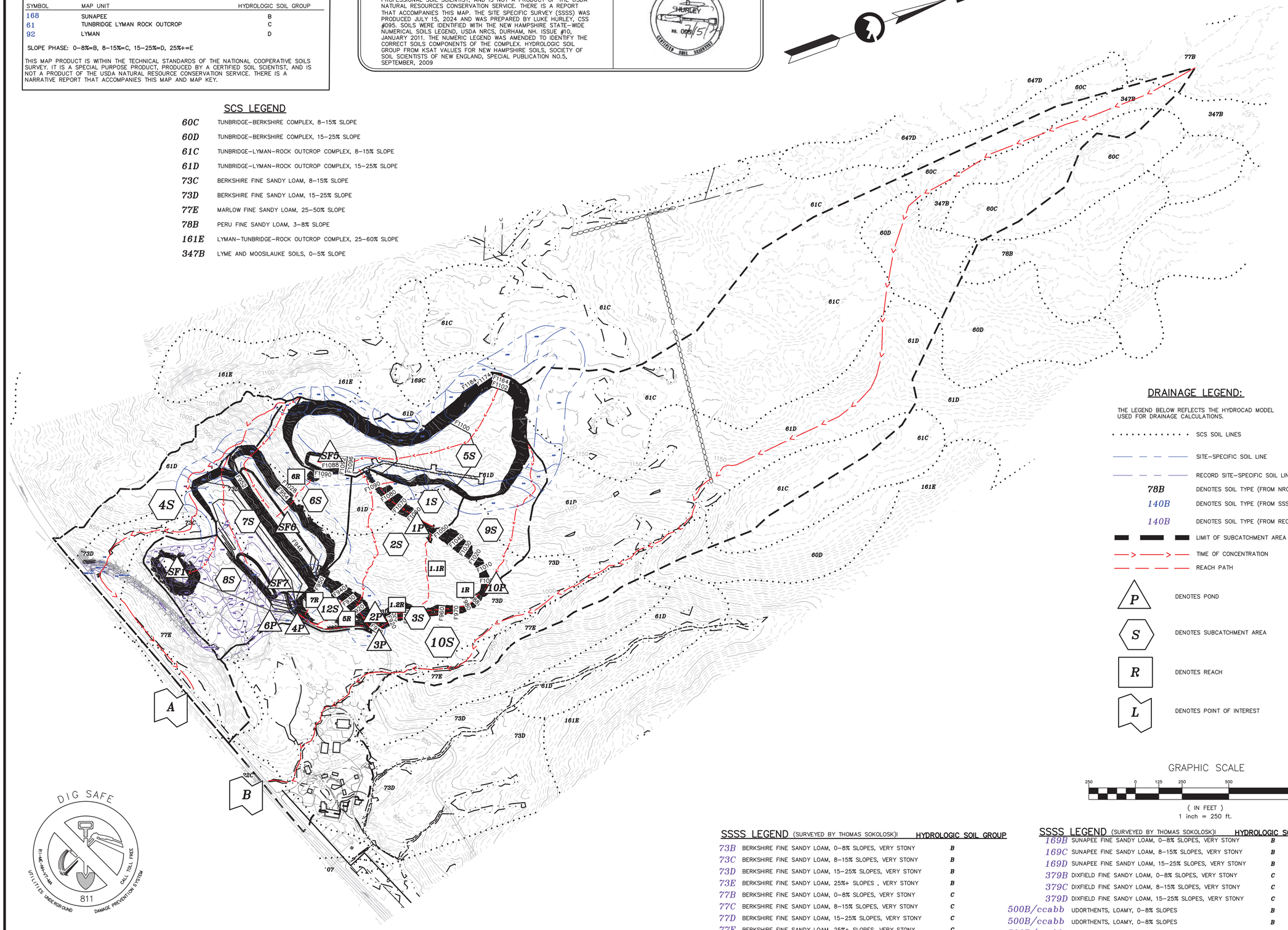
STATE OF NEW HAMPSHIRE · LUKE D HURLEY · NO. 095 · CERTIFIED SOIL SCIENTIST

NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE VARIOUS STORMWATER SUBCATCHMENT AREAS, CORRESPONDING TIMES OF CONCENTRATION, PONDS, AND REACHES ASSOCIATED WITH THE SUBJECT PARCEL POST-DEVELOPMENT.

SCS LEGEND

60C	TUNBRIDGE–BERKSHIRE COMPLEX, 8–15% SLOPE
60D	TUNBRIDGE–BERKSHIRE COMPLEX, 15–25% SLOPE
61C	TUNBRIDGE–LYMAN–ROCK OUTCROP COMPLEX, 8–15% SLOPE
61D	TUNBRIDGE–LYMAN–ROCK OUTCROP COMPLEX, 15–25% SLOPE
73C	BERKSHIRE FINE SANDY LOAM, 8–15% SLOPE
73D	BERKSHIRE FINE SANDY LOAM, 15–25% SLOPE
77E	MARLOW FINE SANDY LOAM, 25–50% SLOPE
78B	PERU FINE SANDY LOAM, 3–8% SLOPE
161E	LYMAN–TUNBRIDGE–ROCK OUTCROP COMPLEX, 25–60% SLOPE
347B	LYME AND MOOSILAUKE SOILS, 0–5% SLOPE



DRAINAGE LEGEND:

THE LEGEND BELOW REFLECTS THE HYDROCAD MODEL USED FOR DRAINAGE CALCULATIONS.

- SCS SOIL LINES
- SITE–SPECIFIC SOIL LINE
- RECORD SITE–SPECIFIC SOIL LINE
- 78B — DENOTES SOIL TYPE (FROM NRCS)
- 140B — DENOTES SOIL TYPE (FROM SSSS)
- 140B — DENOTES SOIL TYPE (FROM RECORD SSSS)
- LIMIT OF SUBCATCHMENT AREA
- TIME OF CONCENTRATION
- REACH PATH
- P — DENOTES POND
- S — DENOTES SUBCATCHMENT AREA
- R — DENOTES REACH
- L — DENOTES POINT OF INTEREST

GRAPHIC SCALE

250 0 125 250 500 1,000

(IN FEET)
1 inch = 250 ft.

SSSS LEGEND (SURVEYED BY THOMAS SOKOLOSK)I

		HYDROLOGIC SOIL GROUP
73B	BERKSHIRE FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	B
73C	BERKSHIRE FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	B
73D	BERKSHIRE FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	B
73E	BERKSHIRE FINE SANDY LOAM, 25%+ SLOPES , VERY STONY	B
77B	BERKSHIRE FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	C
77C	BERKSHIRE FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	C
77D	BERKSHIRE FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	C
77E	BERKSHIRE FINE SANDY LOAM, 25%+ SLOPES, VERY STONY	C

SSSS LEGEND (SURVEYED BY THOMAS SOKOLOSK)I

		HYDROLOGIC SOIL GROUP
169B	SUNAPEE FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	B
169C	SUNAPEE FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	B
169D	SUNAPEE FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	B
379B	DIXFIELD FINE SANDY LOAM, 0–8% SLOPES, VERY STONY	C
379C	DIXFIELD FINE SANDY LOAM, 8–15% SLOPES, VERY STONY	C
379D	DIXFIELD FINE SANDY LOAM, 15–25% SLOPES, VERY STONY	C
500B/ccabb	UDORTHENTS, LOAMY, 0–8% SLOPES	B
500B/ccabb	UDORTHENTS, LOAMY, 0–8% SLOPES	B
500B/ccabb	URBAN LAND, 8–15% SLOPES	B

DIG SAFE — DIAL 811 — CALL TOLL FREE — UTILITIES UNDERGROUND — DAMAGE PREVENTION SYSTEM

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No.	DATE	COMMENTS	BY
1	12/20/24	PROJECT SUBMITTAL	JD
2	2/3/25	REVISED PER CITY COMMENTS	JD
3	5/9/25	REVISED PER CITY COMMENTS	JD
4	7/9/25	REVISED PER CITY COMMENTS	JD
5	7/24/25	ADDITIONAL WELL LOCATIONS	JD
6	8/11/25	REVISED PER CITY COMMENTS	JD

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62 HOLDINGS, LLC
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STAMP:

STATE OF NEW HAMPSHIRE · BRENTON J COLE · NO. 14754 · 7/9/25 · LICENSED PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
INTERIM POST-DEVELOPMENT DRAIN AREAS PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=250'
SHEET:	2 OF 5	

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	HYDROLOGIC SOIL GROUP
168	SUNAPEE	B
61	TUNBRIDGE LYMAN ROCK OUTCROP	C
92	LYMAN	D

SLOPE PHASE: 0–8%=B, 8–15%=C, 15–25%=D, 25%+=E

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STATE OF NEW HAMPSHIRE — LUKE D HURLEY — NO. 095 — CERTIFIED SOIL SCIENTIST

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- TIME OF CONCENTRATION
- REACH PATH
- P — DENOTES POND
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- R — DENOTES REACH
- L — DENOTES POINT OF INTEREST

SCS LEGEND

61D	TUNBRIDGE–LYMAN–ROCK OUTCROP COMPLEX, 8–15% SLOPE
73C	BERKSHIRE FINE SANDY LOAM, 8–15% SLOPE
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77E	MARLOW FINE SANDY LOAM, 25–50% SLOPE

NOTES:

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N

MAP 5 LOT 46
169.0± AC

MAP 215 LOT 7
78.4± AC

MAP 5 LOT 46-1
28.1± AC

TEMPORARY SEDIMENT BASIN TO BE CONSTRUCTED DURING PERIOD 1

CLOSED DRAINAGE SYSTEM CONSTRUCTED DURING PERIOD 1

DIG SAFE — CALL TOLL FREE 811 — UTILITIES UNDERGROUND — DAMAGE PREVENTION SYSTEM

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

SSSS LEGEND (SURVEYED BY THOMAS SOKOLOSK)I

		HYDROLOGIC SOIL GROUP
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STAMP:

STATE OF NEW HAMPSHIRE — BRENTON S. COLE — No. 14744 — 7/9/25 — LICENSED PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
INTERIM DRAIN AREAS PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=80'
SHEET:	3 OF 5	

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	HYDROLOGIC SOIL GROUP
168	SUNAPEE	B
61	TUNBRIDGE LYMAN ROCK OUTCROP	C
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SLOPE PHASE: 0–8%=B, 8–15%=C, 15–25%=D, 25%+=E

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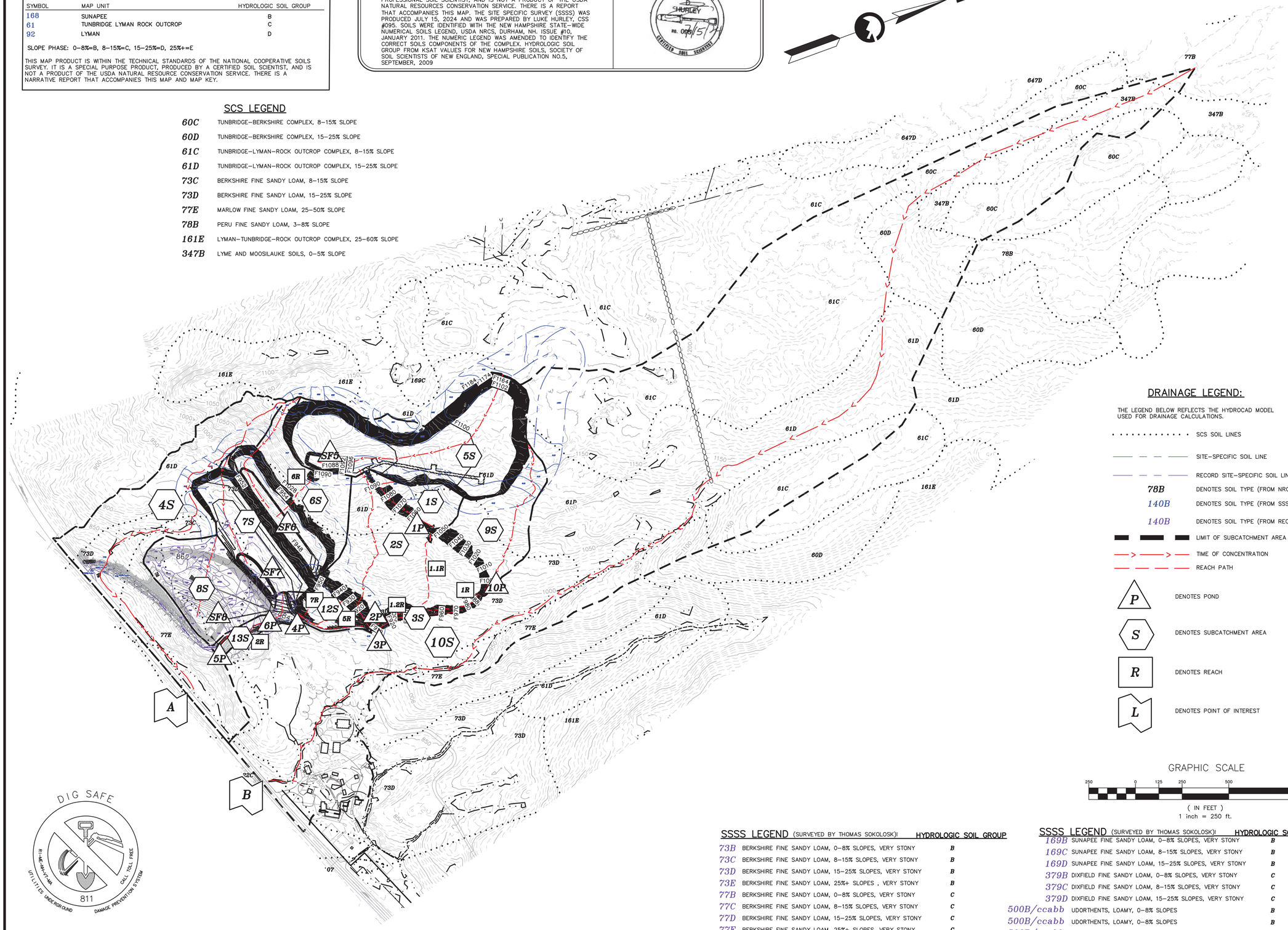

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- R — DENOTES REACH
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GRAPHIC SCALE

250 0 125 250 500 1,000

(IN FEET)
1 inch = 250 ft.

SSSS LEGEND (SURVEYED BY THOMAS SOKOLOSK)I

		HYDROLOGIC SOIL GROUP
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STAMP:

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LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
FINAL POST-DEVELOPMENT DRAIN AREAS PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=250'
SHEET:	4 OF 5	

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	HYDROLOGIC SOIL GROUP
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92	LYMAN	D

SLOPE PHASE: 0–8%=B, 8–15%=C, 15–25%=D, 25%+=E

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MAP 5 LOT 46
169.0± AC

MAP 215 LOT 7
78.4± AC

MAP 5 LOT 46-1
28.1± AC

PIPE TO BE REMOVED AT START OF PERIOD 8

SEDIMENT BASIN TO BE CONSTRUCTED DURING PERIOD 8

PIPE TO BE INSTALLED AT START OF PERIOD 8

PROPOSED GRADING TO BE COMPLETED DURING THE FINAL PHASE (PERIOD 8) OF THE PROJECT

GRAPHIC SCALE
80 0 40 80 160 320
(IN FEET)
1 inch = 80 ft.

DIG SAFE — CALL TOLL FREE 811 — UTILITIES UNDERGROUND — DAMAGE PREVENTION SYSTEM

SSSS LEGEND (SURVEYED BY THOMAS SOKOLOSK)I

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500B/ccabb	UDORTHENTS, LOAMY, 0–8% SLOPES	B
500B/ccabb	UDORTHENTS, LOAMY, 0–8% SLOPES	B
500B/ccabb	URBAN LAND, 8–15% SLOPES	B

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municipal services

REVISIONS

No.	DATE	COMMENTS	BY
1	12/20/24	PROJECT SUBMITTAL	JD
2	2/3/25	REVISED PER CITY COMMENTS	JD
3	5/9/25	REVISED PER CITY COMMENTS	JD
4	7/9/25	REVISED PER CITY COMMENTS	JD
5	7/24/25	ADDITIONAL WELL LOCATIONS	JD
6	8/11/25	REVISED PER CITY COMMENTS	JD

OWNER/APPLICANT:
62 HOLDINGS, LLC
250 NORTH STREET
JAFFREY, NH 03452

GRANITE ENGINEERING
civil engineering • land planning • municipal services
150 Dow Street, Tower 2, Suite 421
Manchester,
New Hampshire 03101
603.518.8030
www.GraniteEng.com

STAMP:
STATE OF NEW HAMPSHIRE — BRENTON S. DOLE — No. 14744 — 7/9/25 — LICENSED PROFESSIONAL ENGINEER

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
FINAL DRAIN AREAS PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	MAY 9, 2025	HORIZ. 1"=80'
SHEET:	5 OF 5	

CITY OF KEENE
NEW HAMPSHIRE

MEMORANDUM

TO: Planning Board

FROM: Mari Brunner, Senior Planner

THROUGH: Paul Andrus, Community Development Director

DATE: August 12, 2025

SUBJECT: Recommendation from the Master Plan Steering Committee regarding the City of Keene 2025 Comprehensive Master Plan

Recommendation:

1. To refer to the City of Keene 2025 Comprehensive Master Plan to City Council for endorsement.
2. To set a public hearing date for the adoption of the 2025 Comprehensive Master Plan on Monday, September 29, 2025 at 6:30 PM.

Background:

The Master Plan Steering Committee, which was formed by vote of the Planning Board in December 2023 to guide and assist with updating the City of Keene 2010 Comprehensive Master Plan, began meeting in February of 2024 to provide input and guidance throughout the planning and visioning process. The 16 members of the Committee attended monthly meetings, tabled at events, participated in visioning sessions and other community events, filled out detailed prioritization surveys, and provided valuable feedback to staff and the consultant team. For example, following an intensive period of public engagement in the summer of 2024, the Master Plan Steering Committee held two workshops to identify and frame the key pillars of the plan, which were then refined during the October 2024 "Future Summit" where the community vision was first presented to the public. The Committee also played a lead role in building out the desired future land uses for the Future Land Use Map and assisted with refining and prioritizing action steps for implementation of the plan. The input from this committee was invaluable to this project. At their most recent meeting on August 12, 2025, the Committee voted to recommend that the Planning Board refer the Master Plan to City Council for endorsement and set a public hearing date for formal adoption of the plan.

Overview of the 2025 Comprehensive Master Plan:

The Master Plan document is split into six major sections, described on the following pages. Each of these sections is directly related to a step in the planning process, as articulated in Section 1.1. "How to Read this Plan" on page 10 of the document.

Section One gives an overview of the planning process, the community vision, and the structure of the plan, which is built around six strategic pillars.

Section Two provides a snapshot of the Keene community using data to describe the City's current demographics, economic indicators, and livability. This section also includes an overview of population projections.

Section Three describes seven major themes that were identified throughout the planning process that weave throughout the plan and provide important connections between the strategic pillars. These themes reflect the core values and culture of the community articulated by the Keene community throughout the planning process.

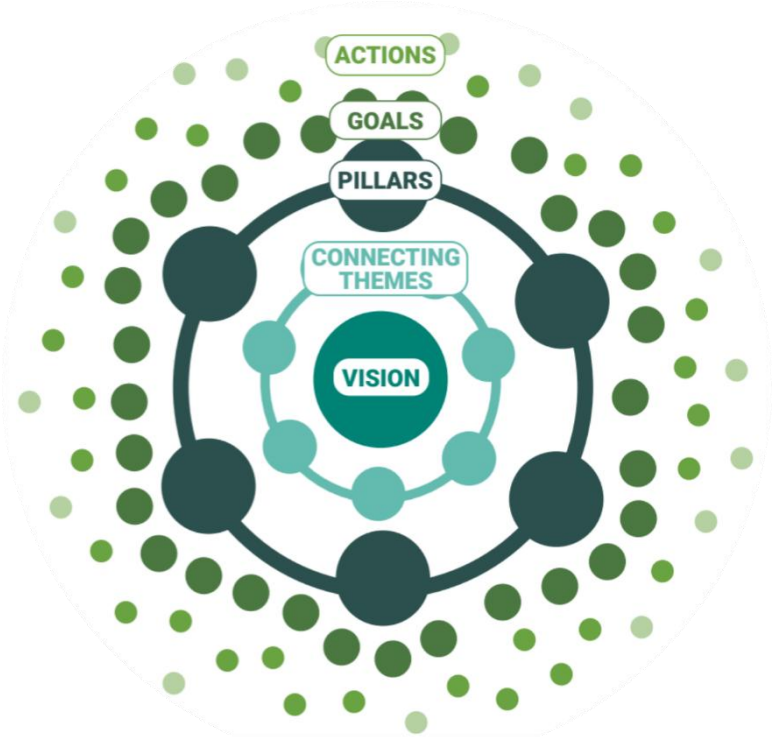

Figure 1. This graphic shows the relationship between different components of the plan, including the vision, themes, pillars, goals, and action steps.

Figure 2. A graphic showing the seven themes of the plan: Sustainability, Education, Accessibility, Public Health, Collaboration, Region, and Leadership.

Section Four provides a deep dive into each of the six strategic pillars that provide the organizing framework for the plan (Figure 3). They are core elements that underpin the community vision and are used to group goals and actions.

Section Five is the Future Land Use section of the plan that illustrates the desired future land use patterns that emerged from the community vision (Figure 4). These general land use categories focus more on the experience of a particular land use area based on the land use pattern, area identity, means of transportation, and scale.

Section Six provides a framework for implementation of the plan using a matrix that lists all the identified actions steps, organized by Pillar and Goal, and assigns each of them a priority level (low, medium, or high) and indicates the City's role (lead, participate, or support). Supporting information, including the prioritization survey results and a matrix of action steps with implementation timeframes, is included in the Appendices.

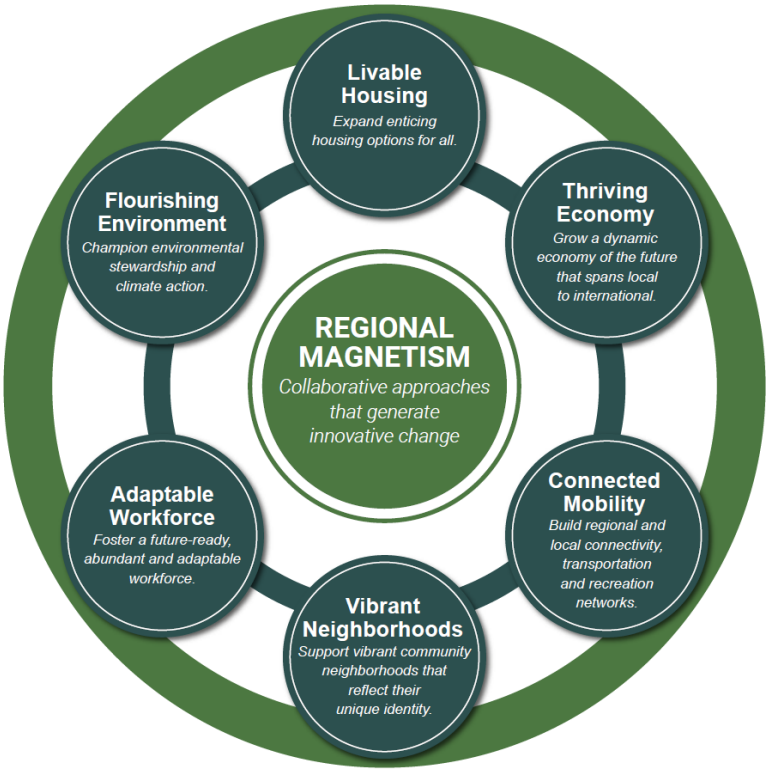

Figure 3. A graphic that shows the six strategic pillars of the 2025 Comprehensive Master Plan centered around the vision, which is described as "Regional Magnetism - Collaborative approaches that generate innovative change."

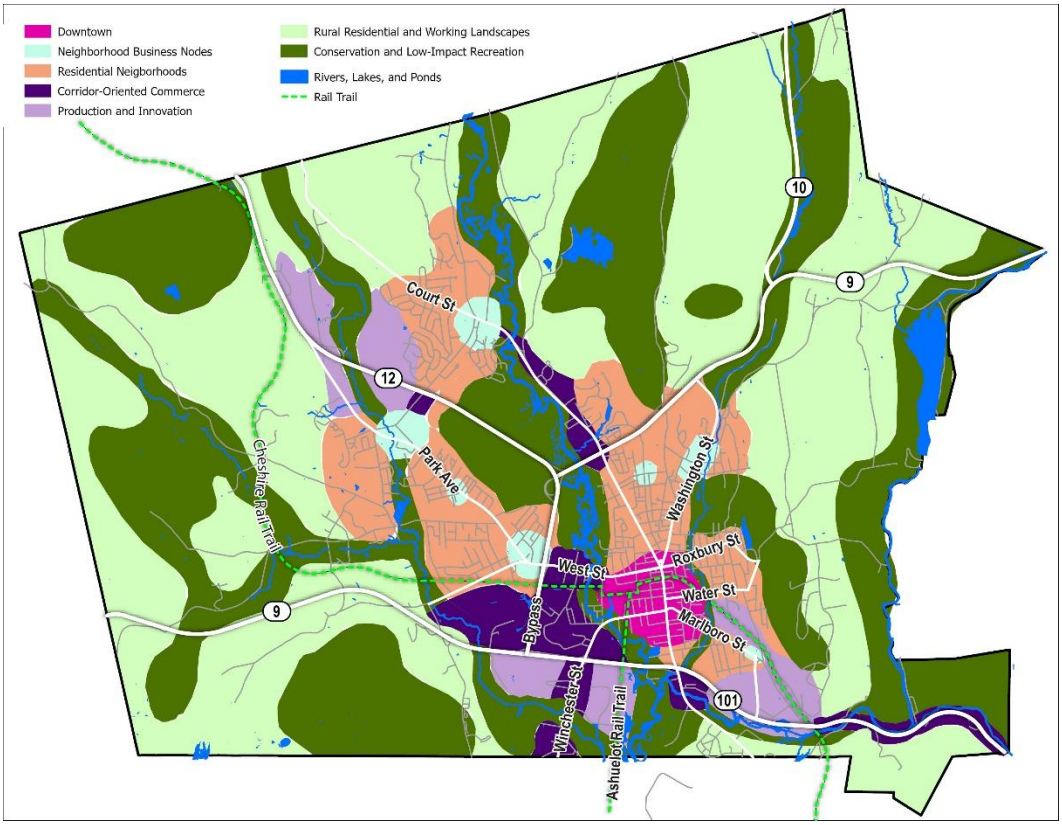

Figure 4. Future Land Use Map

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Stratham, NH 03885
Telephone: (603) 242-1503
www.icelegal.com

August 8, 2025

Planning Board
City of Keene
3 Washington Street
Keene, NH 03431
Via email: mbrunner@keenenh.gov
mfortson@keenenh.gov

Re: Concerns regarding July 28, 2025 Hearing

Dear Planning Board Members,

I am writing on behalf of G2 Holdings, LLC regarding our concerns with respect to procedural irregularities at the July 28, 2025 meeting. While we find a number of things that occurred during the meeting to be problematic, we focus primarily on two: 1) the holding of a hearing while a request for a continuance was pending; and 2) permitting ad hominem attacks against G2 Holdings and its owner,

First, as you know, at the request of your staff, we moved for a continuation of the hearing given that the third-party reviewers, through no fault of their own, had not completed their review. The staff requested these reviews (at G2 Holdings' expense) to help the Board apply what may be the most technical and least used provisions in the Keene Land Development Code (Section 25). The Chair did not call this continuance request to a vote until after inviting negative public comment on a formal proposal that had yet to be presented. The Chair asserted twice that this was "the normal procedure" (01:29:27 and 01:30:03),[1] but it was not the procedure at the May 27, 2025 hearing, where, a vote was taken on the continuance immediately even though there were attendees ready to speak against the project. Nor was it the procedure at a September 26, 2022 hearing in a totally unrelated matter. Nor is it the procedure recommended in the Public Hearings section of Appendix C: Suggested Rules of Procedure for Planning Boards of the Planning Board Handbook 2024 which speaks in terms of the applicant and those in favor of the proposal being called to speak first. *See also*, Meeting Mechanics of NH Land Use Boards, Section IV Public Hearing Procedures[2] (same).

[1] Time stamp of video of Planning Board Hearing, July 28, 2025.
[2]2022 NHMA Land Use Law Conference; available at: https://www.nhmunicipal.org/sites/default/files/uploads/webinars/2022-10-15_meeting_mechanics_handout.pdf

As a result, the Board listened to opposition to a formal proposal that has yet to made and which is in flux even as of this writing. This out-of-context vitriol from neighbors (mostly in neighboring towns) can only have served to unfairly prejudice the Board and the general public (as evidenced by the article in the Keene Sentinel the following day) against the project and G2 Holdings generally.

Second, the Chair did not attempt to control the personal attacks against G2 Holdings and its owners. Appendix G of the Planning Board Handbook instructs board members not to "indulge in personalities [or] permit anyone else to do so." Section IV.D.3. of the Meeting Mechanics is even more blunt: "Chair should not allow personal attacks."

For example, Jim Manley stated "you've been lied to, I'm going to be blunt…G2 is not to be trusted." 02:17:24). Duane Nettleson said, "He doesn't follow any regulations" (02:24:36) and that his building "was split in half" due to blasting" (02:7:58). Elizabeth Newcombe said, "The original plans showed many instances of … misrepresentation…" Joseph Vicinanzo said, "They're in arrears on a number of tax obligations…" These are *ad hominem* attacks that are defamatory and do not reflect the "civility" for which the Chair later thanked the crowd (02:31:33). The comments should not have been allowed and we hope that they will not be allowed going forward.

The Applicant is entitled to due process. And while the public certainly has the right to bring legitimate concerns to the attention of this Board, the process should be fair to all. We trust that will be the case at the hearing on August 25, 2025.

Thank you for your attention to this matter.

Ariane Ice
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