

## **City of Keene Planning Board**

## **AGENDA - AMENDED**

Tuesday, May 27, 2025 6:30 PM City Hall, 2<sup>nd</sup> Floor Council Chambers

### A. AGENDA ITEMS

- 1) Call to Order Roll Call
- 2) Minutes of Previous Meeting April 28, 2025
- 3) Final Vote on Conditional Approvals
- 4) **Boundary Line Adjustment** 
  - a) PB-2025-10 Boundary Line Adjustment 37 & 38 Grimes Rd Applicant Cardinal Surveying & Land Planning, on behalf of owners Christopher & Jennifer Tattersall & the Margaret A. Heatherman Trust, proposes to transfer ~10.35-ac of land from the ~31-ac parcel at 37 Grimes Rd to the ~29-ac parcel at 38 Grimes Rd (TMP#s 237-026-000 & 236-015-000). Both parcels are located in the Rural District.
- 5) Continued Public Hearing (To be continued to the July 28, 2025 Planning Board meeting.)
  - a) PB-2024-20 Earth Excavation Permit Major Amendment & Hillside Protection Conditional Use Permit 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.
- 6) Master Plan Update (KeeneMasterPlan.com)
- 7) Staff Updates
- 8) New Business
- 9) Upcoming Dates of Interest
  - Joint Committee of the Planning Board and PLD June 9<sup>th</sup>, 6:30 PM
  - Planning Board Steering Committee June 10th, 12:00 PM

- Planning Board Site Visit June 18<sup>th</sup>, 8:00 AM <u>To Be Confirmed</u>
   Planning Board Meeting June 23<sup>rd</sup>, 6:30 PM

# **10) MORE TIME ITEMS**

- a) Potential Modifications to the Site Plan Review Thresholds
- b) Training on Site Development Standards Snow Storage & Landscaping

# 11) ADJOURNMENT

1		<b>City of Keene</b>		
2		<b>New Hampshire</b>		
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5		PLANNING BOARD		
6		<b>MEETING MINUTES</b>		
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8	Monday, April 28, 2025	6:30 PM	Council Chambers, City Hall	
	mhors Prosent.	Staff Present.	City Han	
Members Present:Staff Present:Harold Farrington, ChairMari Brunner, Senior Planner				
Roberta Mastrogiovanni, Vice Chair Megan Fortson, Planner				
	Mayor Jay V. Kahn  Paul Andrus, Community Development			
	Armando Rangel Director			
	nneth Kost	Direction .		
	ndyn Markelon, Alternate			
	chael Hoefer, Alternate			
Me	embers Not Present:			
	uncilor Michael Remy			
	rah Vezzani			
	an Clancy			
	phon Mehu, Alternate			
Tai	nmy Adams, Alternate			
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10	I) Call to Order - Roll Call			
11	Chair Farrington called the meeting	to order at 6:30 PM and a roll of	call was taken. The Alternates	
12	were invited to join the session as vo		turi was turion. The reconducts	
13	were invited to Join the Session as ve	oring memoers.		
14	II) Minutes of Previous Meeting	- March 24, 2025		
15			oard approve March 24, 2025	
16	A motion was made by Roberta Mastrogiovanni that the Planning Board approve March 24, 2025. The motion was seconded by Mayor Kahn and was unanimously approved.			
17	The motion was seconded by Mayor	rami and was unaminously ap	proved.	
18	III) Final Vote on Conditional A	nnrovale		
19	· · · · · · · · · · · · · · · · · · ·		now issue a final vote on all	
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21	will be the final approval and will start the 30-day appeal clock.			
22	The Chair asked whether there are an	•	ready for a final vote.	
23	1110 011011 0101100 (1110110 0110 0110	mpp mentions comments under the	1000 y 101 w 1111w1 + 0001	
24	Senior Planner Mari Brunner stated	there are three applications read	dy for a final vote. The first is	
25	PB-2025-05 – Boundary Line Adjus			
26	four conditions precedent for this boundary line adjustment. They included the owner's signature			
27	on the plan; Submittal of four full 1			
28	cover recording fees; Inspection of		-	
29	designee - All of the conditions have been met.			

A motion was made by Roberta Mastrogiovanni that the Planning Board issue final approval for PB-2025-05. The motion was seconded by Mayor Kahn and carried on a unanimous vote.

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- 33 The second application is for the same project, PB-2025-04 Major Site Plan and Solar Energy
- 34 System Conditional Use Permit 521 Park Ave & 91 Maple Ave. There are five conditions
- 35 precedent to final approval. Those included adding a note to the plan regarding the access road and
- making sure that it's upgraded with gravel to support construction vehicles; The owner's signature
- on the plans; Submittal of five full size paper copies and a digital copy of the final plans; Submittal
- 38 of security in form and amount acceptable to the Community Development Director or their
- designee; Lot line adjustment shall receive final approval. All of the conditions have been met.
- 40 Ms. Brunner called the Board's attention to page 29 of their packet where the electrical disconnect
- 41 location was changed from one back corner of the building to a different back corner of the
- building. She also added there was a lot of public comment at that meeting, so there is a memo
- from the Parks and Recreation Director dated April 1 (page 31 of the packet). The memo provides
- an update on the city's plans for the community garden relocation. Mr. Hoefer expressed his
- 45 appreciation to the Parks and Recreation Director.
- The Chair asked for clarification that this is not a public hearing, but rather board actions. Ms.
- Brunner answered in the affirmative. She stated the Board is verifying that the conditions precedent
- 48 have been met.
- 49 A motion was made by Roberta Mastrogiovanni that the Planning Board issue final site plan
- approval for PB-2025-04. The motion was seconded by Mayor Kahn and carried on a unanimous
- 51 vote.

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- Ms. Brunner stated the next application ready for final vote is SPR-593, Modification 2-20
- 54 Central Square, Bank of America, which had some lighting changes that needed to be approved
- 55 through a major site plan. There were two conditions precedent: Owner's signature appears on the
- plan; Submittal of five full size paper copies of the final plan set. The conditions have been met.
- A motion was made by Roberta Mastrogiovanni that the Planning Board issue final site plan
- 58 approval for SPR-593, Modification 2. The motion was seconded by Michael Hoefer and carried
- on a unanimous vote.

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## **IV)** Extension Request

a) PB-2024-14 – Cottage Court Conditional Use Permit, Hillside Protection

Conditional Use Permit, & Major Site Plan – Timberlane Woods Development, 0 Drummer

Rd – Applicant Fieldstone Land Consultants, on behalf of owner Christopher Ferris, requests a first extension to the deadline to satisfy the precedent conditions of approval for the proposed Cottage Court Development consisting of 6 buildings and 36 units on the parcel at 0 Drummer Rd (TMP #515-015-000). The property is 13.1-ac in size and is located in the Low Density District.

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Mr. John Noonan of Fieldstone Land Consultants addressed the Board on behalf of Christopher E

Farris, who is the owner and applicant. Mr. Noonan stated they are looking to have an extension

to the conditional approval as the applicant is still working on obtaining some architectural drawings and obtaining the Alteration of Terrain permit. He indicated as the expiration is April 27, and these two items are still outstanding, the applicant is looking for an extension.

Mr. Kost asked to clarify how long the extension request is for. He stated the reason he is asking is because of runoff issues that could occur from this site, as he was not sure the site had been properly protected. The Chair stated the standard extension is 180 days.

Mr. Noonan agreed the site has been logged. As soon as the two outstanding items are received, the project would move forward.

Mayor Kahn stated that the 180-day extension from the date that the conditional approval expires, April 27, would extend the project about a year after the Board originally considered the application.

Mr. Kost asked if anything can be done to safeguard the site in the meantime. Mr. Noonan stated the site was left with stumps in place, as allowed by forestry practices for Alteration of Terrain. Once they obtain their Alteration of Terrain permit, a silt fence could be installed. As part of the approval, the wetland buffer will have to be flagged and verified by Staff. The silt fencing could be installed once that is done. He stated overall, the site is stable where the stumps were left in place of the trees. He stated there is already a lot of small growth, and some of the trees are growing back since it was logged. He stated he did not feel there was an issue with runoff or stabilized slopes at this time. However, silt fencing to protect the wetland resource and that wetland buffer being flagged is the first thing that should be done once the Alteration of Terrain permit is obtained.

A motion was made by Roberta Mastrogiovanni that the Planning Board grant a 180-day extension to the timeframe to satisfy the precedent conditions of approval for PB-2024-14. The motion was seconded by Mayor Kahn and carried on a unanimous vote.

I) Public Hearings

a) PB-2025-06 – Guitard Homes Cottage Court Development – Cottage Court Conditional Use Permit, Major Site Plan, & Surface Water Protection Conditional Use Permit – 0 Court St – Applicant Fieldstone Land Consultants PLLC, on behalf of owner Guitard Homes LLC, proposes a Cottage Court Development consisting of 29 single family units accessed by a private driveway on the undeveloped lot at 0 Court St (TMP #228-016-000). A Surface Water Protection CUP is requested for impacts to the 30' surface water buffer. Additionally, a waiver has been requested from Section 21.7.3.C of the LDC related to light trespass. The parcel is 9.7-ac in size and is located in the Low Density District.

# A. Board Determination of Completeness

Planner Megan Fortson stated the applicant has requested exemptions from submitting a historic evaluation and screening analysis. Planning Staff have made the preliminary determination that granting the requested exemptions would have no bearing on the merits of this application and recommend that the Board accept the application as complete.

A motion was made by Roberta Mastrogiovanni that the Planning Board accept this application as complete. The motion was seconded by Mayor Kahn and was unanimously approved.

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## B. Public Hearing

- Mr. Noonan, of Fieldstone Land Consultants, addressed the Board and stated they are utilizing the Cottage Court Overlay District for this property to increase density. When they came in for a preliminary hearing, they had 31 homes on the site. He stated as the design moved forward, they reduced the units to 29.
- He stated the main driveways are laid out in the same way as was presented during the preliminary hearing.

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Mr. Noonan explained that the site is located on Court Street. The main driveway will come in and end up at a hammerhead, ultimately building in three phases. There will be a connection spur to the Genesis property, where there is an existing easement. The Conservation Commission conducted a site visit to the property.

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Phase One is divided by where the wetland crosses through the property and flows down towards Court Street. Phase one would consist of 12 homes directly on Court Street and prior to the crossing of the wetland swale.

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Phase Two would include the homes around the cul-de-sac and would require box culvert four feet in height and six feet wide installed across the wetland. This would then allow for utilities to cross and for the driveway to be built up.

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Phase Three would consist of six homes going up to the end of the hammerhead, which is intended to be used as a turnaround for emergency vehicles.

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Mr. Noonan stated the site would be serviced by municipal water and sewer. Water and sewer lines would be extended from Court Street. At the direction of the City Engineer, water would be looped over to the lines that feed into the Genesis property, along the existing easement.

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The homes would be single-family residential, meeting the minimum requirement for footprint for cottage court and the maximum gross floor area, which is a 1,250 square foot maximum gross average. Specifically, the maximum gross average for the proposed project would be 1,164 square feet. These would be a mixture of three styles of home. All single family residential. One type of home would be a two-bedroom unit. The other two types would be three-bedroom units. The three-bedroom units would be two stories but under the 35-foot max requirement for height of the roof.

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Overall, the property slopes from Court Street to the rear of the property. Along the rear of the property is an existing walking trail referred to as Woods Road. There is an easement that goes through the property. This trail, known as "Root Trail" would remain.

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- With the wetland crossing, the water would drain behind the Genesis property. The water drains down through the site, to Court Street, through a box culvert, and ends up in the Ashuelot River.
- He noted the wetland would have a 30-foot buffer in some areas and a 10-foot buffer in certain
- areas, which is permitted through a Cottage Court Conditional Use Permit. Mr. Noonan stated this

was presented to the Conservation Commission last week, and the Commission voted to recommend the project favorably.

Mr. Noonan continued by stating he discussed stormwater, wetland impacts of two crossings for box-culverts being installed, and buffer impacts with the Commission. The only permanent buffer impacts would be where the wetlands are being crossed with box-culverts and grading and stormwater management.

Mr. Noonan went on to say that ownership is going to be within an HOA. These would be condominium units; each home would be owned by the condominium owner. They will have limited common area around their units. Some of the units would have garages and some would have sheds for storage.

He added that some of the trees along the edge of the property are being maintained as a way to incorporate screening.

The grading and drainage plans have been reviewed by the City Engineer for the stormwater management report on how stormwater is going to be handled as part of the project. Overall disturbance is well over 100,000 square feet, which would require a DES Alteration of Terrain permit. The State will review the stormwater management report, design, and all of the erosion control measures that would be in place.

The wetland crossings for the two box culverts would require a DES Wetland Impact Permit, which would also be reviewed through DES.

The project would also require a Shoreland Protection Permit as the Ashuelot River is located across the street, which is one of the protected rivers in the State. This river is within 250-feet along the front end of the property

Stormwater, ultimately, will be handled between the two phases. Stormwater management will also be built in phases. There will be a gravel wetland for phase one, a gravel wetland for phase two, along with level spreader, and a small infiltration basin along with treatment swales to treat the runoff. Phase three would be very similar in order to meet the State standards.

Each home would have a drip strip infiltration trench (four feet wide, 4 feet deep and an inch and a half stone). This allows the water off the roof to drip directly and infiltrate into the ground Whatever doesn't infiltrate will outflow and be caught by treatment swales into the stormwater management systems.

Utilities – A profile and plan sheet for utilities and road grading has been provided.

The applicant met with the City Engineer last week and addressed the additional comments he had raised. Mr. Noonan stated the applicant is obtaining cost estimates and the biggest thing that could change is ownership of the utility. He stated that based on pricing, utilities could be owned by the HOA or the City, depending on the material. Mr. Noonan added the price of ductile iron is double in price currently compared to plastic pipes. If plastic pipes are used, the pipes will not be acceptable by Public Works and the HOA would have to own that utility. Utilities will also be reviewed by DES, who would review and approve the water and sewer connections.

Lighting Plan – Mr. Noonan stated the agenda indicates there is a waiver for lighting trespass, which he indicated has been modified. He noted to a light fixture just over 0.1-foot candle at the property line, which has now been shifted further into the property. It would still light the intersection, but the project would no longer require a waiver.

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He added even though these are private driveways, they are being designed to City road standards, hence street lighting will be provided. There will also be lights on each house. The lighting plan shows that the project meets the standard for Keene for both the house lights and the street.

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Landscaping Plan – There will be trees provided along the street to provide a community feel. Landscaping would be up to the individual owner of the condominium unit. There will be fences coming in at the entryway and there will be plantings along the Court Street frontage.

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Mr. Noonan went on to say erosion control details and construction details have been provided. This application does not require a Hillside Protection CUP Application for this project. He noted there are some steep slopes, but this is where the box culvert is being located. The rest of the steep slopes are not being impacted, and those slopes are on the opposite side of the trail.

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This concluded Mr. Noonan's presentation.

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The Chair noted to the three different models being proposed and asked if a decision has been made regarding which models would be built in which locations. He asked for clarity on whether the homes would be custom built. Mr. Noonan stated the plans, indicated by note 1,2,3, show what style of home is going to be built at the different locations. The Chair clarified there will be 11 homes with garages. Mr. Noonan answered in the affirmative.

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- 239 Mayor Kahn asked for the square footage for each style of home.
- 240 Mr. Noonan stated option 1 would have a footprint area of 627 square feet.
- Option 2 would be 1,250 square feet with a footprint of 772 feet (2 story)
- Option 3 would be 1,394 square feet total with 852 feet as the footprint (2 story).

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Mr. Noonan explained that the Cottage Court overlay district requires under 900 square feet of footprint and total average square footage must average out below 1,250 square feet.

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The Mayor clarified the mix of these three different styles are at an average of 1,164 square feet. Mr. Noonan answered in the affirmative. The Mayor asked for the different types of houses that would be constructed at each phase. Mr. Noonan stated phase one would have two number one options, eight number two options, and two number three options.

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Phase two has four number one options, eight number two options and one option three.

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Phase three would be all option 3 buildings. Phase 3 would also have walk out basements, but basements don't count toward the gross total average. The Mayor clarified that the garages and sheds don't count towards the gross total average. Mr. Noonan answered in the affirmative. It was stated that the distance from the driveway of the abutter on the other side is over 300 feet.

The Mayor asked for the frontage of this site. Mr. Noonan stated it was 344 feet. He also asked for the distance between the driveways for this site and the Genesis site. Mr. Noonan stated it was about 255 feet.

Mr. Hoefer clarified that each phase stands on its own. Mr. Noonan answered in the affirmative.

Mr. Kost asked if each phase meets that average Cottage Court amount. Mr. Noonan stated the average is based on the total development. Phase one is going to be the lowest average square footage, and it will increase as phases two and three are built. Mr. Kost raised the concern if phases two and three are not built the phase one might not be in compliance with the Cottage Court. Ms. Brunner in response stated she did not have an exact number, but believed phase three is proposed to have the larger buildings and assumed phases one and two would meet the cottage court requirements on their own, without factoring in the six larger buildings.

Staff comments were next. Ms. Fortson addressed the Board and stated the proposed parcel is located about 1/3 of a mile to the northwest corner of Cheshire Medical Center. The surrounding uses include the nursing home located directly to the west, undeveloped land to the north and northeast, commercial offices across Court Street to the southwest, and single-family homes to the southeast.

The notable features on the site include a small stream, wetland systems that run in north south orientation through the parcel, and the old Woods Road, which is used as a walking trail that runs along the northeastern property boundary and connects to the neighborhood to the south.

The property has about 344 feet of frontage along Court Street. The owner is proposing 29-unit Cottage Court development, consisting of single-family homes, which are proposed to be constructed over the course of three phases.

 Ms. Fortson noted the primary access to the site would be from Court Street and a travel aisle that is going to be constructed from the Genesis parcel, using an existing easement, which is already in place. Given the fact that there are more than five units proposed, and they are also within the wetlands buffer. This project includes both a Cottage Court conditional use permit, a Surface Water Protection Conditional Use Permit and a Major Site Plan application.

In regard to the determination of regional impact, Ms. Fortson stated planning staff did not feel there was a potential for regional impact but asked that this be considered as part of the deliberation.

Ms. Fortson next addressed departmental comments. The first phase is anticipated to begin this summer. Under the Board's regulations, active and substantial development of a completely undeveloped site like this is two years from the date of conditional approval, which would give the property owner until 2027 to achieve active and substantial development for phase one. The first phase is required to be completed by 2027, phase two by 2029 and phase three by 2031. The property owner is in agreement of this timeline.

Code enforcement has requested a building permit.

Zoning Staff confirmed that the vehicular access from the Genesis parcel was allowed, given the fact that that easement has been in place for a number of years.

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Engineering Staff did have quite a few comments, but the applicant was comfortable with these changes being reviewed as a condition of approval, subject to review and approval by the City Engineer and Public Works Director.

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- Ms. Fortson went on to say the first section of standards relevant to this application come from Article 11 of the Land Development Code, and those are the Surface Water CUP standards.
- The first few sections address buffer encroachment, and the language states as follows the 315 316 proposed use cannot be located in a manner to avoid encroachment into the surface water 317 protection overlay district and that the project is designed to minimize impacts to the surface water 318 buffer. Because the property is located in the low-density district, they are required to maintain a 319 30-foot buffer from surface waters and wetlands. Ms. Fortson noted seven of the homes and their 320 associated sheds are proposed to be located right on the edge of the 30-foot surface water buffer. 321 An additional five buildings and/or accessory structures will be located within the buffer. The 322 applicant's narrative stated that there was going to be approximately 1,300 square feet of impact 323 within the surface water buffer. The proposed design for the cottages are grouped in three clusters 324 in the upland areas of the site to minimize impacts to the buffer. Given the proximity of some of 325 the proposed structures to the surface water, Planning Staff recommend the submittal of a security 326 to cover the cost of sediment and erosion control measures and precedent condition of approval 327 related to flagging of the wetland buffer prior to the start of construction and the inspection of that 328 buffer by Community Development Staff.

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In addition to the applicant's placement of the actual buildings on the site to reduce the encroachment into the surface water buffer, they are also proposing a number of stormwater measures, plantings and conservation seed mix to help stabilize the site. It appears that the intent of this standard was met.

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Adverse Impacts - The proposed private driveway will be crossing directly through the wetlands in two locations. Hence, the Board is going to need to decide if the proposed development is going to comply with this standard, which states that when taken as a whole, the proposal will avoid the potential for adverse impacts to the surface water resource. Planning Staff recommends that the Board include a condition of approval related to the inclusion of the necessary State permits on the proposed conditions plans.

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Preservation of Existing Vegetation - The applicant is proposing to clear the areas where the houses are proposed. However, they are proposing to maintain a vegetated buffer around the perimeter of the site, in addition to planting some different street trees and a number of different shrubs on the property to give the appearance of it being a residential neighborhood with a street, even though it is a private driveway. They will also be screening for the transformers and other mechanical equipment.

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That standard appears to be met. However, the Board is going to have to make the final determination as to whether or not maintaining that existing vegetation and the installation of the proposed new landscaping meets the intent of that standard.

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Ms. Fortson noted additional considerations that the Board could use when reviewing these types of proposals. Ms. Fortson stated, under this section of the staff report, she deferred to what the

Conservation Commission had said. The Commission has met two different times to discuss this project. The first was in November of 2024. The general consensus, based on the minutes, was that the Commission appreciated the fact that the applicant was trying to minimize the impacts in the individual locations as opposed to requesting a blanket reduction in the size of the surface water buffer. They also recommended that the applicant be very careful when it comes to designing the stormwater measures. Ms. Fortson asked for Ms. Brunner's input on the Conservation Commission's meeting.

- Ms. Brunner stated the Conservation Commission met last week to review this application as a formal referral from the Planning Board. She indicated that everyone on the Commission was supportive of this project and referred to the following language from the draft minutes:
- Mr. Von Plinsky made the following motion, which was duly seconded by Ms. Richter, on a vote
   of 7 0, the Conservation Commission recommends the Planning Board approve this application
   with the following recommendation:
- 368 "1. Riparian plantings that will support a wide range of native pollinators, such as Joe Pieweed and milkweed."

Ms. Fortson referred to the next standard that relates to this application, which comes from Article 17 – Cottage Court CUP Standards.

The first section dictates what development types are allowed. The applicant is proposing a series of single-family homes that are going to be managed by a homeowners' association, so that standard appears to be met.

There are also specific dimensional requirements that are required.

Ms. Fortson referred to page 40 of the Board's agenda packet, w

Ms. Fortson referred to page 40 of the Board's agenda packet, which outlines the dimensional requirements. This proposal would meet the setbacks required in the Low Density District, which is a 15-foot front setback, 20-foot rear setback and a 10-foot side setback. The maximum stories will be two, which is what is permitted. This standard appears to be met.

Ms. Fortson continued with reference to dwelling unit size. Based on the three styles and the corresponding square footage outlined previously, the maximum average gross floor area is going to be 1,164 square feet, which falls within the requirement for maximum gross floor area. The building footprint is going to be 852 square feet, which is below the 900 square foot footprint maximum. Those standards are met.

For parking, there can be a maximum of one space per bedroom or minimum of one space per unit. As part of this proposal, the applicant is permitted a minimum of 29 spaces or a maximum of 81 spaces. The applicant is proposing to offer a total of 58 parking spaces, which is going to be both through the driveways that are going to be created for each individual unit, as well as those units that are going to have garages. This standard appears to be met.

Ms. Fortson stated Code Enforcement Staff had no concerns in terms of the building separation for the driveways. They are proposing a driveway with two-way traffic at a 20-foot width, which complies with the standard of between 20 to 24 feet wide. That standard is met.

There are no internal roads proposed.

The screening standard isn't applicable to this application, because this proposed use is not more intense than the surrounding use. The applicant is proposing to install trees and install a fence at the entrance, as well as keeping the vegetated buffer in place around most of the site.

Architectural Guidelines – This section of the code states as follows: *these types of developments should endeavour to fit in or be respectful of the context of the surrounding neighborhood.* 

The project narrative states that the buildings will be finished with natural tones that will fit in with the nearby neighborhoods in the City and will complement one another well. In addition, the proposed building styles align with recommended urban design and architectural principles listed in this section of the code.

What this means is that the building should be narrow to the frontage. They should have a base that is differentiated from the rest of the building. There should be some sort of structural expression, simple, clear, massing and natural and integral materials. That standard appeared to be met.

<u>Article 21</u> – <u>Site Development Standards:</u>

<u>Drainage</u> – The applicant is proposing a mixture of catch basins, infiltration trenches with treatment swales, a box culvert and gravel wetland ponds on the site as the permanent drainage measures. The City Engineer, other than the specific comments related to the design of the utilities, did not have any concerns about the proposed stormwater runoff. Ms. Fortson noted this application is going to require both an Alteration of Terrain permit and a wetlands permit from DES. Staff recommend those permit numbers be added to the plans, but otherwise that standard appears to be met.

<u>Sediment and Erosion Control</u> – In addition to the permanent drainage and stormwater management measures, the applicant is also proposing to install temporary silt fencing, silt socks, catch basins and a stabilized construction entrance from Court Street. Staff recommend that a condition of approval related to the inspection of these erosion control measures be included in the motion. This standard appears to be met.

 <u>Landscaping</u> – The applicant proposes 12 red maple trees to be installed along either side of the drive aisle. They are also proposing a mixture of shrubs, including rhododendrons, junipers and holly bushes. Not only will those serve as additional landscaping, but also as screening for the transformers that are going to be installed on the site. Staff recommend the submittal of security to cover the cost of that landscaping, as well as initial and final landscaping inspections.

<u>Screening</u> – The site is going to be screened from adjacent properties and from the public right of way by the existing wooded buffer.

<u>Trash Removal</u> – Trash removal is going to be handled independently by each condo owner. Therefore, there would be no need for a dumpster that needs to be screened.

<u>Mechanical Equipment</u> – The applicant is proposing to install mechanical equipment at the rear of the building, so it will not be visible from any public right of way. That standard appears to be met.

450 <u>Light Fixtures</u> – Light fixtures meet all of the necessary requirements in terms of being full cut off and have having a color temperature of 3500 Kelvin or less. This standard has been met.

The waiver that was originally submitted to allow for light trespass levels above 0.1-foot candle at the property line is no longer necessary, given the fact that the photometric plan was updated.

<u>Utilities</u> – There is still discussion going on as to how water and sewer piping is going to be constructed as part of this project and its ownership. Staff are recommending two conditions of approval: draft documentation related to easements and any other necessary legal instruments. These documents would need to be reviewed by the City Attorney and copies of those recorded documents following the final approval of the application would need to be submitted.

<u>Traffic and Access Management</u> — The applicant had submitted a traffic memo prepared by a traffic engineer using historical data from the New Hampshire Department of Transportation. The memo estimates that the 29-unit development will result in approximately 24 vehicle trips during the weekday morning peak hour, 31 trips during the weekday evening peak hour and 35 trips during the Saturday midday peak hour, with the result being that trips associated with the development would have negligible impacts on the adjacent roadway system. This standard appears to be met.

<u>Filling and Excavation</u> — The project narrative does state that the applicant anticipates over 50 truck loads of material brought into the site during the course of construction. In terms of a truck route, the applicant is proposing that trucks would travel along Court Street to Maple Avenue and then onto New Hampshire Route 12. City Staff had no concerns.

Ms. Fortson next reviewed the motion language. This concluded the Staff Report presentation.

The Mayor asked for the relationship of the two driveways during the different phases of the project. Ms. Fortson stated her understanding is that the construction entrance is proposed to be from Court Street. Ms. Fortson continued by stating the homes that would be on the southwestern portion of the parcel are proposed to be constructed as part of phase one, so the main construction entrance is going to be from Court Street. She stated there is no intention for vehicles to be travelling through the Genesis site during any of the phases of construction. Mr. Noonan stated that Ms. Fortson is correct. The Mayor asked for the reason for the connection between the Genesis and proposed property. Mr. Noonan stated this would be intended to be used as an extra exit for the residents of the site. A second egress on site would be for residents, not for construction.

The Chair asked to clarify that the motion will be for the Cottage Court CUP, Major Site Plan, and Surface Water Protection CUP related to this application, and that they would not be voted on separately. Ms. Fortson answered in the affirmative.

The Chair asked for public comments next.

Mr. Jeff Gowan of 15 A Windsor Court addressed the Board and stated he is disappointed that the 89-unit condo association just west of the proposed cottage court application was not mentioned. Mr. Gowan asked whether the electric utilities were going to be buried. Mr. Noonan stated they will be buried. Mr. Gowen asked for the construction plans for phase one. Mr. Noonan went over the construction timeline and the houses that will be constructed during this phase. Mr. Gowan asked for clarification regarding where the Wright Estate is in relationship to the proposed project

498 location. Mr. Noonan stated that Fieldstone usually surveys about 100 feet from the project site, 499 so the Wright Estate did not show up on the site plan. Mr. Noonan clarified the distance between 500 the property line and the adjacent property would be about 125 feet. He continued by stating the brook, or wetland stream, would also be in between the adjacent property and project site. He 502 clarified that the developer is not proposing to rename the trail that will be maintained at the project 503

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The Mayor asked to confirm the distance from the northern most location on this property is about 125 feet from abutters to the north. Mr. Noonan answered in the affirmative.

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Mr. Gowen asked about lighting. Mr. Noonan stated there will be lights located at the hammerhead turn around and distanced throughout the proposed road.

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Ms. Jean Lavalley of 15K Windsor Court (Wright Estate) stated she has not heard anything about the applicant's fire protection plan. Mr. Noonan stated there are existing hydrants located at the intersection right before the Genesis lot. There is also a hydrant in the wetland, which the Fire Chief was not sure was functional. At the direction of the Fire Chief, two additional fire hydrants have been added. One will be added in phase two and one in phase three. There will be an extension of an 8-inch water main and 6-inch water line per the Fire Chief's review.

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Ms. Lavalley asked what fire safety plans the individual cottages would have. Mr. Noonan stated the cottages are not required to have sprinklers. Mr. Noonan stated all the cottages fall within the municipal 911 district and will be assigned a 911 address specific to each residence, and they would rely on the municipal fire department.

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Ms. Lisa Perkins of 649 Court Street stated she had concerns about the water conservation areas around her property and noted she has already done a lot of mitigation in her backyard to avoid water accumulation. She indicated the infiltration trenches on the edge of her property is her biggest concern. She stated the box culvert is also draining through her property and asked if there was an easement related to that. Mr. Noonan stated there is an easement and went on to say the two blue areas on the plan that Ms. Perkins is referring to are existing wetlands. He stated even if this project were not going to be constructed, those wetlands would exist. He explained the water comes down the steep hill along one side of the trail, bleeds through the ground, forms another wetland and runs through a collapsed stone box type culvert. The entire site drains from Goose Pond through Ms. Perkins' property into a box culvert under Court Street and ultimately into Ashuelot River.

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Mr. Noonan stated the proposed drainage for phase one ends up in a gravel wetland, which holds and treats the water before it ultimately ends up in the wetland complex. The area Ms. Perkins in concerned about is being captured in a swale. Anything that goes over the top would end up in an infiltration basin, allowing the water to sit and soak into the ground. Ms. Perkins asked about mosquitoes. Mr. Noonan stated infiltration basins don't hold water long enough to attract mosquitoes. He added the stormwater report that is reviewed by the City Engineer and the State has to show that the applicant is not increasing the amount of water to the drainage way and that report has to be designed from a ten to fifty-year storm.

Ms. Perkins stated she works from home and will be directly impacted by stage one and stage two. Stage three will be further away from her house. She noted her property is less than 80 feet from the applicant's property line. She stated she is on phone calls four to six hours a day with clients and this work would devastatingly impact her ability to work from her home, which she has done for 15 years. She raised concern about the removal of the fence and noted she would see the construction right out her back door. She stated the noise would impact her for six years and noted that her property value has decreased drastically due to this project.

Ms. Paula Fleming of 15 B Windsor Court was the next to address the Board. Ms. Fleming asked which trees are being proposed to be taken down and asked what percentage of trees are going to be left. She noted this is the only buffer she has from this project. Mr. Noonan stated he was not sure of the percentage but noted to the trees that would remain. He added any trees within the limit of the outer line will be removed for the construction of homes, roads and driveways, and there will be trees planted along the roadway. Ms. Fleming felt trees are necessary to contain the water. Mr. Noonan stated as he had mentioned earlier the stormwater management design is based on the number of trees being cut, the number of houses being built, and the amount of pavement being constructed.

Mr. Todd Rogers, Keene, addressed the Board and asked for added clarification on the water and sewer pipes. Specifically, he asked for clarification about the ownership of the utilities. Mr. Noonan stated as of now, sewer for septage is always plastic pipes; however, the water line is in question. For the City of Keene to own the water line, it must be steel, which could be cost prohibitive due to rising construction costs. If plastic were used to keep the cost of construction down, it means the HOA would own it. If the HOA owned the water line and there were a break in the water main or breach, a private contractor would be contacted to address that issue. If there were a break in the water main or breach and the City owned the line, the City would address that issue. He added ultimately, the applicant would like for the city to own this infrastructure, but it comes down to cost. Mr. Rogers stated he hoped it could be constructed out of steel so it doesn't have to be passed on to the homeowners.

Mr. Gowen addressed the Board again. He asked whether these homes are going to be constructed on specifications or when there is an interested party, or does the owner rent the homes. Mr. Noonan referred this question to the applicant, but he added the plan is to construct a home and then sell it. Applicant, Michael Guitard, stated his intent is to sell the units and add language into the HOA document that would prohibit a single person from owning several units as a rental investment. He does reserve the right to rent the units himself due to market conditions. He continued by stating his intent with the project is for ownership of a single condo by a single person in order to provide housing.

Mr. Craig Charles of 22 Evergreen Avenue stated he is a teacher and asked which school district this development would be part of. Chair Farrington stated the Board did not know the answer to that. Mr. Charles questioned the streetlights and asked for clarification. Mr. Noonan stated they are trying to

Mr. Bud Shaw of 712 Court Street stated he felt the State traffic calculations are not quite accurate and felt the number would be much higher. He questioned how much power each of the units

target the main intersection points to address safety.

would consume. He asked whether the capacity has been addressed. Mr. Noonan stated the applicant is working with Eversource but stated each house would have a minimum of a 100-amp panel, which will be feeding off Court Street. The transformer locations shown are based on the initial feedback from Eversource. The Chair referred Mr. Shaw to the traffic study included in the agenda packet.

With no further comment the Chair closed the public hearing.

## C. Board Discussion and Action

A motion was made by Roberta Mastrogiovanni that the Planning Board approve PB-2025-06 as shown on the plan set identified as "Guitard Homes Cottage Court" prepared by Fieldstone Land Consultants, PLLC at varying scales on March 21, 2025 and last revised on April 14, 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 title page, condo site plan, and master site plan.
- b. Submittal of five (5) full sized paper copies and a digital copy of the final plan set, including renderings.
- c. Submittal of an updated plan set that addresses all outstanding comments from the City Engineer and shows the proposed name for the private driveway, which shall be subject to review and approval by the City Engineer.
- d. Submittal of a security in a form and amount acceptable to the Community Development Director to cover the cost of landscaping, sediment and erosion control measures, and "as built" plans.
- e. Submittal of draft written documentation of the required utility easements and any other necessary legal instruments required for this application, which shall be subject to review by the City Attorney.
- f. The approved permit numbers for the Shoreland Protection, Alteration of Terrain & Wetlands Permits as well as any other required State permits shall be added to the proposed conditions plan on Sheet MP-1 of the plan set.
- 2. Subsequent to final approval and signature of the final plans by the Planning Board Chair, the following conditions shall be met:
- a. The applicant shall have two years to achieve "Active and Substantial Development" for each project phase, as follows:
  - i. Phase I May 1, 2027.
  - ii. Phase II May 1, 2029.
  - iii. Phase III May 1, 2031.
  - b. Prior to the commencement of site work, the following conditions shall be met:
- i. The Community Development Department shall be notified when all erosion control measures have been installed and Community Development staff shall inspect the erosion control measures to ensure compliance with the approved plans and all City of Keene regulations.
- ii. The 30' surface water buffer shall be flagged by a surveyor licensed in the State of New Hampshire and inspected by Community Development staff.
- c. Submittal of recorded utility easements and any other legal instruments necessary for this application to the Community Development Department.
- d. The applicant shall obtain final acceptance of the new utilities from the Keene City Council following the completion of all infrastructure construction.

- e. Following the initial installation of plantings, the Community Development Department should be contacted to perform an initial landscaping inspection to ensure compliance with the approved landscaping plan and all City of Keene regulations.
- f. One year after the installation of landscaping, the Community Development Department should be contacted to perform a final landscaping inspection to ensure that all plantings are in good health.

The motion was seconded by Mayor Kahn.

The Mayor stated he would like to understand the intent of the HOA. He stated the hope is that this development is providing owner occupied housing and stated he would like to hear this intent from the applicant. Ms. Brunner stated her understanding is that these units would be owner-occupied and the owner's intent is to sell these as condos. The Homeowners' Association is a requirement of the city because anytime you have land that is in common ownership, there needs to be an entity to take care of the shared infrastructure.

Mr. Guitard added the intent is to sell all the homes and that they will be privately owned. He does not want a large entity to purchase the homes and rent them out. However, if there were a market crash or other conditions, he reserves the right to rent the units.

The Mayor noted to the abutter to the south asked about noise. He asked what conditions the developer plans to have in place during construction and post construction to address the noise and visual concerns that were raised. Ms. Brunner stated the city has a noise ordinance; construction cannot start until 7 am and can't go past 9 pm. She added the applicant's intent is to retain the tree buffer, but the Board can always ask for a stretch of fencing.

The Chair re-opened the public hearing and asked Mr. Noonan to address this concern. He referred to the area of concern and stated there is no fence being proposed and went on to say that because the applicant is building the houses himself one at a time, there will be construction noise but not as much as if they were built all at once. Once the project is completed, the noise level would be similar to any residential neighborhood.

Lisa Perkins of 649 Park Street addressed the Board. Ms. Perkins referred to the Staff Report section as follows: Screening: This standard states that a 6'-tall opaque or semi-opaque fence is required if the building type is proposed to be more intense than the adjacent building type. Given that the subject parcel is surrounded by commercial uses to the north and west, vacant land to the east, and single-family homes to the south, no screening is required; however, the applicant is proposing to maintain some of the existing wooded vegetation around the perimeter of the site and install a fence near the site access from Court St. This standard appears to be met.

Ms. Perkins stated she does not understand this section of the Staff report, stating that her single-family home abuts this property. Ms. Fortson addressed the intent behind the standard. The standard applies to the scale of construction, rather than the number of units. For example, if there were a five-unit apartment building constructed, compared to the single-family units that are proposed in this project.

Ms. Perkins stated that her home-office will be impacted by the 29-unit construction. She stated a fence could potentially help.

The Chair closed the public portion of the meeting.

Mr. Kost felt the City Engineer has addressed the stormwater issues quite well and did not feel this project would have any off-street stormwater impact.

With respect to noise, he felt a six-foot fence, or a row of trees, would not likely reduce noise for the abutters. He stated it takes more than a six-foot fence to mitigate noise. He added this is a much-needed project and was pleased it was close to the hospital for anyone who might be employed with the hospital.

The Chair asked for the Board comment on regional impact. Ms. Markelon stated this project will have no regional impact.

The Mayor thanked the public for their comments. He added he did not feel a six-foot fence would add any mitigation for noise. It might mitigate visual impacts. The Mayor went on to say the City created the Cottage Court Conditional Use Permit with the understanding that urban infill was going to occur where there is existing water, sewer and residential areas. He stated this is one of the strategies the City has embraced to address its housing shortage. As far as regional impact, there are some localized effects, but regionally this would be a desirable project and should help the City address its housing issue.

Mr. Hoefer commended the proposal and expressed his awkwardness listening to Ms. Perkins' concerns, as he had worked with her previously with another employer. He further stated, as was mentioned by the Mayor, this is the kind of housing project that is needed in Keene.

The Mayor indicated the request for a fence is something he felt the owner could address but is a not a condition the Board should require.

The motion made by Roberta Mastrogiovanni carried on a unanimous vote.

6) <u>Master Plan Update (KeeneMasterPlan.com)</u>

 Ms. Brunner stated the first update is that there is an online story map that has been launched for the Master Plan project at <u>keenemasterplan.com</u>. There is also a short, two-question survey that anyone can take. Ms. Brunner noted the online story map goes through the six pillars and some draft goals. She encouraged people to take the survey to provide additional input. The survey will be taken down from the website on April 30<sup>th</sup>.

The Future Summit event is scheduled for June 3rd at the Keene Public Library in Heberton Hall from 5:00 to 7:00 PM and it is open to the public. Staff is asking for registration to get a head count for catering purposes. This will be an opportunity to hear directly from staff and the consultant team. The Planning Board Chair will be talking about the Master Plan process and what the results are.

731 She added that this would be an interactive, community event.

- 733 There is a Master Plan Steering Committee meeting next week on Tuesday. There will be a 734 decision-making tool coming out soon, which will be sent out to decision makers; additionally, the
- 735 Planning Board is included in this process. The decision-making tool will be sent out to the Board,
- 736 City Council, City leadership and Task Force members who worked on the Master Plan Steering
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- Committee as well as the Master Plan Steering Committee itself. The survey would ask people to
- 738 prioritize the goals and action steps under each goal. The survey will assist the City in its
- 739 determination of the highest priority items to be acted on within the implementation plan. The 740 responses are due back on May 11<sup>th</sup>.
- 741 The target date for the draft Master Plan to be sent out for review to the Master Plan Steering
- 742 Committee is June 3. The final meeting is scheduled for June 10<sup>th</sup>. If the Master Plan Steering
- 743 Committee members are comfortable with it at that point, they could potentially vote on it that
- 744 night to send it to City Council and then the Planning Board for adoption.

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Mr. Kost clarified during the draft stage there won't be a lot of opportunity for people to provide fresh input. Ms. Brunner stated it is necessary to make sure the community is comfortable with the draft, but did not feel there would be any surprises in the draft. However, if there is a need for additional review, the process can be paused, but the schedule is to move the plan forward for adoption in June.

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## 7) Staff Updates

## a) Notice of Council Action – Request for Annual Reports from Boards and Commissions

Ms. Brunner stated the Council has requested all Boards and Commissions to provide the City Council with a report by July 1 to inform the Council of its activities. Staff is asking each Chair to outline what their individual Board or Commission has worked on throughout the year.

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Mr. Kost felt all this information is enshrined in the minutes and videos. He asked if this was just the top five things and how much detail was being requested. Chair Farrington stated Councilor Haas' memo is intended to be used as a way to get more recognition for each Board and Commission; in addition, the City Council would get more visibility into these Boards. The Mayor stated it is not the intent that all the different Bodies would submit this information by a date certain. It is not only to have a recap, but also to give the Council an idea of what is coming in the future.

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### b) Frequency of Updates on Administrative Planning and Minor Site Plan Approvals

Ms. Brunner stated that as discussed last month, the Board had agreed to switch from being provided an Administrative Planning and Minor Site Plan Approval update every year to every six months. She stated project folders for these items are available on the fourth floor.

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The Mayor stated he is glad these files can be easily accessed. Ms. Brunner stated the approvals are listed on the website, if the Board would like to follow along.

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Ms. Forton added that any decisions that are made at the Minor Project Review Committee meetings are posted on the website by the next day.

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## c) Potential Modifications to the Site Plan Review Thresholds

- 778 Ms. Brunner began by stating the Board's site plan review authority is in New Hampshire Revised 779 Statute Annotated 674-43. Under the State Statute, it allows municipalities that have adopted a
- 780 zoning ordinance and subdivision regulations to authorize the Planning Board to review and

approve site plans for development or change or expansion of use of tracks for nonresidential uses or for multifamily dwelling units. Multifamily is defined as a structure with more than two units.

The Board, however, does not have jurisdiction over a single family and two-family unit.

In the City of Keene, the Planning Board has delegated some of its site plan review authority to a Committee of Staff, referred to as the Minor Project Review Committee. Ms. Brunner referred to the thresholds for site plan review on the screen.

If a building is above a certain size, it impacts a certain amount of land, or you're increasing traffic by a certain amount, that application has to go before the Planning Board for major site plan review. For certain items, Staff have the discretion as to whether that item needs to go before the Board or not. If you fall below one of those thresholds, you go to that Minor Project Review Committee for a Minor Site Plan review. The benefit to that is, this Committee is a Committee of Staff that meet during the day, and the timeframe is significantly shorter.

For the Planning Board, the application deadline is six weeks before the Planning Board meeting. Typically, an applicant will get a conditional approval, which means they have to now meet those conditions of approval before they can get final approval, where they have to come back to the Planning Board and then they can get their building permit.

With the Minor Project Review Committee, it is a three-week turn around, which Ms. Brunner stated is a huge benefit to applicants. The Minor Project Review Committee is still a noticed public hearing, and abutters get noticed as well. Abutters have the opportunity to come into the planning office to look at the project ahead of time or send in written comments, if they can't make it to the public hearing. If an application falls below the threshold for Minor Project Review, it is reviewed administratively by Staff.

<u>Thresholds</u>: The first threshold is the square footage of gross floor area of new construction. If you are building a new principal building or structure that is greater than 5,000 square feet in gross floor area, you are automatically at the Planning Board. If it is between 1,000 and 5,000 square feet, you can go to the Minor Project Review Committee. Under 1,000 square, staff can review that project.

Additions: If you have an existing building or structure and you are adding an addition that is greater than 15% of the gross floor area of the existing principal building. This would be the threshold for Planning Board review. If it is between 10% and 15%, it goes to the Minor Project Review Committee, and if it is below 10%, it can be reviewed administratively by staff.

<u>Traffic:</u> If the project results in a change or increase of vehicle trips per day by 100, or per peak hour of 50, the project requires review by the Planning Board. Below that threshold, it could be minor project or administrative.

<u>Installation of Impervious Surfaces</u>: The installation of impervious surfaces, such as pavement or gravel that exceeds 10,000 square feet in contiguous area, goes to the Planning Board. Anything less would go before the Minor Project Review Committee, which, at the discretion of the Community Development Director and based on the nature of the proposal, warrants Minor Site Plan review.

828 Land Disturbance: Land disturbance that impacts one acre or greater of land area goes to the 829 Planning Board. Disturbance of less than one acre can go to the Minor Project Review Committee 830 at the discretion of the Community Development Director.

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- 832 Modifications to Site or Building: Modifications, such as lighting, landscaping, facade alteration, 833 etc., which is at the discretion of the Community Development Director or their designee, warrants
- 834 Major Site Plan review. Ms. Brunner stated this is one situation in which Staff would often consult

835 with the Planning Board Chair.

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837 Change of Use: Change of use is at the discretion of the Community Development Director or their 838 designee as to what situation warrants Major Site Plan review, Minor Site Plan review, or 839 administrative review.

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841 Ms. Brunner went over some examples as to how this has been applied to residential projects in 842 Keene.

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844 Example 1: New construction of an undeveloped lot. The proposal is for a four-unit multi-family 845 building, with 4,600 square feet of gross floor area. This project would likely be going to the Minor 846 Project Review Committee because it is below the 5,000 square foot threshold and four units would 847 not have too much change to traffic volume.

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849 Example 2: Three-unit building with an addition of 1,000 square feet. The existing building is 850 5,559 square feet, still remains at three units but the addition is 18% of the principal structure. This 851 would be Major Site Plan review and will be sent to the Planning Board for review.

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Example 3: Change of use of a 92,180 square foot mill building to 90 residential units. No changes to the exterior of the building. Reduction in traffic. This is something that could be reviewed administratively.

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Questions for the Board:

858 1. Should a change of use – commercial space to residential units with reduced impact – require 859 site plan review? If the answer is a yes, then what should the threshold be?

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861 2. What number of new residential units should require Major Site Plan review? Would the number be 20? 862

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864 3. What number of new residential units should require Minor Site Plan review? Would the number 865 be 10-19?

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4. What number of new residential units should require administrative review? Would the number 867 868 be 3-9?

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870 5. Should the threshold for additions only apply to commercial uses? 871

872 Ms. Brunner stated the Board could reach back out to Staff with answers to the questions above.

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874 The Chair asked whether there is any public input for administrative review. Ms. Brunner stated 875 there was none. Decisions are posted on the website and people have the right to appeal the decision to the Planning Board. The Chair asked about standing. Ms. Fortson stated under Article 27.5 of the Land Development Code, appeals of the Community Development Director decision has to be made to the Planning Board provided that the notice of appeal of the decision is filed with the Community Development Department within 20 calendar days from the date of the Community Development Director's decision. This would be the same process for Minor Site Plan review.

Mr. Kost asked about the one-acre issue. He noted that one-acre in the rural district or industrial district is very different to one-acre downtown. He felt if one-acre development was happening in the downtown, this could be something that should be reviewed. Ms. Brunner stated this is something that would require discretion and would be reviewed by Staff.

Mr. Hoefer asked about looking at more time items and scheduling an additional meeting to look at these items. The Chair stated scheduling meetings on a different day could get complicated as this would require public notice, etc. Mr. Hoefer asked whether there was an opportunity for a workshop-style situation. Ms. Brunner stated anytime the Board meets to discuss items, because of the right to know law, the meeting needs to be noticed, and minutes must be taken. There are some communities where the Board meets twice a month; specifically, there is one meeting to review applications and the other would be a working meeting. This is something that could be considered for this body, but scheduling could be an issue. The Chair asked that comments on this be sent to Staff by email.

The Mayor suggested that perhaps, once the Master Plan session comes to an end, that day could be used as a workshop. The Mayor drew attention to the 91A disclosure issue if the Board were to send comments to Staff using email. He stated that it would be necessary to solicit individual comments from Board members, assemble it, and have a conversation that is transparent and open. Ms. Brunner stated that she shares the Mayor's concern, to some extent, regarding the Board sending comments to Staff through email due to the need for this item to be shared publicly. She continued by stating that she intends for the public to have an opportunity to hear the comments made by the Board members. For example, scheduling a public workshop to discuss this item or continuing to include this agenda item on future agendas would be a space to keep the conversation going publicly. Ms. Brunner stated it was a great suggestion to include this item in future agenda packets.

## 8. New Business

None

## 9) Upcoming Dates of Interest

- Joint Committee of the Planning Board and PLD May 12th, 6:30 PM
- Planning Board Steering Committee May 13th, 12:00 PM
- Planning Board Site Visit May 21st, 8:00 AM To Be Confirmed
  - Planning Board Meeting May 27th, 6:30 PM

### **10) More Time Items**

a) Training on Site Development Standards - Snow Storage, Landscaping, & Screening

### 11) Adjournment

	PB Meeting Minutes April 28, 2025	DRAFT
924 925	There being no further business, Chair Farrington adjourned the meeting at 9:28 PM.	
926	Respectfully submitted by,	
927 928	Krishni Pahl, Minute Taker	
929 930	Reviewed and edited by, Emily Duseau, Planning Technician	



## **MEMORANDUM**

**TO:** Planning Board

**FROM:** Community Development Staff

**DATE:** May 16, 2025

**SUBJECT:** Agenda Item A.3 - 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, the following application is ready for final approval:

1. PB-2024-22 - Subdivision - Monadnock Conservancy, 0 Ashuelot St (TMP #567-001-000)

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-2025-10 - BOUNDARY LINE ADJUSTMENT - 37 & 38 GRIMES RD BLA

## **Request:**

Applicant Cardinal Surveying & Land Planning, on behalf of owners Christopher & Jennifer Tattersall & the Margaret A. Heatherman Trust, proposes to transfer ~10.34-ac of land from the ~31-ac parcel at 37 Grimes Rd to the ~29-ac parcel at 38 Grimes Rd (TMP#s 237-026-000 & 236-015-000). Both parcels are located in the Rural District.

## **Background:**

The subject parcels are located in southeast Keene north of Arch St and west of Stonewall Farm. Grimes Rd connects to Arch St approximately 2,500 ft. to the northeast of the Route 9 intersection and provides street access for only the two subject parcels. The property at 37 Grimes Rd is an existing ~30-ac parcel on the east side of Grimes Rd with a single-family residence, detached garage, and in-ground pool. The property at 38 Grimes Rd is an existing ~29-ac parcel on the west side of the road with a single-family residence and detached garage.

The applicant proposes to transfer ~10ac of land from the northern portion of 37 Grimes Rd, shown as parcel "A" on the BLA plat, to 38 Grimes Rd. The land transfer, combined with a recent lot merger, will bring 38 Grimes Rd to ~40-ac



Fig. 1. Aerial image of 37 Grimes Rd in purple and 38 Grimes Rd in green.

in size and reduce 37 Grimes Rd to  $\sim$ 20-ac in size. There is no development proposed as part of this application beyond the transfer of land between the two existing parcels.

### **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 exemptions from submitting separate existing and proposed conditions plans, all technical reports, and a plan showing the metes and bounds of all parcels. 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."

# STAFF REPORT

## **Departmental Comments:**

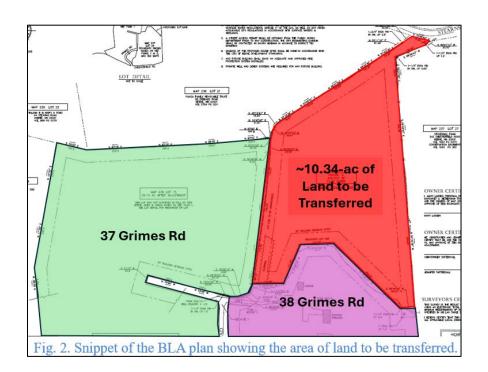
None

<u>APPLICATION ANALYSIS:</u> The following is a review of the Planning Board Subdivision Regulations relevant to this application.

**SECTION 20.2.1 – LOTS:** The applicant proposes to transfer ~10.34-ac of land identified as "Parcel A" on the BLA plat from 37 Grimes Rd (TMP# 237-026-000) to 38 Grimes Rd (TMP# 236-015-000) as shown in Figure 2. Following the land transfer, both subject parcels will continue to conform to all zoning requirements of the Rural Zoning 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	37 Grimes	38 Grimes		
	Rural	Rural		
Required in District	2-ac	2-ac		
Before BLA	30.99-ac	29.39-ac		
Amount of Land Transferred	-10.34-ac	+10.34-ac		
After BLA Parcel Size	20.65-ac	39.73-ac		

<u>SECTION 20.2.2 – CHARACTER OF LAND FOR SUBDIVISION:</u> Both parcels are characterized by areas of open field as well as forested areas. Both lots contain single-family residences and associated site improvements. There are no new developable lots being created as part of this application and no new development of the existing lots is being proposed at this time. It appears that this standard has been met.



## STAFF REPORT

<u>SECTION 20.2.3 – SCATTERED OR PREMATURE DEVELOPMENT:</u> This application does not propose the creation of any new lots or development at this time. This standard is not applicable.

<u>SECTION 20.2.4 – PRESERVATION OF EXISTING FEATURES:</u> This application does not propose the creation of any new lots or development at this time. This standard is not applicable.

**SECTION 20.2.5 – MONUMENTATION:** The applicant proposes to install rebar pins at all corners along the proposed property line. 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. It appears that this standard has been met.

<u>SECTION 20.2.6 – SPECIAL FLOOD HAZARD AREAS:</u> The subject parcels are not located in the 100-year flood plain. This standard is not applicable.

**SECTION 20.2.7 – FIRE PROTECTION & WATER SUPPLY:** This application does not propose the creation of any new lots or development at this time. This standard is not applicable.

**SECTION 20.2.8 – UTILITIES:** The applicant does not propose to install any new utilities as part of this application. This standard is not applicable.

#### **Recommended Motion:**

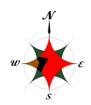
If the Board is inclined to approve this request, the following motion is recommended:

"Approve PB-2025-10 as shown on the plan identified as "Boundary Line Adjustment" prepared by Cardinal Surveying & Land Planning at a scale of 1 inch = 80 feet on April 18, 2025 and last revised May 6, 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 four (4) full-sized paper copies and 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."

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

SECTION 1: PROJECT INFORMATION				
Boundary Line Adjustme	NUMBER OF PARCELS AFFECTED: Map 237 lot 26 Map 236 lot			
PROJECT ADDRESS(ES): 37 & 38 Grimes Rd	15			
SECTION 2: CONTACT INFORMATION				
PROPERTY OWNER #1	PROPERTY OWNER #2			
NAME/COMPANY: Margaret A Hetherman Trust	NAME/COMPANY: Christopher & Jennifer Tattersall			
MAILING ADDRESS: 2400 S ocean Dr #4272, Fort Pierce, FL 34949-7980	MAILING ADDRESS: 38 Grimes Rd, Keene NH 03431			
PHONE: 978-460-1181	PHONE: 603-762-3111			
mhlassen1@gmail.com	tec@tattersallelectric.com			
SIGNATURE: Mary Lasser Tustee	SIGNATURE: Chris Tattersall			
Mary Lassen	PRINTED NAME: Christopher Tattersall			
APPLICANT / AUTHORIZED AGENT	FOR OFFICE USE ONLY:			
NAME/COMPANY: Cardinal Surveying & Land Planning, Wendy Pelletier	TAX MAP PARCEL #(s):  2 3 7 - 0 26 - 0 00 - 1 31 acres - 37 Grimes			
MAILING ADDRESS: PO Box 160, Sullivan NH 03445	236-015-000-, 29.39 acres - 38 Grimes			
PHONE: 603-209-1989				
wendy@cardinalsurveying.net	PARCEL SIZE:  31 and 29.39 ac  DATE STAMP:  DE GE IVE			
SIGNATURE: Mundy & Pellet	ZONING: Rural APR 1 8 2025			
Wendy Pelletier	PROJECT #:  18- 2625-10			



## CARDINAL SURVEYING & LAND PLANNING

PO Box 160
Sullivan, NH 03445
(603) 209-1989
www.cardinalsurveying.net

Boundary Line Adjustment Margaret A. Hetherman Trust Mary E. Lassen, Trustee 37 Grimes Rd Keene, NH 03431

## **Project Narrative**

TM 237-026-000 (37 Grimes Rd) is a 31 acre parcel in the Rural District. There is one dwelling on the lot. TM 236-015-000 is a 29.39 acre parcel also in the Rural district with one Dwelling.

The owners are proposing a boundary line adjustment reducing the size of lot 26. Lot 26 will be 20.66 acres. 10.34 acres from lot 26 will be added to lot 15 and will now be 39.73 acres.

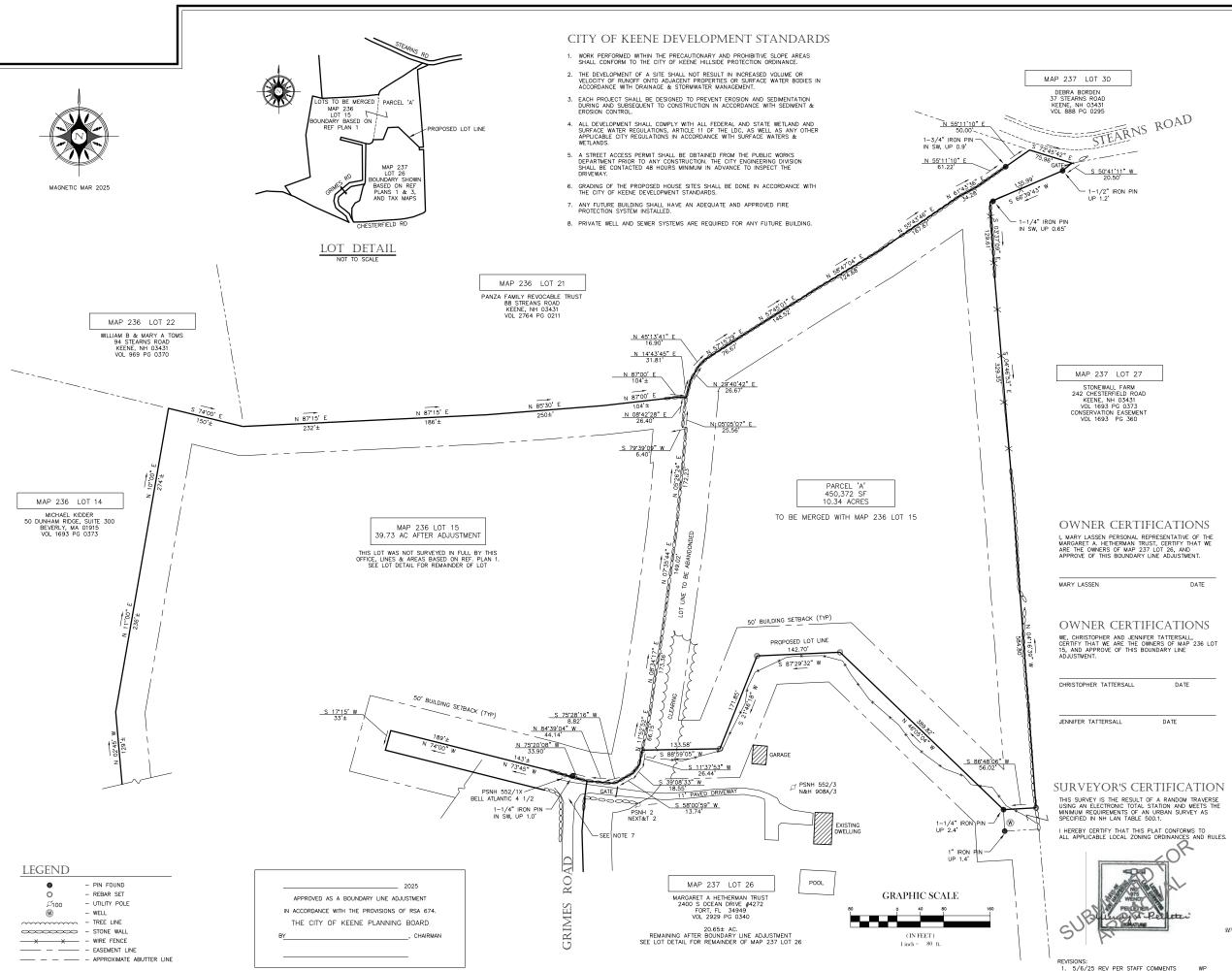
There are no buildings, improvements or changes in use proposed on the lots at this time. The proposal complies with article 20 and is exempt from article 21 of the LDC.

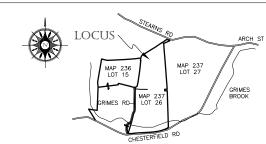
We request an exemption from providing an existing conditions and a proposed conditions plan, and from showing any wetlands, precautionary and prohibitive slopes. This project is to adjust the lot lines only and no additional development is planned.

## Request for Waivers

Section 26.10.8.B.2 Full boundary survey and metes and bounds shown on all lots

- 1. A survey was performed, and metes and bounds have been shown in the area of the boundary line adjustments only. The remainder of lots 236-015-000 and 237-026-000 are based on a prior recorded survey by Flavin in 1999 and 2001 This should satisfy the intent of the regulations.
- 2. Granting the waiver will have no adverse impact on the abutters, the community or the environment. There are no changes to any exterior lot lines.
- 3. A survey of the entire additional area of over 61 acres would create a hardship for the owners when the lots have been previously surveyed in full.





# LOCUS MAP

#### NOTES

THE PURPOSE OF THIS PLAN IS TO ADJUST THE BOUNDARY LINE BETWEEN MAP 237 LOT 26 AND MAP 236 LOT 15.

2. OWNERS OF RECORD:
MAP 237 LOT 26
MARGARET A HETHERMAN TRUST
2400 S OCEAN DR #4272
FORT, FL 34949
VOLUME 2929 PAGE 0340

MAP 236 LOT 15 CHRISTOPHER C & JENNIFER K TATTERSALL TRUST 38 GRIMES ROAD KEENE, NH 03431 VOLUME 2230 PAGE 0139

3. AREAS:

MAP 237 LOT 26

EXISTING: 31± ACRES PER TAX MAP

PARCEL A: - 10.34 ACRES

ADJUSTED: 20.66± ACRES

MAP 236 LOT 15 EXISTING: 29.39 ACRES PER PLANS PARCEL A: + 10.34 ACRES ADJUSTED: 39.73 ACRES

- 4. MAP AND LOT NUMBERS REFER TO THE CITY OF KEENE TAX MAPS.
- 5. CURRENT ZONING: RURAL DISTRICT

MIN. LOT AREA - 2 ACRES BUILDING SETBACKS: FRONT - 50 FEET SIDE - 50 FEET REAR - 50 FEET

- GRIMES ROAD IS SHOWN BASED ON STONEWALLS. NO LAYOUT WAS FOUND PER THE KEENE STREET INDEX.
- 7. THE BOUNDARY LINE BETWEEN MAP 237 LOT 26 AND MAP 236 LOT 15 IS SHOWN AS THE CENTERLINE OF THE ROAD ON REFERENCE PLAN 1, PER THE DEEDS. THE PUBLIC HAS AN EASEMENT OVER THE ROAD BED. THE BOUNDARY LINE IS. SHOWN GOING ALONG THE STONEWALLS WITH RIGHTS TO THE CENTERLINE. THEREFORE MAP 236 LOT 15 HAS RIGHTS TO ACCESS THE LOT BETWEEN THE IRON PIPE AND LOT
- 8. MAP 237 LOT 26 AND MAP 236 LOT 15 ARE NOT WITHIN THE 100 YEAR FLOOD PLAIN.

#### DISCLAIMERS

- I. THE PARCEL MAY BE SUBJECT TO OTHER EASEMENTS AS THEY EXIST OF RECORD OR IN FACT, CARDINAL SURVEYING AND LAND PLANNING DOES NOT INTEND OR REPRESENT THAT ALL RIGHTS AND EASEMENTS AFFECTING THE SUBJECT PROPERTY ARE SHOWN, A SPECIFIC TITLE EXAMINATION IS SUGGESTED TO DETERMINE THE NATURE AND EXTENT OF RIGHTS AND EASEMENTS AFFECTING THE SUBJECT PROPERTY.
- 2. THE LOCATION OF ANY UTILITY INFORMATION SHOWN ON THIS PLAN APPROXIMATE. CARDINAL SURVEYING & LAND PLANNING MAKES NO CLAIMS TO THE ACCURACY OR COMPLETENESS OF THE UTILITIES SHOWN, FIELD VERIFICATION IS REQUIRED PRIOR TO ANY EXCAVATION ON THE SITE.
- 3. MAGNETIC BEARINGS SHOWN HEREON ARE BASED ON A COMPASS OBSERVATION TAKEN IN MARCH 2025 AND ARE FOR REFERENCE ONLY AND SERVE TO PROVIDE AN ANGULAR RELATIONSHIP BETWEEN LINES. VARIATIONS IN MAGNETIC BEARINGS MAY BE AFFECTED BY A CONSTANTLY CHANGING MAGNETIC DECLINATION AND LOCAL ATTRACTION.
- CARDINAL SURVEYING & LAND PLANNING IS NOT RESPONSIBLE FOR PROPERTY DESCRIPTIONS PREPARED BY OTHER PERSONS FOR CONVEYANCE OF THE PROPERTY SHOWN HEREON.

#### REFERENCE PLANS

SCALE: 1"= 80'

- I LEATY OF THE PROPERTY OF THE
- "SURVEY BY HERBERT E RUSSELL SR., REGISTERED LAND SURVEYOR, STATE OF NEW HAMPSHIRE"; PREPARED BY HE. RUSSELL SR; DATED DEC 1971; SCALE 1"=50; ON FILE AT CITY OF KERNE ENG. DEPT.
- "PROPERTY OF STONEWALL FARM, A NEW HAMPSHIRE NONPROFIT CORPORATION, CONSERVATION EASEMENT AREAS IN FAVOR OF SOCIETY FOR THE PROTECTION OF NEW HAMPSHIRE FORESTS, CHESTERFIELD ROAD, CHESTERFIELD, NHT; PREPARED BY THOMAS W. FLAVIN, JR.; DATED MARCH 16, 1999; SCALE 1=200'; RECORDED AT CORD PLAN C12—D04—0007.

## BOUNDARY LINE ADJUSTMENT

MAP 237 LOT 26, MAP 236 LOT 15 37 & 38 GRIMES ROAD KEENE, NH 03431

#### PREPARED FOR

THE MARGARET A. HETHERMAN TRUST &

CARDINAL SURVEYING & LAND PLANNING PO Box 160

Sullivan, New Hampshire 03445 Tel. (603) 209-1989 30 of 160 DATE: APR 18 2025

SHT 1/



## **MEMORANDUM**

**TO:** Planning Board

**FROM:** Megan Fortson, Planner

**DATE:** May 16, 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 the Planning Board meeting on Monday, July 28, 2025 at 6:30 pm in Council Chambers on the 2<sup>nd</sup> Floor of City Hall.

## **Background:**

At the request of the applicant, the Board voted at the March 24<sup>th</sup> meeting to continue the above-referenced application to May 27, 2025. Updated materials were submitted by the applicant on May 9, including two additional waiver requests from Sections 25.3.3 and 25.3.6 of the Land Development Code (LDC) related to excavation below the water table and acid mine drainage. Staff are working with the applicant, property owner, and third-party consultant, Fieldstone Land Consultants, to facilitate the review of these updated materials. The applicant has submitted a request to continue the public hearing for this project to the Planning Board meeting on July 28, 2025.

Included as attachments to this memo are the continuance request, the updated application materials that have been submitted, and the most recent Planning Board decision letter that has been issued for this project. Links to the applicable Planning Board agenda packets and meeting minutes are included below. Additional information is available on the Planning Board webpage at <a href="https://keenenh.gov/planning-board/">https://keenenh.gov/planning-board/</a>.

## **Planning Board Agenda Packets:**

- February 24, 2025
- March 24, 2025

## **Planning Board Meeting Minutes:**

- February 24, 2025
- March 24, 2025



From: <u>Ariane Ice</u>
To: <u>Megan Fortson</u>

Cc: Justin Daigneault; Brenton Cole; Jeff Merrit; Mari Brunner; Evan Clements; Emily Duseau; Chad Branon; Joel Banaszak;

Cody Gordon

**Subject:** Extension request 7/28/25

**Date:** Thursday, May 15, 2025 11:04:32 AM

## Hello Megan,

Thank you for your patience. I would like to formally request on behalf of G2 Holdings an extension of the hearing currently scheduled for May 27th until the July 28th hearing date. As per our earlier discussion, representatives of the applicant will be in attendance on 5/27 in case there are any questions regarding this request.

If there is anything further your office requires please let me know.

Thank you for your assistance in this matter.

Ariane Ice

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

SECTION 1: PROJECT INFORMATION				
G2 Holdings, LLC		TYPE OF APPLICATION BEING SUBMITTED:  □ EARTH EXCAVATION PERMIT  ■ MAJOR AMENDMENT  □ MINOR AMENDMENT  □ PERMIT RENEWAL		
PROJECT ADDRESS(ES): 57 Route 9				
SECTION 2: CONTACT INFORMATION				
PROPERTY OWNER		API	PLICANT	
G2 Holdings, LLC	MAME/COMPANY: G2 Holdings, LLC			
MAILING ADDRESS: 250 North Street, Jaffrey, NH 03452	MAILING ADDRESS: 250 North Street, Jaffrey, NH 03452			
PHONE: 603-325-8457	PHONE: 603-325-8457			
cody@mygordonservices.com	cody@mygordonservices.com			
SIGNATURE: A Hydr	SIGNATURE: AMAR			
Cody Gordon	PRINTED NA	Cody G	ordon	
AUTHORIZED AGENT (if different than Owner/Applicant)		FOR OFFI	ICE USE ONLY:	
NAME/COMPANY: Granite Engineering, LLC	TAX MAP PA	ARCEL #(s):		
MAILING ADDRESS: 150 Dow Street, Suite 421, Manchester, NH 03101			'	
PHONE: 603-518-8030	PARCEL SIZE	i.	DATE STAMP:	
jdaigneault@graniteeng.com	ZONING DIS	TRICT:		
SIGNATURE: Just Dagut				
Justin Daigneault	PROJECT #:			

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: GRAVEL AND EARTH REMOVAL PLAN, G2 HOLDINGS	AREA OF PRECAUTIONARY SLOPES TO BE IMPACTED: (in square feet) Lot 7 = 202,015 SF			
PROJECT ADDRESS(ES): 57 ROUTE 9, TAX MAP 215, LOTS 7 & 8	202,013 31			
SECTION 2: CONTACT INFORMATION				
PROPERTY OWNER	APPLICANT			
NAME/COMPANY: G2 Holdings, LLC	NAME/COMPANY: G2 Holdings, LLC			
MAILING ADDRESS: 250 North Street, Jaffrey, NH 03452	MAILING ADDRESS: 250 North Street, Jaffrey, NH 03452			
PHONE: 603-325-8457	PHONE: 603-325-8457			
EMAIL: cody@mygordonservices.com	EMAIL: cody@mygordonservices.com			
SIGNATURE: And	SIGNATURE: A Hash			
PRINTED NAME: Cody Gordan	PRINTED NAME;  Cody Gordan			
AUTHORIZED AGENT (if different than Owner/Applicant)	FOR OFFICE USE ONLY:			
NAME/COMPANY: Granite Engineering, LLC	TAX MAP PARCEL #(s):			
MAILING ADDRESS: 150 Dow Street, Suite 421, Manchester, NH 03101				
<u>PHONE:</u> 603-518-8030	PARCEL SIZE:  DATE STAMP:			
EMAIL: jdaigneault@graniteeng.com	ZONING DISTRICT:			
SIGNATURE:				
Justin Daigneault	PROJECT #:			



Surveying • Engineering
Land Planning • Septic Designs

206 Elm Street, Milford, NH 03055 - Phone: 603-672-5456 - Fax: 603-413-5456 www.FieldstoneLandConsultants.com

February 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 for completeness to the applicable City of Keene Land Development Code. The following documents were submitted for our review:

- Transmittal Letter prepared by Granite Engineering LLC, dated December 19, 2024.
- Earth Excavation Permit Application, dated December 12, 2024
- Community Development Department Certified Notice List, dated December 12, 2024
- Owner Affidavit
- Project Narrative
- Natural Heritage Bureau Environmental Review, dated February 6, 2024
- Hydrogeologic Investigation Report, dated December 18, 2024
- Acid Mine Drainage Report, dated December 18, 2024
- Request for waivers to Article 25.3.1.D and Article 25.3.13 with exhibits
- Gravel and Earth Removal Plan Set, dated December 20, 2024
- Hillside Protection Conditional Use Permit Application with Exhibits
- Copy of Alteration of Terrain Permit and Stormwater Management Application, dated December 20, 2024



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

Page 2

- City Response Letter, dated February 3, 2025
- Stormwater Pollution Prevention Plan, Dated January 30, 2025
- Stormwater Management Report, dated January 22, 2025
- Revised Plan Set, last revised February 3, 2024

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.

## **Section 25 Earth Excavation Permit:**

- 1. <u>Section 25.2B</u>: 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.
- 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 outlined in the Acid Mine Drainage Potential Report and we believe the stormwater management report does not currently adequately address the surface water conditions.
- 3. <u>Section 25.3D</u>: 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.
- 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.
- 5. <u>Section 25.3.4.A.1:</u> 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 since the current design does not appear to have adequate separation to water. Additional investigation may also be required depending on the consultant's responses surrounding concerns for potential impacts.



Page 3

6. <u>Section 25.3.4.A.2:</u> 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 locations. For example, SLR-12 appears to be missing and the excavation at this location is approximately 855+/- based on what we understand to be its location. This appears to be 30+ feet below the observed seasonal water table.



## 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)		Bottom Well Elevation from Ground Surface (feet)	PVC Well Screen Interval (feet)	Depth to	Depth to Groundwater from Ground Surface (feet)	Elevation
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 ±

- 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 Hydrogeologic Investigation provide the well data (depth of water and baseline testing of these wells since they are located on the site. The monitoring plan may want to include one or more of these wells too.
- 8. <u>Section 25.3.4B3A:</u> The soil logs and borings in Period 8 do not seem to meet the requirements outlined in this section.
- 9. <u>Section 25.3.4C:</u> 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.
- 10. <u>Section 25.3.6</u>: 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



Page 4

- report outlines that borings 1 through 8 have the elements or compounds that could produce acid mine drainage.
- 11. <u>Section 25.3.7:</u> 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.
  - b. This should include monitoring the same observation points and modeling the closest downstream structures that route the runoff from the site.
  - 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.
  - 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.
    - 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.
    - iii. The report should compare peak rates and volumes at the two observation points.
    - iv. Confirm adequate depths to ESHWT are being provided.
    - v. Verify inlet conditions and culvert cover for cross-culverts.
    - vi. Ditch (reach) modeling and capacity analysis should account for stone check dams.
    - vii. The report and plans need to include an inspection and maintenance manual outlining all stormwater practices with recommended inspection and maintenance.
  - e. It is unclear what the intentions are for handling stormwater and the transition between Phases or Periods.
- 12. <u>Section 25.3.8:</u> A review of site photographs and the plans provided shows that the project



Page 5

- 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.
- 13. <u>Section 25.3.10:</u> Note #21 of the Operations Notes makes reference to known important Archeological sites. Please clarify if there are any such sites on-site.
- 14. <u>Section 25.3.12:</u> 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.
- 15. <u>Section 25.3.13:</u> Per this section the excavation areas shall not exceed 5-acres. The applicant is seeking a waiver from this section.
- 16. <u>Section 25.3.17:</u> 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 will be brought into compliance with the approved plans.
- 17. <u>Section 25.3.25:</u> The plans should be revised to incorporate notes addressing record keeping per this section.
- 18. <u>Section 25.3.26:</u> The applicant shall provide the Community Development Department copies of all local, state and/or federal permits required for this project.
- 19. <u>Section 25.4.1D:</u> 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.
- 20. <u>Section 25.4.6:</u> We would recommend that the reclamation plans be revised to incorporate the remediation note outlined in this section.

#### **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.
- 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 selfcontained including but not limited to existing access roads, etc.. This note misrepresents current and proposed conditions.
- 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.
- 4. Existing Conditions Sheets should show setbacks and buffers. The limit of disturbance line



Page 6

- 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.
- 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?
- 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.
- 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.
- 8. Sheet 12 and 14 of 22 Additional Basin details are needed. Contour labels, berm detail, emergency outlet and associated details.
- 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.
- 10. A reclamation bond will need to be established for the project prior to work commencing.
- 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.



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



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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.



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

Sincerely,

FIELDSTONE LAND CONSULTANTS, PLLC

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



May 9, 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, dated February 14, 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 waiver requests for Article 25.3.3 and Article 25.3.6
- Three (3) copies of the Surface Water Resources Setback Plan (22" x 34")
- Three (3) Copies of the Stormwater Management Report
- Three (3) Copies of the Acid Mine Draiange Detection Initial Response Action Plan
- Three (3) Copies of the Stormwater Pollution Prevention Plan (SWPPP) for the current pit operations
- Three (3) Copies of the revised plans (22" x 34")
- One (1) check in the amount of \$150.64
- 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:

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.

#### No response required.

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 outlined in the Acid Mine Drainage Potential Report and we believe the stormwater management report does not currently adequately address the surface water conditions.

Although the site's bedrock <u>may</u> exhibit <u>potential</u> 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.

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

No response required.

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.

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.

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 since the current design does not appear to have adequate separation to water. Additional investigation may also be required depending on the consultant's responses surrounding concerns for potential impacts.

#### See response to #4.

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 locations. For example, SLR-12 appears to be missing and the excavation at this location is approximately 855+/- based on what we understand to be its location. This appears to be 30+ feet below the observed seasonal water table.

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.

7. Section 25.3.4.B.2: 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 Hydrogeologic Investigation provide the well data (depth of water and baseline testing of these wells since they are located on the site. The monitoring plan may want to include one or more of these wells too.

A revised monitoring plan has been developed and includes monitoring SLR 10, 11, and 12 that were previously installed.

8. Section 25.3.4.B.3A: The soil logs and borings in Period 8 do not seem to meet the requirements outlined in this section.

The section requires that wells be dug 50' below the proposed pit – if excavation is within the water table. SLR 10 and SLR 11 were both dug below the proposed pit bottom, and did not encounter the water table within our excavation limits. The proposed design does not propose excavating below the water table. SLR-12 is shown on sheets 11 and 16. It is currently located in the area between period 1 and period 8 in an area where grading is not anticipated. SRL-12 does show a water level greater than the adjacent proposed pit floor depth. All bedrock groundwater flow at the site is controlled by fracture flow and we have no evidence suggesting that the fracture in which SRL-12 is located extends into the excavation area. SLR-12 showed groundwater to be within 18" of the surface, however, both SLR-4 and test pit 6, both of which are within very close proximity to SLR-12, did not find groundwater. Overburden wells MW-1 through MW-8 did not encounter groundwater. Bedrock wells BRW-1 through BRW-6 did not encounter groundwater. Furthermore, due to the blasting means and methods, the excavation is limited to "dry-hole" areas only.

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.

A revised monitoring plan has been provided that includes monitoring tables of both AMD and water level monitoring. It also includes both on-site and off-site water quality monitoring notes. See sheet 17.

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.

#### See Response to #2

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.

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 prevs. post volumes for channel protection have also been met.

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

#### See response above.

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.

Two pre vs post drainage models have been analyzed, which include an interim phase showing the project meets pre vs post flows during the phasing periods. During this interim phase, the temporary sedimentation pond SF1 is to be expanded. This pond will detain and infiltrate all the stormwater associated with the subsequent phases of work. Upon completion of period 7, and during period 8, as the pit floor in period 8 is lowered, proposed infiltration pond SF8 will be constructed. This will capture and infiltrate all of the stormwater associated with the project.

- 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.

Ledge and associated impervious conditions, including gravel haul roads, have been reflected in the updated drainage analysis.

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.

Outlet structures for the use of emergency overflow devices have been added to SF5, SF6, and SF7. Hydrocad has been updated with these structures as well as the details (pond detail updated, OCS structure details have been provided.

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

#### See response to 11a.

iv. Confirm adequate depths to ESHWT are being provided.

Both the temporary sediment basin SF7 and the final proposed infiltration basin SF8 have the required separation to ESHWT. See response to 4.

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

Inlet conditions have been verified, and minimum cover has been provided for all culverts.

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

Temporary stone check dams have been removed as ditches are proposed to be stone armored.

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

An Operation and Maintenance Manual has been included in the stormwater report.

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

#### See response to 11c.

- 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.
  - Plans have been revised to show improvements at the entrance. This work will include widening the paved apron, stone outlet protection, and grading a depression at the existing driveway culvert. Phasing notes have been added to sheets 5 and 10 to specify what items need to be completed associated with the access road and during which period. Additional notation has been included on sheets 5 and 10 that specify what items are to be constructed and when, based on the previously approved project.
- 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.

Per a review by the NH Division of Historical Resources, there are no known resources to be impacted. This note has been eliminated,

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.

Operation notes have been revised to include the following:

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 RightsOf-Ways. These Shall Be Erected At The Start Of Each Permit Period, And Shall
Remain Until Pit Excavation Area Has Been Reclaimed.

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.

#### No response required.

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 will be brought into compliance with the approved plans.

See response to 12.

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

General note 27 on sheet 1 now reads: 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.

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.

#### No response required.

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.

The stormwater management report has appropriately modeled pre vs post conditions. The reclamation notes have been revised to include the pertinent notes from this section.

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

The reclamation notes have been revised to include the following: Excavation operations that cause adverse impacts shall abate and/or remediate those impacts, restoring all affected areas to pre-impact conditions. Reclamation shall not be said to be complete until all adversely impacted areas have been successfully remediated.

#### 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.

#### General note #21 has included this information.

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.

#### Operations Note 10 has been revised.

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.

Note 17 has been removed. Refer to fueling notes on sheets 5 and 10. Fueling operations are proposed to be in compliance with Env-WQ 1510.08. Spill prevention measures currently on-site are located in the job trailer and consists of 55 gallon drum MS spill prevention barrels.

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.

The excavation, drainage, and erosion control plan show both the current limits and proposed limits of disturbance, as well as all surface water / wetland setbacks. The area in which the existing conditions plan shows disturbance within a wetland is an existing disturbed area that has been restored and confirmed by Ecosystems Land Planning and by the City of Keene. See response to item #13.

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?

The grading plans and details have been revised to include more information for the ponds.

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.

The culvert has one outlet HW#10B labeled. The culvert as proposed has been checked and meets or exceeds manufactures minimum requirements of 12" of cover.

7. Sheet 10 of 22 – What is the plan for transitioning from 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.

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.

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

The plans and details sheets have been revised to include additional information for the ponds.

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.

An NOI for the 2022 NPDES Construction General Permit was filed and has been included.

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

#### No response required.

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.

Plans have been revised to show culvert and stone ditching to be added at the entrance. Phasing notes have been added to sheet 5 and sheet 10 to specify what items need to be completed associated with the access road and during which period. Additional notation has been included on sheets 5 and 10 that specify what items are to be constructed and when based on the previous approved project.

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

An updated Surface Water Resources Setback Plan has been included and addresses this comment and that shows the following:

- Limits of disturbance
- Previously approved encroachments on surface water setbacks
- Proposed encroachments on surface water setbacks
- Previously restored areas of impacts on surface water setbacks
- 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.

The area circled to the west, located adjacent to the existing pit, was an area of restoration associated with the previously permitted gravel pit. Per A joint inspection conducted on September 28, 2023 between the applicant, City Staff, and certified wetland scientist, it was determined that area had been successfully replanted. The second area circled is an existing cleared area that is evident on google imagery as far back as 2008, most likely a logging lay down area. The erosion along the perennial stream as noted on lot 8, the old Seafield Pines Facility, has been a known issue prior to the applicant owning the property.

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.

Phasing notes have been revised, as well as call out notes on the plans to address construction sequencing.

In response to Bryan Ruoff's (City Engineer) comment "The existing paved access road radii need to be increased in order to support the traffic loading and associated turning

movements into and out of the site. The existing turning movements extend outside of the pavement and will exacerbate the deterioration of the road", we offer the following:

We understand this is an area of concern, as the applicant has placed crushed stone in these areas to accommodate truck movements. The pavement radii at the entrance has been revised for a permanent solution. Our phasing notes indicate this work to be done at the start of this project.

During the March 24<sup>th</sup> Planning Board meeting, a suggestion was raised by the Mayor for increased awareness of the construction vehicles entering NH Route 9 at the existing site entrance. Our plans have been revised to address this concern, by adding signage indicating vehicles will be entering and exiting in this location.

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



#### **Waivers**

The applicant requests the following waivers in accordance with Article 26.19.13:

#### 1. Which Requirement:

Article 25.3.6 – Toxic or Acid Forming Materials – 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.

#### Why the waiver is needed:

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 were submitted in conjunction with the subject excavation permit. 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.

Our initial site testing, involving eight overburden wells, revealed bedrock at depths ranging from less than 5 feet to 14 feet. Subsequent testing of the bedrock, combined with an acid-producing potential analysis, helped us evaluate the risk of Acid Mine Drainage (AMD). AMD can occur when low pH waters at an excavation site contain elevated levels of certain minerals.

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 adequately excavate the material on-site. 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 waiver request for your review.

#### **Alternative Standard:**

The alternative to the proposed would result in no bedrock excavation activities onsite. Due to the shallow depth of bedrock found throughout the property, excavation with avoiding bedrock is not a practical option. Bedrock, or granite, is common in New Hampshire and is regularly excavated for various purposes. While AMD testing isn't typical in New England, it's a potential factor in many quarrying operations. Considering the makeup of the granite bedrock in Keene and the areas where bedrock excavation is permitted, there's a possibility that any bedrock extraction in Keene might lead to the same waiver requirement.

#### Not in Violation:

Granting this waiver would not violate NH RSA 155:E, as the State of New Hampshire does not have specific regulations for AMD. Because AMD is uncommon in the state, testing and mitigation for it are not typically required. However, note that the applicant will monitor groundwater and surface water compounds, which will be compared to the relevant NHDES regulatory standards.

#### **Adverse Impacts:**

A proactive approach to AMD will allow the excavation of the bedrock and prevent any adverse impact on surface and groundwater:

#### Sampling

Initial testing and analysis have indicated that AMD <u>may</u> potentially occur on Site. Due to this potential, it is proposed that strategically placed wells will be monitored on a bi-annual basis in the months of April and October. Additionally, samples will be collected from surface water basins constructed throughout the project. The basins collect all surface water conveyed from the proposed excavation and discharge to one common infiltration pond. Baseline, pre-excavation monitoring will consist of the collection of two (2) rounds of samples collected a minimum of 14 calendar days apart. Results will be reviewed in comparison to the New Hampshire Department of Environmental Services (NHDES) Ambient Groundwater Quality Standards (AGQS). All results will be forwarded to the City of Keene Community Development Department within 45 days of sample collection.

#### Prevention

AMD occurs when surface water interacts with heavy metals, resulting in a low pH level. Our strategy focuses on minimizing the contact between surface water and bedrock.

The bedrock at our site has limited exposure to groundwater. To assess groundwater potential, we installed eight bedrock wells. Only two of these encountered groundwater, and both were located outside the planned excavation area. While one existing well found groundwater close to the surface, another nearby well and test pit did not, indicating a general lack of groundwater within the bedrock intended for mining. This limited groundwater significantly reduces the potential for water to interact with the bedrock.

Furthermore, all stormwater from excavation activities will be collected, contained, and infiltrated back into the ground. We anticipate zero runoff leaving the site, effectively protecting surface waters from potential AMD.

Research indicates a link between abandoned quarries and AMD due to prolonged water contact with minerals. To avoid this, any stockpiled material will be moved off-site promptly. We also plan to refrain from blasting and processing bedrock unless there is a clear economic demand.

Finally, all exposed bedrock, with the exception of the vertical ledge face, will be reclaimed with suitable loam and seed. This will prevent long-term contact between surface water and the minerals.

#### Pre-mitigation

All stormwater associated with the excavation activities is collected, detained, and infiltrated back into the ground via infiltration ponds. Zero runoff is expected to leave the site. In addition of reintroducing surface water to the ground, the proposed lining the two infiltration ponds with 12 inches of crushed limestone gravel as a precautionary measure will help neutralize any potential for acid mine drainage.

#### Mitigation

Although unlikely, 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:

- 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. 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 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 adjected 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. If results indicate acid mine drainage may have traveled further downgradient additional monitoring wells may be required.

#### **Purpose and Intent:**

The purpose of this regulation is to protect surface waters AMD. AMD occurs when water reacts with sulfur bearing minerals creating sulfuric acid. The overall result of AMD is lower levels of pH of the surface water, and the potential for high levels of toxic materials. The regulation requires the applicant to prove that the proposed bedrock extraction will not negatively impact surface waters and wetlands. While the purpose of the regulation is clear, the submitted material and detection plans, thoroughly address the lack of impact this project will have on the surrounding environment.

#### **Not Unduly Injurious:**

Granting this waiver is not expected to negatively affect public or environmental welfare. Our project incorporates a proactive AMD detection plan, overseen by our professional geologist and detailed previously, which will ensure no adverse environmental or public impact.

We will conduct preemptive monitoring to gather the necessary data for early risk detection. Furthermore, our design and operational practices are specifically chosen to prevent long-term exposure of bedrock and surface water. We will also implement pre-mitigation steps to encourage a balanced pH level in the surface water. In the event that risk is detected, a comprehensive mitigation plan is in place to allow for a swift and coordinated response from both the applicant and the City to prevent any potential impact.

#### **Unique Site Characteristics:**

While we do not believe the site possesses a particularly unique character, the City's requirement for Acid Mine Drainage (AMD) testing is. The state does not mandate this testing, and to our knowledge, no other municipality in New Hampshire requires it.

Although the site's bedrock <u>may</u> exhibit <u>potential</u> acid-generating properties, this characteristic alone does not inherently make it unique. If AMD testing was standard practice across all rock excavation sites in New England, we would have a clearer understanding of how prevalent these properties actually are.

#### 2. Which Requirement:

Article 25.3.3 – Excavation below the water table – Excavation shall not be permitted lower than 6-ft above the seasonal high-water table, as indicated by borings or test pits, without the issuance of an exception. An exception to this standard shall be granted if the applicant demonstrates that such excavation will not adversely affect water quality or quantity, provided, however, that written notice of such exception shall be recorded in the County Registry of Deeds as part of the decision, and 1-copy filed with the NH Department of Environmental Services.

#### Why the waiver is needed:

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.

#### **Alternative Standard:**

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.

#### Not in Violation:

We do not anticipate encountering groundwater during the proposed excavation activities. The site is underlain by crystalline bedrock, which is non-porous and transmits groundwater primarily through fractures. Our investigation of bedrock wells within the excavation area did not reveal any groundwater-bearing zones or fractures. It's important to note that the only well where groundwater was observed (SLR-12) is situated outside the proposed excavation footprint.

Furthermore, nearby wells SLR-4 and test pit 6, both located in close proximity to SLR-12, did not show any signs of groundwater. Our extensive investigation also included overburden wells MW-1 through MW-8 and bedrock wells BRW-1 through BRW-6, none of which encountered groundwater.

As a precautionary measure, all blast hole drilling will be meticulously logged to identify any potential fractures or groundwater-bearing zones. Blasting operations will not proceed in any areas where such zones are identified.

Finally, it's critical to understand that if groundwater is encountered in the vicinity, all blasting activities will immediately cease. This is in strict adherence to MSHA's protective protocols, which explicitly prohibit blasting within groundwater.

#### **Adverse Impacts:**

Excavation will not adversely affect water quality or quantity. It is not anticipated that any work within the groundwater will be conducted therefore there will be no effect on groundwater quantity or quality. Based on our initial assessment, we do not anticipate any adverse effects on water quality or quantity. Our initial site testing, which included eight overburden wells, indicated bedrock at depths between less than 5 feet and 14 feet. Further testing confirmed that the groundwater level is below our planned excavation depths. In the event that groundwater is unexpectedly encountered near the well with a higher level (which we believe is an isolated case), construction in that specific area will cease.

To further safeguard water resources, we will conduct on-site testing of surface water quality before it infiltrates the ground. We are proposing a bi-annual monitoring program involving strategically positioned wells, with sampling occurring in April and October. Additionally, we will collect samples from surface water basins designed to capture all surface water runoff from the excavation area. These basins will discharge into a central infiltration pond for surface water treatment.

Prior to commencing excavation, we will establish a baseline water quality profile by collecting two rounds of samples, separated by a minimum of 14 calendar days. The results will be compared against the New Hampshire Department of Environmental Services (NHDES) Ambient Groundwater Quality Standards (AGQS). All monitoring

data will be submitted to the City of Keene Community Development Department within 45 days of each sample collection.

#### **Purpose and Intent:**

This regulation aims to preserve both water quality and quantity. Water quantity will be maintained by capturing all runoff on-site for infiltration. The water quality monitoring program will include testing drinking water supplies and comparing results to NHDES Ambient Groundwater Quality Standards (AGQS).

#### **Not Unduly Injurious:**

Granting this waiver will not be unduly injurious to public or environmental welfare. A robust monitoring program has been established, including the monitoring of bedrock wells, six surface water locations, and all drinking water wells within a half-mile radius of the site. Practices and measures are put in place to help safeguard the environment including a surface water treatment system, groundwater excavation prevention measures, AMD action plans, and MSHA oversight. MSHA's regulations regarding explosives and blasting are focused on ensuring the safety of miners and the mine environment during blasting operations. The emphasis on safe practices and the use of permissible materials and equipment helps to minimize potential risks that could lead to groundwater contamination.

#### Unique Site Characteristics:

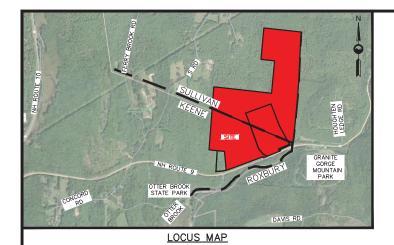
A groundwater monitoring well (SLR-12), installed by SLR International Corporation, observed a groundwater fracture within 18 inches of the existing ground surface. We intend to avoid excavation in this immediate area. We believe the high groundwater encountered in this well is an isolated occurrence. Our findings during drilling suggest that surface water was present nearby and may have flowed into the well, potentially influencing the results. It's important to note that a nearby well and test pit, situated close to SLR-12, did not encounter any groundwater. Additionally, all other overburden and bedrock wells within the planned excavation footprint have also remained dry. This suggests that the condition at SLR-12 is a unique characteristic of that specific location and not representative of the broader area.

To ensure the protection of this localized area, we will refrain from excavating directly at the SLR-12 location, though work will continue in the adjacent areas. Should the findings from this well indicate a broader groundwater impact beyond this localized point source, we will immediately halt excavation and blasting activities to prevent any potential disruption to groundwater resources.

Sincerely,

Justin Daigneault

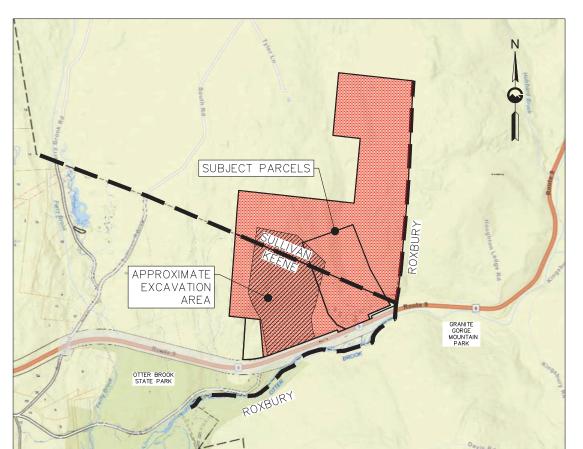
Project Manager



# 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













#### 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

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

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LOCATION PLAN SCALE: 1"=1,000'





		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
		60 -4 460	
		63 of 160	

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603.518.8030

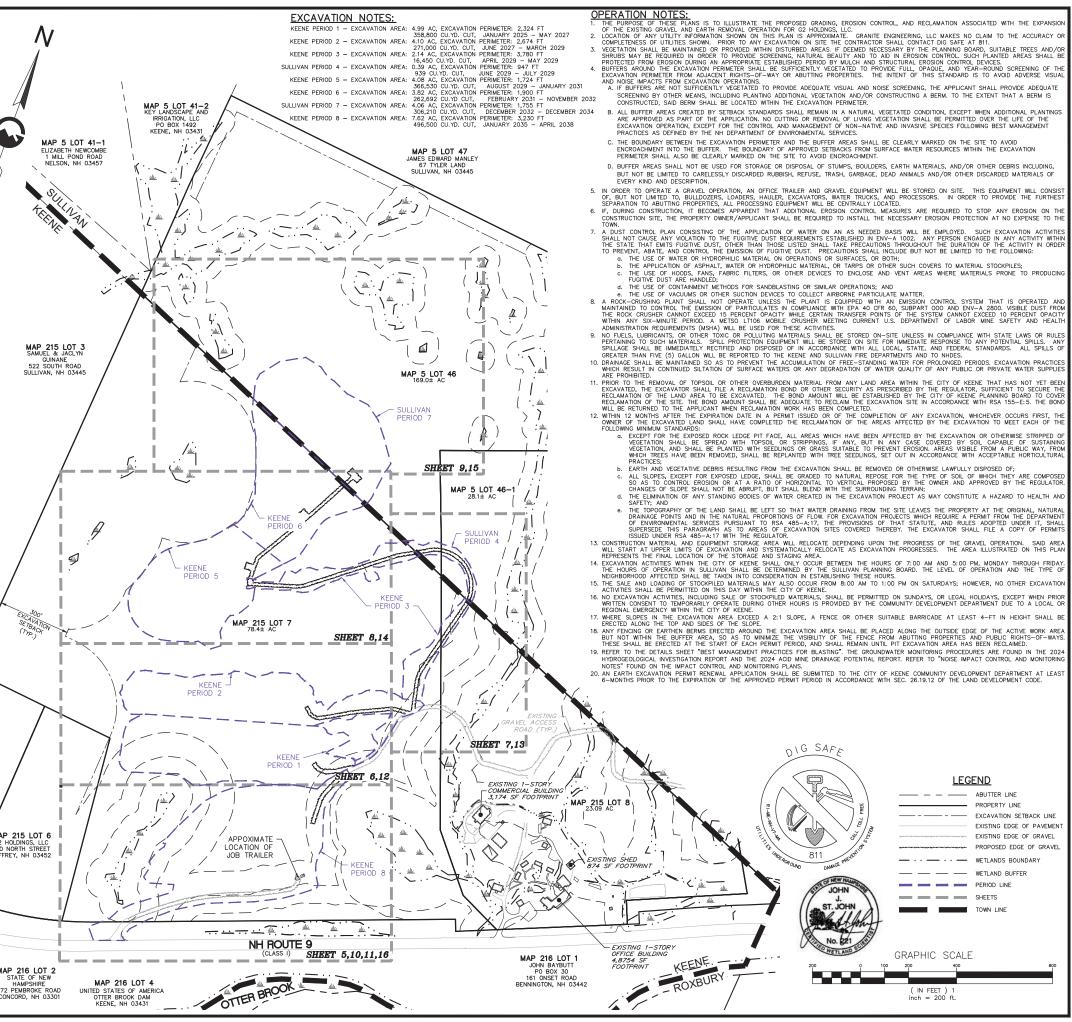
KEENE TAX MAP 215 LOTS 7 & 8

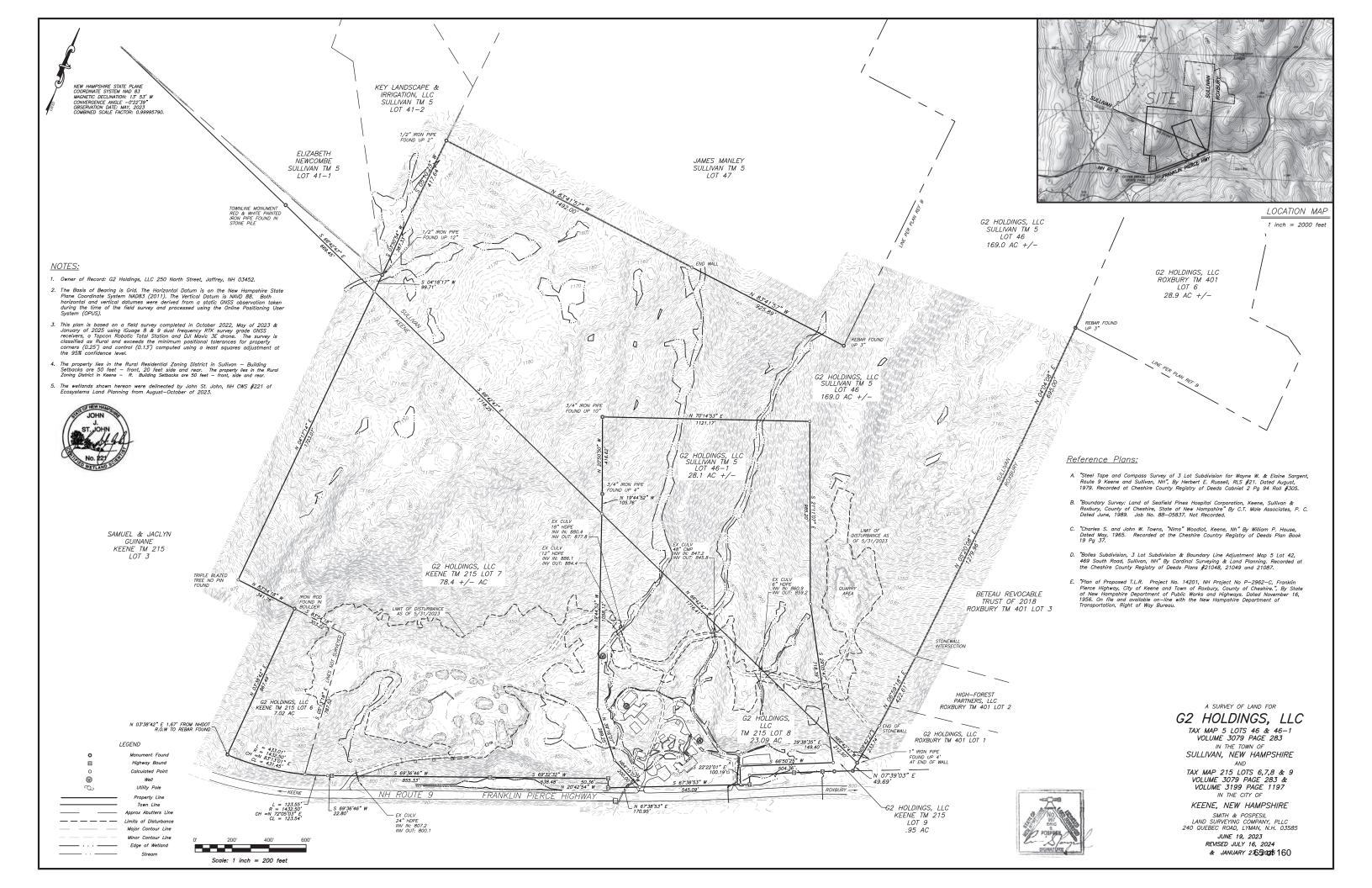
SULLIVAN TAX MAP 5 LOTS 46 & 46-1 57 ROUTE 9 KEENE & SULLIVAN, NEW HAMPSHIR CHESHIRE COUNTY

**GORDON SERVICES** KEENE

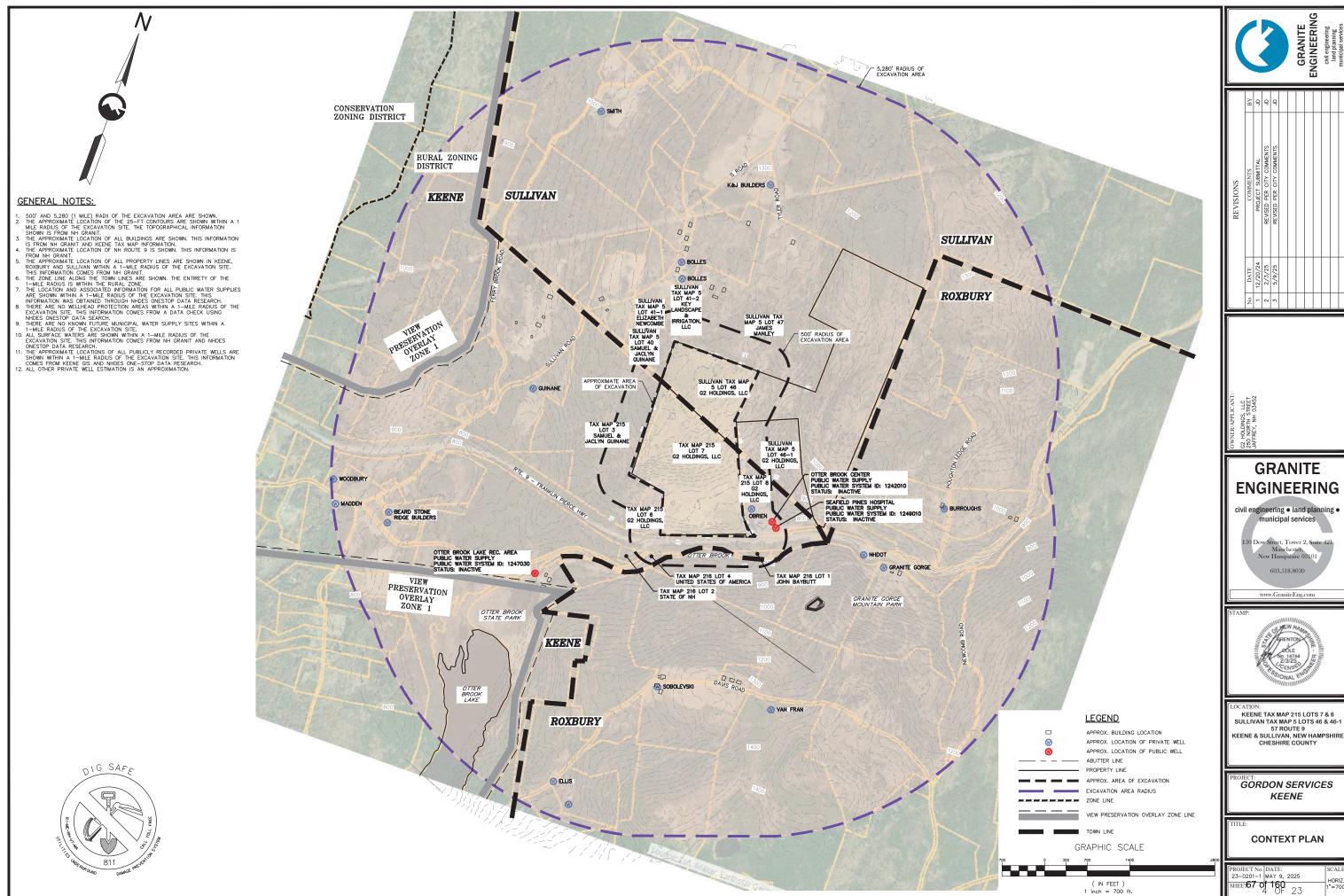
**OVERVIEW PLAN** 

23-0201-1 MAY 9, 2025 HEE1**64 of 160** 

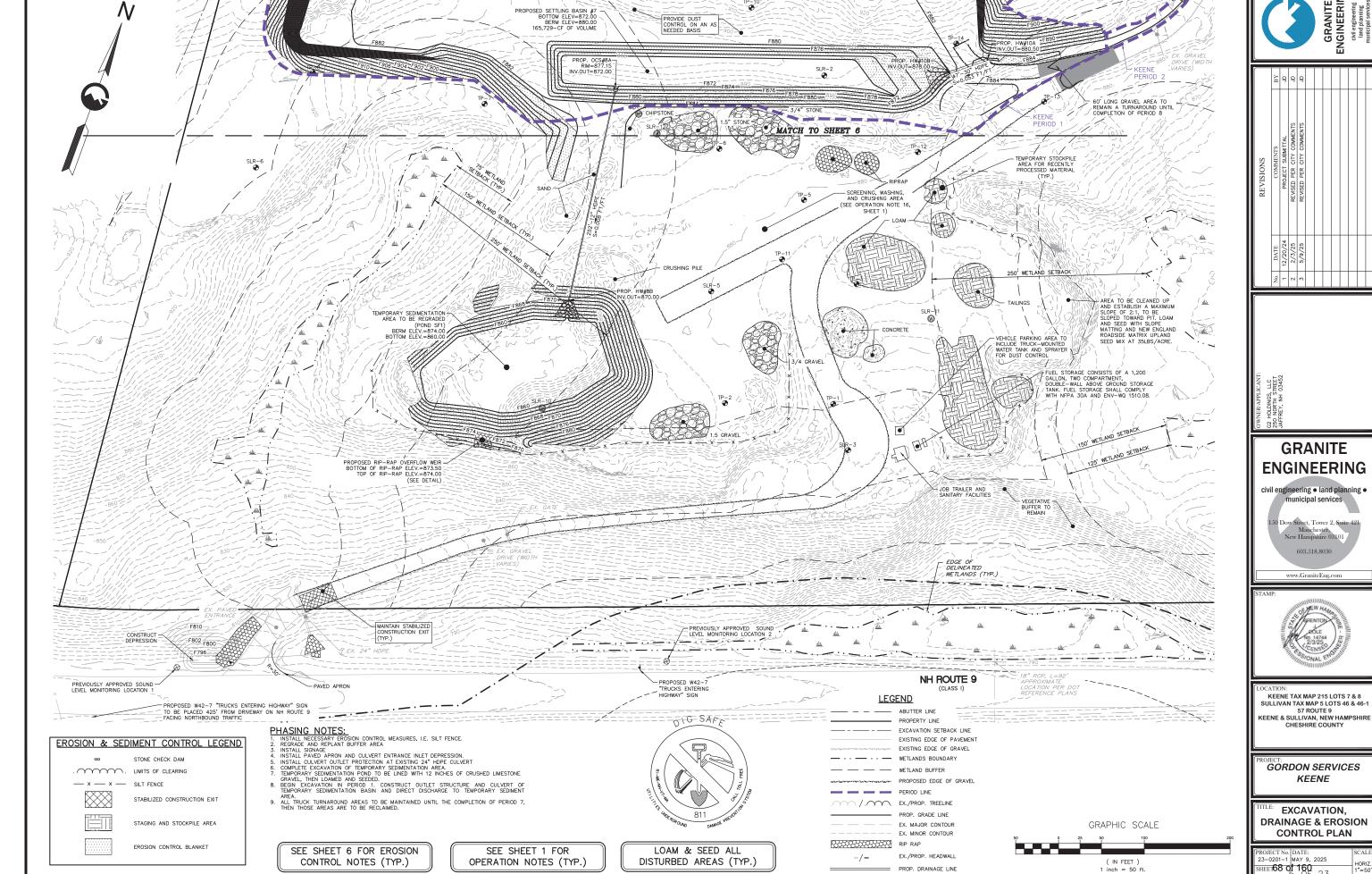








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sнеет <b>67 of 16</b>	0 ~ 7	HORIZ. 1"=700"
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нее 1**68 of 160** 5 OF 23

NORTH. 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.)

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 STORMWARER MANUAL "REGISION 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.

4. APPROPRIATE EROSION AND SEDMENT OF VINCU MEASURES SHALL BE INSTALLED AREAS REMAINING IDLE FOR MORE THAN 30 DAYS SHALL BE TARRED OF DISTURBANCE SHALL BE KEPT TO A MINIMUM. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 30 DAYS SHALL BE 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.

7. THE CITY OF KEENE SHALL RESERVE THE RIGHT TO REQUIRE FURTHER EROSION CONTROL PRACTICES DURING CONSTRUCTION SHOULD THEY FIND IT NECESSARY.

8. THE CITY OF KEENE SHALL RESERVE THE RIGHT TO REQUIRE FURTHER EROSION CONTROL PRACTICES DURING CONSTRUCTION SHOULD THEY FIND IT NECESSARY.

8. THE CITY OF KEENE 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 TURFE. SHALL BE RECEIVE A MINIMUM APPLICATION OF THE INDIVIDUAL SITE CONTRACTOR, MAY WARRANT.

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 ENVY ALD THOSE TRADES TO THE OWNER OF THE OWNER OWNER OWNER OF THE OWNER O

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

CONTRACTOR SHALL USE DUBLEMENT IN INSTALLING SOFTEMENTARY ENGINEERS SHALL BE CONSTRUCTION METHODOLOGIS MAY WARRANT.

16. GRADED AREAS SHALL BE VEGETATED TO INSURE EROSION CONTROL BY SEEDING, MULCHING, AND FERTILIZING. DISTURBED AREAS SHALL BE PLANTIED WITH SUTTABLE PLANT MATERIALS.

17. GRADING SHALL NOT EXCELD A RATIO OF 3 HORIZONTAL TO I VERTICAL WITHOUT SPECIAL EROSION CONTROL MEASURES. NETTING OR SIMILAR MATERIAL SHALL BE FROVIDED ON SLOPES WITH A RATIO GREATER THAN 3:1 WHILE GROUND COVER IS BEING ESTABLISHED.

#### **EROSION & SEDIMENT** CONTROL LEGEND

LIMITS OF CLEARING



STABILIZED CONSTRUCTION EXIT STAGING AND STOCKPILE AREA

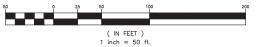
EROSION CONTROL BLANKET

#### EXISTING EDGE OF PAVEMENT EXISTING EDGE OF GRAVEL - · · - · · - WETLANDS BOUNDARY PROPOSED EDGE OF GRAVEL PERIOD LINE PROP. GRADE LINE EX. MAJOR CONTOUR EX. MINOR CONTOUR RIP RAP EX./PROP. HEADWALL

PROPERTY LINE - - FXCAVATION SETRACK LINE

PROP. DRAINAGE LINE

GRAPHIC SCALE





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KEENE TAX MAP 215 LOTS 7 & 8

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

GORDON SERVICES KEENE

**EXCAVATION DRAINAGE & EROSION CONTROL PLAN** 

23-0201-1 MAY 9, 2025 HEE1**69 of 160** 6 OF 23

EXCAVATION NOTES:

KEENE PERIOD 3 - EXCAVATION AREA: 2.14 AC, EXCAVATION PERIMETER: 3,780 FT
16,450 CU.YD. CUT, APRIL 2029 - MAY 2029

SULLIVAN PERIOD 4 - EXCAVATION AREA: 0.39 AC, EXCAVATION PERIMETER: 947 FT
939 CU.YD. CUT, JUINE 2029 - JUILY 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.



#### **LEGEND**

	ABUTTER LINE
	PROPERTY LINE
	EXCAVATION SETBACK LINE
	EXISTING EDGE OF PAVEMENT
221129124-241111111111111111111111111111	EXISTING EDGE OF GRAVEL
$-\cdots-\cdots-$	WETLANDS BOUNDARY
	WETLAND BUFFER
1274.794.444.444.444.444.424.794.44	PROPOSED EDGE OF GRAVEL
	PERIOD LINE
, ~ / . ~ .	EX./PROP. TREELINE
	PROP. GRADE LINE
	EX. MAJOR CONTOUR
	EX. MINOR CONTOUR
	RIP RAP
-/ <b>-</b>	EX./PROP. HEADWALL
	PROP DRAINAGE LINE

#### EROSION & SEDIMENT CONTROL LEGEND

EX. DRAINAGE LINE

. . LIMITS OF CLEARING

STABILIZED CONSTRUCTION EXIT

STAGING AND STOCKPILE AREA EROSION CONTROL BLANKET



GRAPHIC SCALE ( IN FEET ) 1 inch = 50 ft



	REVISIONS	
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3/25	REVISED PER CITY COMMENTS	ar
9/25	REVISED PER CITY COMMENTS	ar

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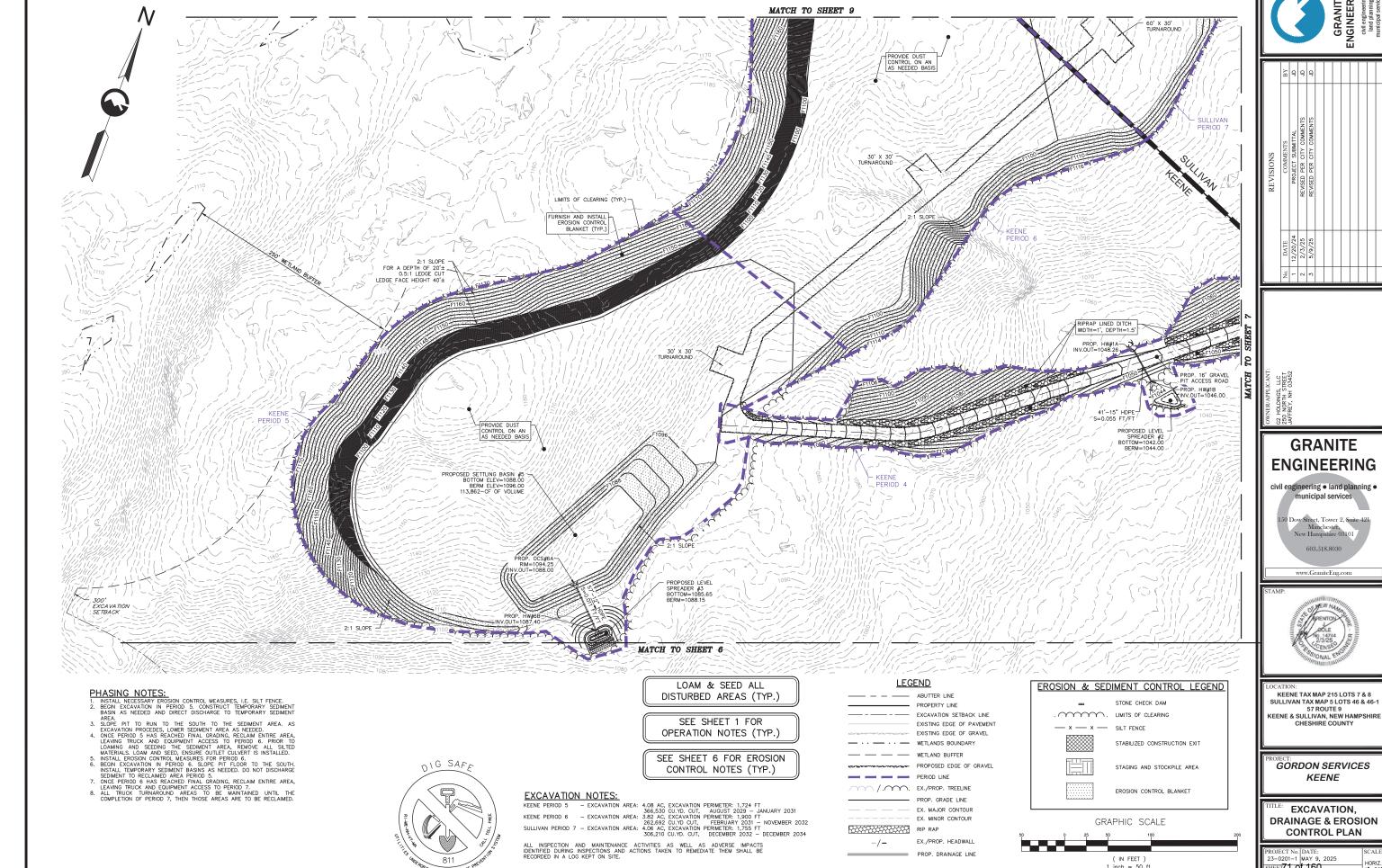


KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

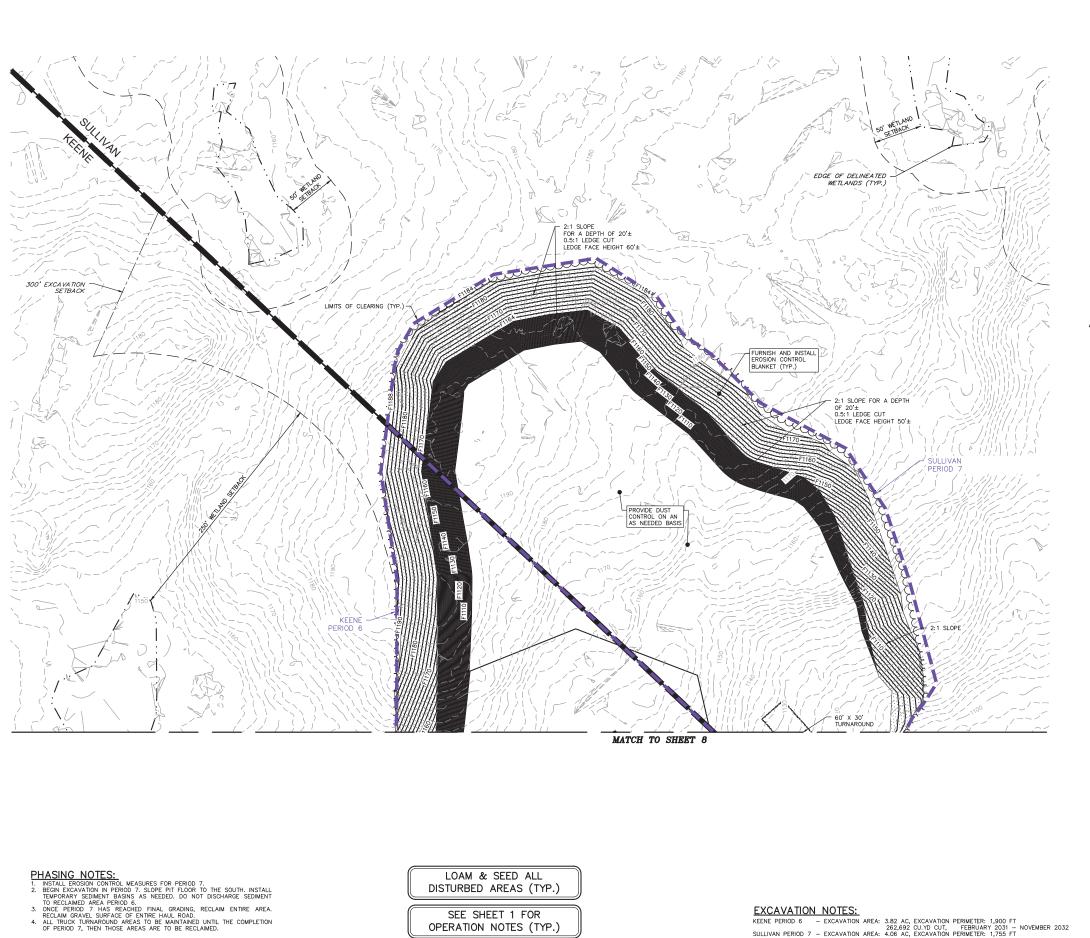
GORDON SERVICES KEENE

EXCAVATION, **DRAINAGE & EROSION** CONTROL PLAN

PROJECT No. DATE: 23-0201-1 MAY 9, 2025 SHEET**70 of 160** 



SHEET**71 of 160** 





#### **LEGEND**

\_\_\_\_ \_ \_ \_ ABUTTER LINE - PROPERTY LINE ------ EXCAVATION SETBACK LINE EXISTING EDGE OF PAVEMENT EXISTING EDGE OF GRAVEL · · · — · · — WETLANDS BOUNDARY PROPOSED EDGE OF GRAVEL

. / , COO, EX./PROP. TREELINE

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



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, FEBRUARY 2031 — NOVEMBER 2032

SULLIVAN PERIOD 7 — EXCAVATION AREA: 4.06 AC, EXCAVATION PERIMETER: 1,755 FT
306,210 CU.YD. CUT, DECEMBER 2032 — DECEMBER 2034

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.



### **ENGINEERING**

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

KEENE EXCAVATION,

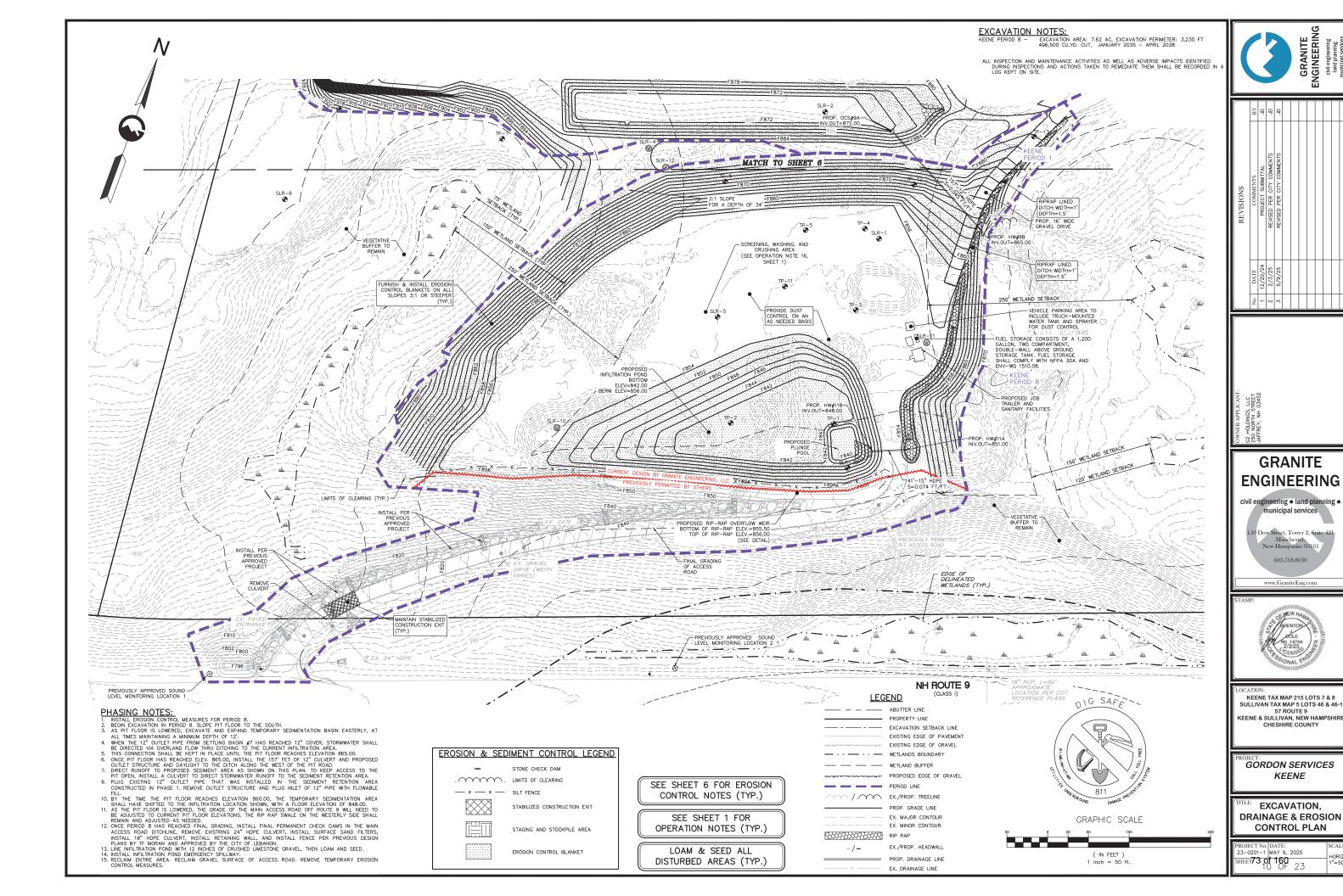
**DRAINAGE & EROSION** 

GORDON SERVICES

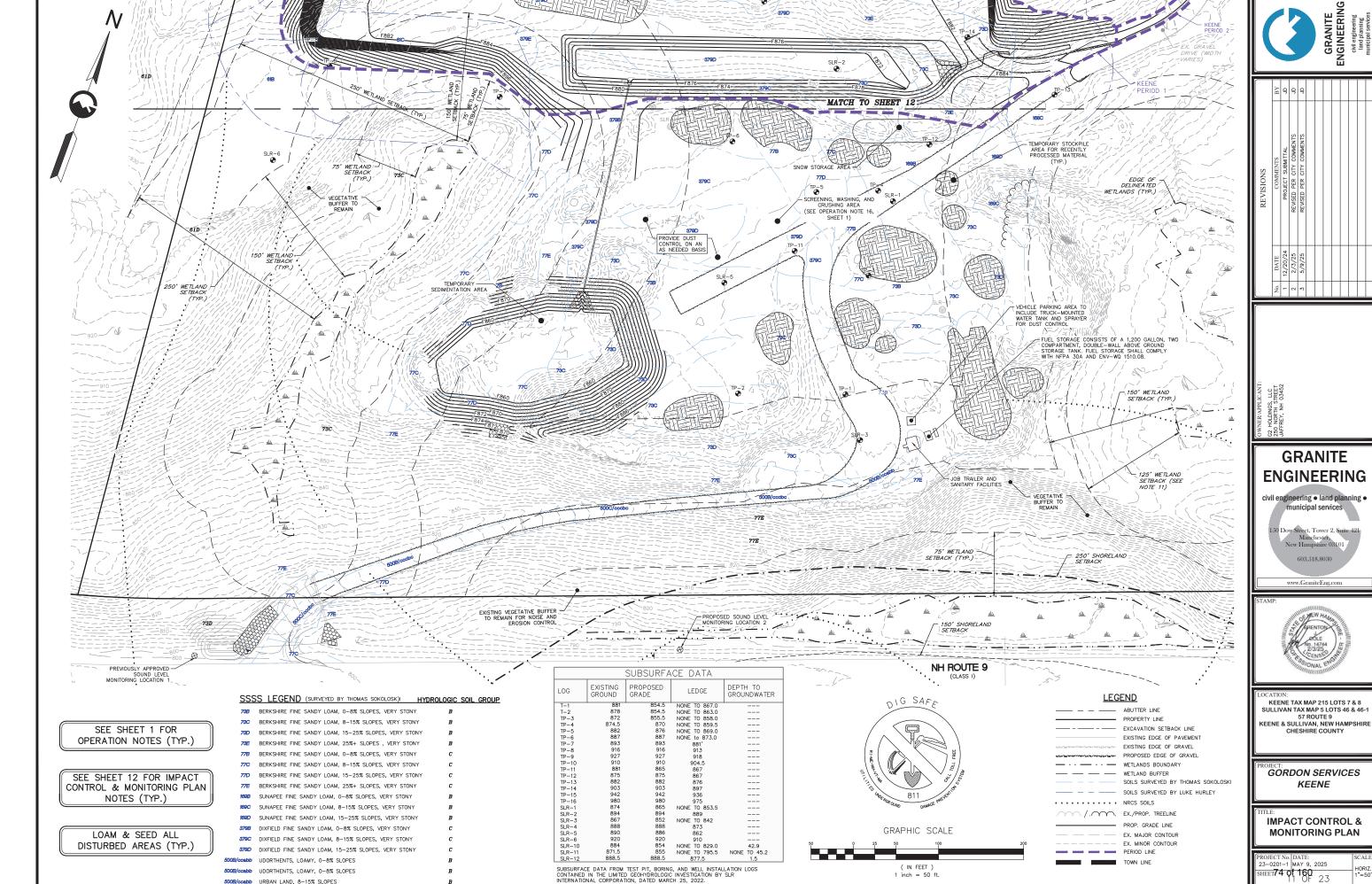
CONTROL PLAN PROJECT No. DATE: 23-0201-1 MAY 9, 2025 sнеет**72 of 160** 9 OF 23

**GRANITE** 

civil engineering ● land planning ● municipal services



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	DATE	12/20/24	2/3/25	5/9/25				
	No.	-	2	3				

внеет**74 of 160** 

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) SCLA BOT THE DB(A) SCLA BOT THE DB(A) LOLD BY MONITORING SHALL BE WARD USING THE LIMAX) SOUND LEVEL THROUGHOUT EACH DAY SHALL BE CALCULATED AND ENTERED INTO A NOISE MONITORING LOG MAINTAINED BY THE APPLICANT.

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 FOLLOWING THE INITIAL 20-DAY MONITORING PERIOD, OR WHEN NOISE GENERATING FOLLOWING THE INITIAL 20-DAY MONITORING PERIOD, OR OWNER HAS BEEN AS A BOUNT OFFICE OF THE PROPERTY O

CLICK STATE

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 COUPMENT ON THE SITE, BY ADDING NOISE ATTENNATING 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.

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.

AND CONSULTANT HIRED BY THE PLANNING BOARD AT THE APPLICANT'S EXPENSE.

1. SPILL CONTROL PRACTICES ARE OUTLINED IN THE STORMWATER POLLUTION PREVE 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.

B. THE APPLICANT/OPERATOR MAY REQUEST THAT THE BACKGROUND SOUND LEVEL B. FE-MEASUREMENT SHALL BE DONE AT A TIME SELECTED BY THE COMMUNITY DEVELOPMENT DIRECTOR IN CONSULTANT HIERD BY THE PLANNING BOARD TO PERFORM THE MEASUREMENT AT THE APPLICANT AND A CONSULTANT HIERD BY THE PLANNING BOARD TO PERFORM THE MEASUREMENT AT THE APPLICANT'S EXPENSE. ONGOING MONITORING: THE APPLICANT SHALL MONITOR AT THE SELECTED MONITORING LOCATIONS THE SOUND LEVELS GENERATED BY THE OPERATION, AS FOLLOWS. A. O. A. NA ANAULL BASIS, AT A TIME SELECTED BY THE COMMUNITY DEVELOPMENT DIRECTOR, 3.

SPILL CONTROL PRACTICES ARE OUTLINED IN THE STORMWATER POLLUTION PREVENTION PREVENTION PREVENTION PREVENTION PREVENTION PREVENTION PROMISES BY STANDARD PROCESS, PRIMARILY CONSISTING OF PETROLEUM-BASED OILS, LUBRICANTS, AND GASQLINE-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, STRICT PRECAUTIONS MUST BE TAKEN DURING ON-SITE FUELING OPERATIONS TO PREVENT SPILLS AND OVERFILLING.

SEE SHEET 1 FOR

SEE SHEET 4 FOR FROSION

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 CONTROL PRACTICES ARE OUTLINED IN THE STORMWATER POLLUTION PREVENTION

DUST CONTROL MACTICES ARE OFFICIALLY IN THE COMPONENT IN THE EXCAVATION OPERATION, ON THE SITE 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 ONCOING BASIS.

GRAVEL DRIVE

A VISUAL MUNITORING OF AIRBORNE DOST STALL BE DURE OF AN AN ONWIND SASIS.

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.

INSPECTION OF ACCESS DRIVEWAY STABILIZED CONSTRUCTION ENTRANCES AND OTHER EROSION CONTROL MEASURES, DESIGNED TO ELIMINATE THE DEPOSIT OF DUST OR MUDD 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

E. THE APPLICANT SHALL MAINTAIN A LOG DOCUMENTING DUST CONTROL ACTIVITIES, INSPECTION AND MANTENANCE 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.

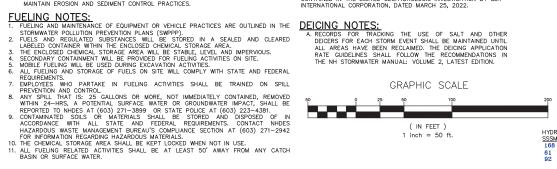
MATCH TO SHEET 14 2:1 SLOPE FOR A DEPTH OF 10'± LEDGE FACE HEIGHT 70'±

0.5:1 LEDGE CUT LEDGE FACE HEIGHT 65'±

0

MATCH TO SHEET 11, 16

SUBSURFACE DATA FYISTING PROPOSED DEPTH TO LEDGE GROUND GROUNDWATER NONE TO 867. NONE TO 867.0 NONE TO 863.0 NONE TO 858.0 NONE TO 859.5 NONE TO 869.0 NONE to 873.0 855.5 874.5 NONE TO 853.5 NONE TO 842 873 862 NONE TO 829.0 NONE TO 45.2





## **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 SOKOLOSK SOILS SURVEYED BY LUKE HURLEY · · · · · · · · · · · NRCS SOILS . EX./PROP. TREELINE PROP. GRADE LINE

FX. MAJOR CONTOUR EX. MINOR CONTOUR TOWN LINE



60

73

77

161

169

## NRCS SOILS LEGEND

COLTON GRAVELLY SANDY LOAM, RATED A TUNBRIDGE-BERKSHIRE COMPLEX, RATED C TUNBRIDGE-LYMAN-ROCK OUTCROP COMPLEX, RATED C BERKSHIRE FINE SANDY LOAM, RATED B MARLOW FINE SANDY LOAM, VERY STONY, RATED C LYMAN-TUNBRIDGE-ROCK OUTCROP COMPLEX, RATED D SUNAPEE FINE SANDY LOAM, RATED C



## SITE SPECIFIC SOIL SURVEY NOTES:

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFLIRATION REQUIREMENTS OF TERRAIN SUREAU, IT WAS SHOULD BE ALTERATION OF TERRAIN SUREAU, IT WAS PRODUCT OF THE USBANDATURAL 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—WDE 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.

		,	,		,		
HYDRO							
SSSM	SYM.	SSS MAP NAME		<u> </u>	SYM.	SOIL	GRF
168		SUNAPEE		321		В	
61		TURNBRIDGE LYMAN ROCK OU	TCROP	224	/227	С	
92		LYMAN		224		D	

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

## **GRANITE ENGINEERING**

civil engineering . land planning nunicipal services

Dow Street, Tower 2, Suite 421 Manchester, New Hampshire 03101 603.518.8030



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

**GORDON SERVICES** KEENE

**IMPACT CONTROL &** MONITORING PLAN

23-0201-1 MAY 9, 2025 неет**75 of 160** 12 OF 23

LOAM & SEED ALL DISTURBED AREAS (TYP.)

NOISE IMPACT CONTROL AND MONITORING NOTES:

NOISE LEVELS GENERATED FROM EXCAVATION ACTIVITIES SHALL NOT EXCEED THE BACKGROUND AMBIENT "A" WEIGHTED SOUND PRESSURE LEVEL EXCEEDED 90% OF THE DURING THE SOUND LEVEL SAMPLING PERIOD, (HEREINAFTER "DB(A) (90 T)) BY MORE THAN 10 DB(A) AND IN ANY EVENT SHALL NOT EXCEED 55 DB(A) HEREINAFTER

MORE THAN 10 DB(A) AND IN ANY EVENT SHALL NOT EXCEED 55 DB(A) HEREINAFTER (LMAXY).

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 URING THE OPERATING SOUND LEVELS WONITORING SOS DETERMINED BY THE COMMUNITY DEVELOPMENT DIRECTOR, OR THEIR DESIGNEE, WITH THE ADVICE OF OTHER CITY STAFF AND THE PLANNING BOARD'S CONSULTANT WORDS.

NSULTANT.

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.

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.

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. HE OPERATOR BEING REPORMED ON THE SITE AT THE TIME OF THE OPERATOR O

OPERATION NOTES (TYP.)

SNOW STORAGE AREA

CONTROL NOTES (TYP.)

NONE TO 795.5 877.5 SUBSURFACE DATA FROM TEST PIT, BORING, AND WELL INSTALLATION LOGS CONTAINED IN THE LIMITED GEOHYDROLOGIC INVESTIGATION BY SLR INTERNATIONAL CORPORATION, DATED MARCH 25, 2022.

- 75' WETLAND BUFFER

SEE SHEET 1 FOR OPERATION NOTES (TYP.)

SEE SHEET 12 FOR IMPACT CONTROL & MONITORING PLAN 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 PROP. GRADE LINE EX. MAJOR CONTOUR EX. MINOR CONTOUR PERIOD LINE

## NRCS SOILS LEGEND

TOWN LINE

COLTON GRAVELLY SANDY LOAM, RATED A TUNBRIDGE-BERKSHIRE COMPLEX, RATED C TUNBRIDGE-LYMAN-ROCK OUTCROP COMPLEX, RATED C BERKSHIRE FINE SANDY LOAM, RATED B MARLOW FINE SANDY LOAM, VERY STONY, RATED C LYMAN-TUNBRIDGE-ROCK OUTCROP COMPLEX, RATED D 161 SUNAPEE FINE SANDY LOAM, RATED C

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HYDROLOGIC SSSM SYM.	SSS MAP NAME	HISS SYM.	SOIL GRE
168	SUNAPEE	321	В
61	TURNBRIDGE LYMAN ROCK OUTCROP	224/227	С
92	LYMAN	224	D

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





GRAPHIC SCALE





		REVISIONS	
No.	DATE	COMMENTS	BY
-	12/20/24	PROJECT SUBMITTAL	9
2	2/3/25	REVISED PER CITY COMMENTS	9
3	5/9/25	REVISED PER CITY COMMENTS	an On

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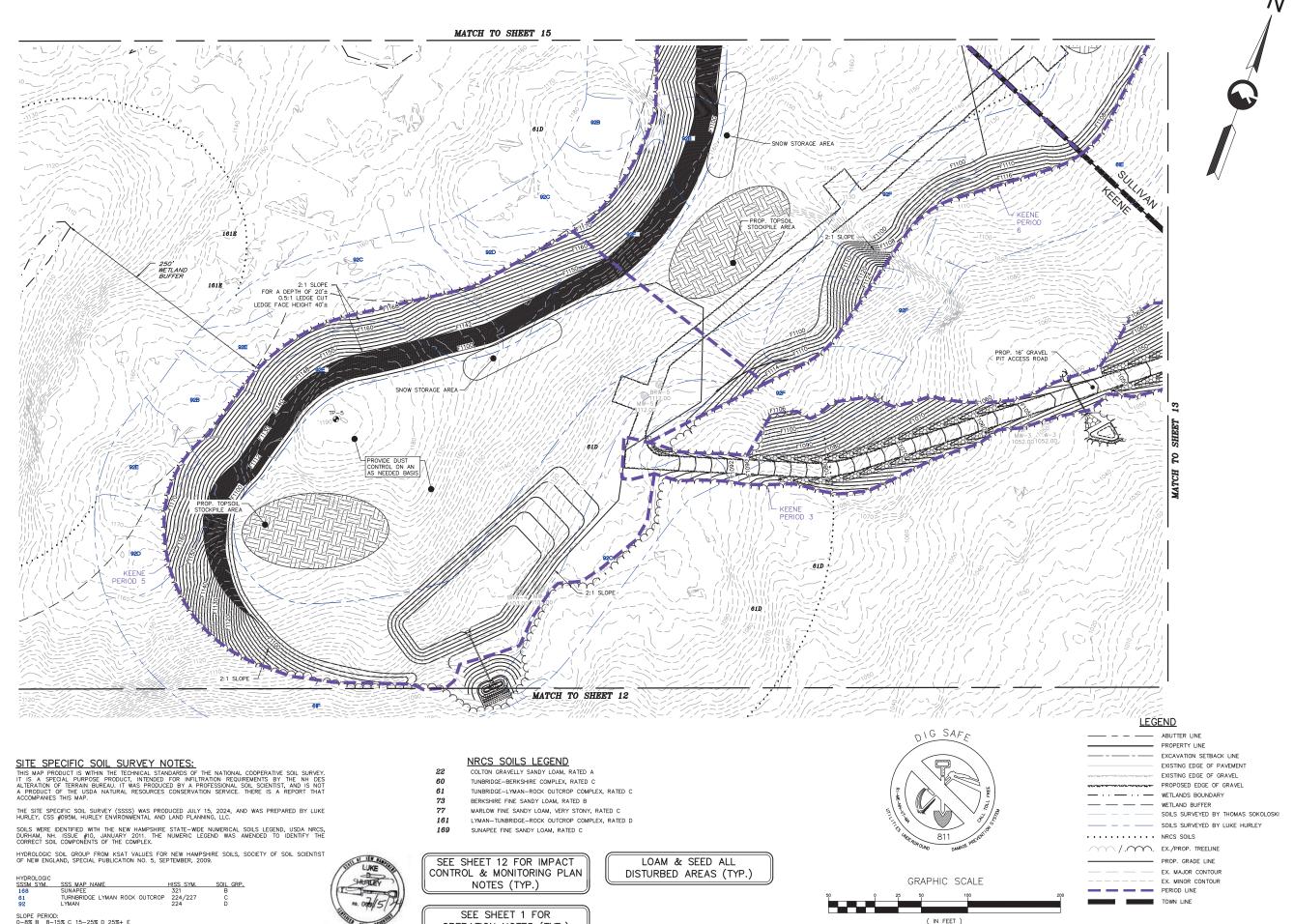


LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

GORDON SERVICES KEENE

IMPACT CONTROL & **MONITORING PLAN** 

PROJECT No. DATE: 23-0201-1 MAY 9, 2025 внеет**76 of 160** 



## **GRANITE ENGINEERING**

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LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
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GORDON SERVICES

KEENE

**MONITORING PLAN** 

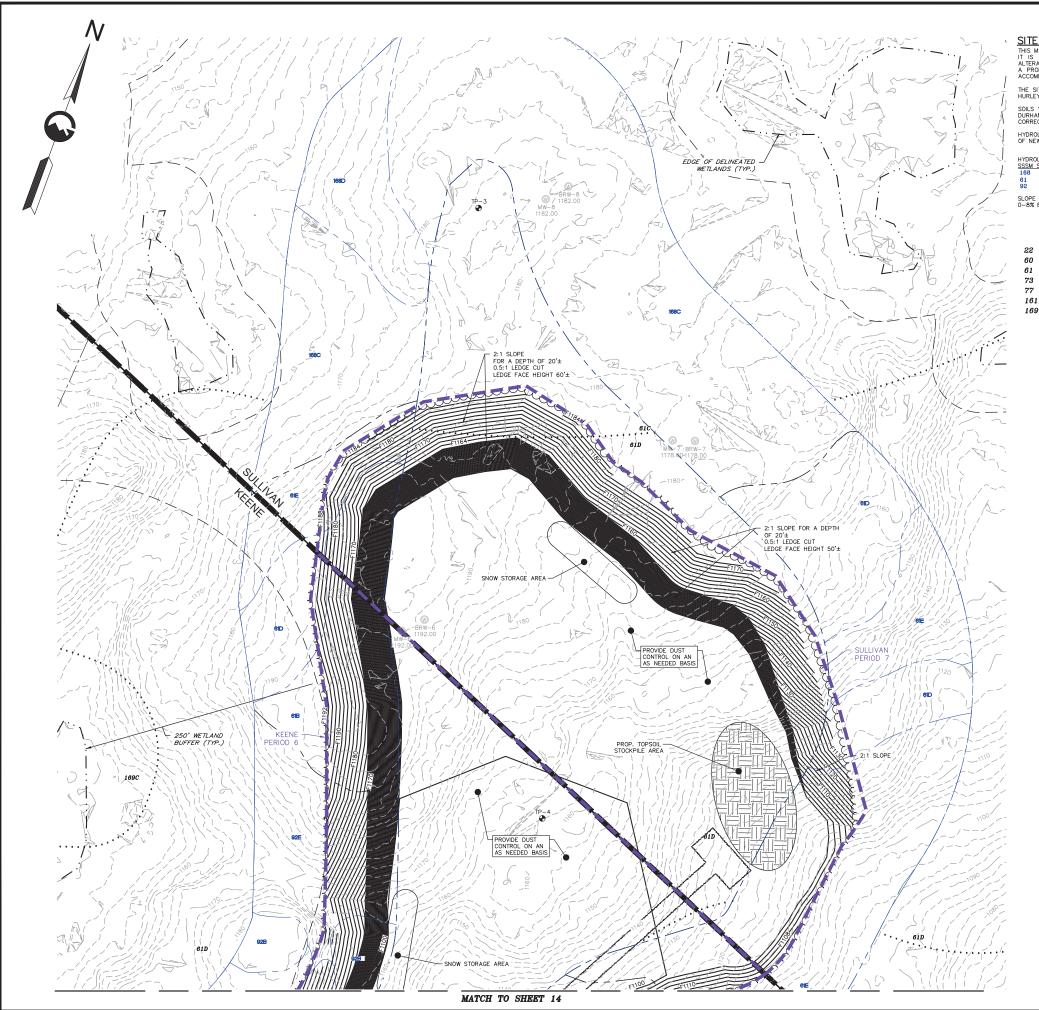
IMPACT CONTROL &

PROJECT No. DATE: 23-0201-1 MAY 9, 2025 SHEET**77 of 160** 

( IN FEET )

SEE SHEET 1 FOR OPERATION NOTES (TYP.)

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



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NRCS SOILS LEGEND
COLTON GRAVELLY SANDY LOAM, RATED A TUNBRIDGE-BERKSHIRE COMPLEX, RATED C

TUNBRIDGE-LYMAN-ROCK OUTCROP COMPLEX, RATED C

BERKSHIRE FINE SANDY LOAM, RATED B

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LYMAN-TUNBRIDGE-ROCK OUTCROP COMPLEX, RATED D

SUNAPEE FINE SANDY LOAM, RATED C



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

SEE SHEET 1 FOR OPERATION NOTES (TYP.)

LOAM & SEED ALL DISTURBED AREAS (TYP.)

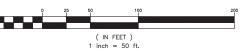
## **LEGEND**

\_\_\_\_ \_ \_ \_ ABUTTER LINE - PROPERTY LINE - --- EXCAVATION SETBACK LINE EXISTING EDGE OF PAVEMENT PROPOSED EDGE OF GRAVEL - · · - · · · WETLANDS BOUNDARY --- WETLAND BUFFER - SOILS SURVEYED BY THOMAS SOKOLOSKI ---- SOILS SURVEYED BY LUKE HURLEY

- PROP. GRADE LINE EX. MAJOR CONTOUR

EX. MINOR CONTOUR PERIOD LINE

GRAPHIC SCALE





		KE VISIONS	
No.	DATE	COMMENTS	BY
-	12/20/24	PROJECT SUBMITTAL	JD
2	2/3/25	REVISED PER CITY COMMENTS	an On
3	5/9/25	REVISED PER CITY COMMENTS	an On

## **GRANITE ENGINEERING**

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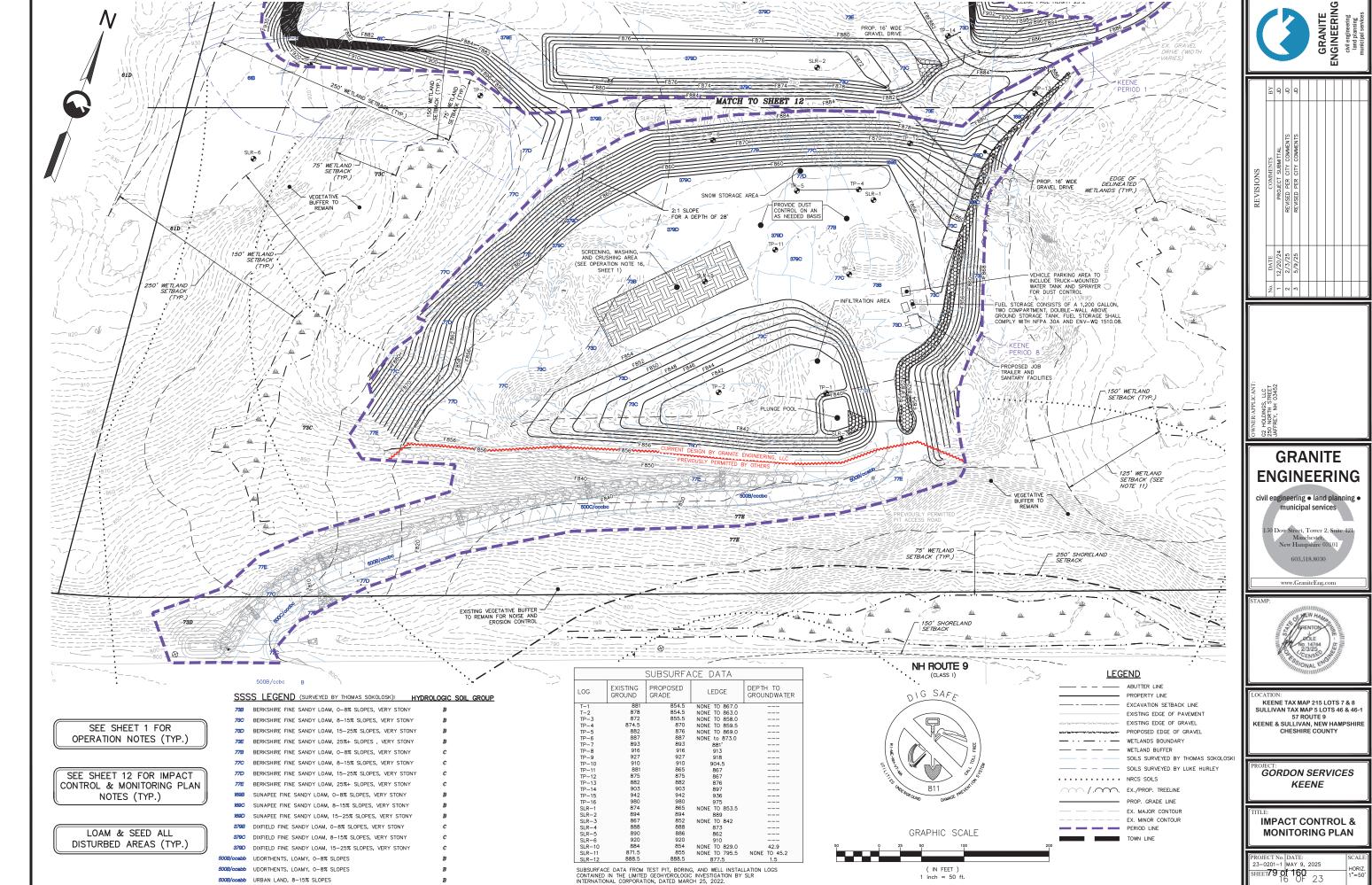


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GORDON SERVICES KEENE

IMPACT CONTROL & **MONITORING PLAN** 

PROJECT No. DATE: 23-0201-1 MAY 9, 2025 неет**78 of 160** 15 OF 23



неет**79 of 160** 16 OF 23

	ACID RO	CK DRAINAGE (ARD) MC	INITORING	
	MONITORING LOCATION	TESTING MONTHS	FREQUENCY	1.
	SLR-10	APRIL & OCTOBER	BI-ANNUALLY	
	SLR-11	APRIL & OCTOBER	BI-ANNUALLY	
	SLR-12	APRIL & OCTOBER	BI-ANNUALLY	1
	BR-1	APRIL & OCTOBER	BI-ANNUALLY	<u>l</u>
	BR-2	APRIL & OCTOBER	BI-ANNUALLY	IF A
	BR-3	APRIL & OCTOBER	BI-ANNUALLY	FOR THE
	BR-4	APRIL & OCTOBER	BI-ANNUALLY	1.
	BR-5	APRIL & OCTOBER	BI-ANNUALLY	1
	BR-6	APRIL & OCTOBER	BI-ANNUALLY	1
	BR-7	APRIL & OCTOBER	BI-ANNUALLY	2.
	BR-8	APRIL & OCTOBER	BI-ANNUALLY	3.
	SWS-1	APRIL & OCTOBER	BI-ANNUALLY UNTIL START OF PERIOD 8	4.
ATION	SWS-2	APRIL & OCTOBER	BI-ANNUALLY AFTER START OF PERIOD 1	5.
	SWS-3	APRIL & OCTOBER	BI-ANNUALLY AFTER START OF PERIOD 21	
500	SWS-4	APRIL & OCTOBER	BI-ANNUALLY AFTER START OF PERIOD 5	6.
	SWS-5	APRIL & OCTOBER	BI-ANNUALLY AFTER START OF PERIOD 8	

#### MONITORING LOCATION FREQUENCY SLR-10 MONTHI Y SI R-11 MONTHI Y SLR-12 MONTHLY MW-2 MONTHLY MW-4 MONTHLY BR-8 MONTHLY SWS-6 MONTHLY SWS-7 MONTHLY SWS-8 MONTHLY SWS-9 MONTHLY

SWS-10

SWS-11

WATER LEVEL MONITORING

AMD FORMATION S	TANDARDS
<u>ANALYTE</u>	<u>STANDARD</u>
SPECIFIC CONDUCTANCE	NO STANDARD
XIDATION REDUCTION POTENTIAL	NO STANDARD
DISSOLVED OXYGEN	75%/5 mg/L
TURBIDITY	10 NTU (BEYOND NATURALLY OCCURRING CONDITIONS)
рН	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

MONTHLY

MONTHLY



#### 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
	TP-1 TP-2 TP-3 TP-4 TP-5	TP-1 986.0 TP-2 926.0 TP-3 1180.0 TP-4 1158.0 TP-5 1190.0	TP-1         986.0         3.1'           TP-2         926.0         NONE           TP-3         1180.0         NONE           TP-4         1158.0         NONE           TP-5         1190.0         0.5'	TP-1   986.0   3,1'   NONE FOUND   TP-2   926.0   NONE   NONE FOUND   TP-3   1180.0   NONE   NONE FOUND   TP-4   1158.0   NONE   NONE FOUND   TP-5   1190.0   0,5'   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

	Elevation	Depth	Elevation	Floor Elevation	Elevation
	(ft AMSL)	(feet)	(feet/ ft AMSL)	(ft AMSL)	(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

## ON-SITE WATER QUALITY MONITORING NOTES (ARD MONITORING)

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

INITIAL RESPONSE ACTION — AMD DETECTION

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

1. ALL ACTIVE QUARRYING, WINING OPERATIONS OCCURRING IN THE AFFECTED AREA WILL CEASE AND EXPOSED BEDROCK SURFACES SHALL BE EXPEDITIOUSLY RESTORED TO HAVE A MININUM THICKNESS OF 3-FEET OF COVER MATERIAL. THE COVER MATERIAL SHALL CONSIST OF A MINIMUM OF 30% CLAY CONTENT. OVER MATERIAL SHALL BE COMPACITED IN 1-FOOT LIFTS. THE INTENT OF THE CLAY CONTENT AND COMPACITON IS TO LIMIT AIR AND SURFACE WATER CONTACT WITH THE SOURCE OF THE ACID MINE DRAINAGE CHAIL BE ARMACED WITH 1-FOOT OF 2-INCH MINUS, CRUSHED, LIMESTONE GRAVEL.

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 THE INITIAL DETECTION AND BE INCLUDED IN THE SURFACE WATER MONITORING PROGRAM.

3. ALL SURFACE WATER WITHIN 15-MILE DOWNGRADISTON 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.

4. ALL SURFACE WATER WITHIN 15-MILE DOWNGRADISTON OF THE DIRECTOR OF A MINIME PROGRAM.

5. SAMPLEND OF ALL DOWNSTON WATER WITHIN 15-MILE OF THE AFFECTED ARCA OR ACID MINE DRAINAGE FALL BE SAMPLED ON A QUARTERLY BASIS.

A IF ACID MINE DRAINAGE IS DETECTED IN A DOMESTIC WATER SUPPLY WELL THE HOMEOWNER SHALL BE NEW, UNIMPACTED, DOMESTIC WATER SUPPLY WATER TREATMENT SYSTEM INSTALLED AND MINIMAL PRAINAGE WILL BE INITIATED.

4. A GROUNDWATER QUALITY ASSESSMENT SHALL INCLUDE THE INSTALLATION OF A MINIMUM OF WITH THE HOMEOWNER.

A GROUNDWATER QUALITY ASSESSMENT IN THE AREAS ADJACENT TO THE DEJECTED AUD MINE DRAINAGE WILL BE INITIATED.

A. THE GROUNDWATER QUALITY ASSESSMENT SHALL INCLUDE THE INSTALLATION OF A MINIMUM OF THREE (3) MONITORING WELLS, ONE UPCRADIENT OF THE AFFECTED SUFFACE WATER, AND TWO DOWN-GRADIENT OF THE AFFECTED SUBFACE 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 AMALYZED FOR ACID MINE DRAINAGE PARAMETERS LISTED ABOVE. A SECOND, CONFRINATORY 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 1 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.
  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.

  ONLY OF THE PROPERTY OF THE CALENDARY OF SULLIVAN.

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  ONLY OF THE PROPERTY OF THE PROPERTY

- ON-COING MONITORING

  B. BI-ANNUAL BASIS OF WELLS DURING THE TERM OF THE PERMIT.

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

- 5. RESULTS WILL BE SENT IO THE LAND OWNER, THE CITTOR REENE, & TOWN OF SULLIVAN.

  6. DRINKING WATER RESULTS WILL BE COMPARED TO THE NHDES AMBIENT GROUNDWATER QUALITY STANDARDS (AGGS).

  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 HANDLING AND LOADING PROCEDURES; OBSERVING THE ENTIRE BLASTING PROCEDURES; EVALUATING BLASTING PERFORMANCE; AND HANDLING AND STORAGE OF BLASTED ROCK.

- (1) LOADING PRACTICES. THE FOLLOWING BLASTHOLE LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:

  (a) DRILLING LOGS SHALL BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE BLASTER. THE LOGS SHALL INDICATE DEPTHS AND LENGTHS OF VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED AS WELL AS GROUNDWATER CONDITIONS. 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 SECURE CONTAINERS FOR OFF—SITE DISPOSAL.

  (d) LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND SHALL NOT BE LEFT IN THE BLASTHOLES OVERHIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED.

- (d) LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND SHALL NOT BE LEFT IN THE BLASTHOLES OVERNIOHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED.

  (e) LOADING ROIPMENT 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 CURININ LOAD TO PROMOTE COMPLETE BROADMINSTRY ACCEPTED LOADING PRACTICES FOR PRIMING, STEMMING, DECKING AND COLUMN RISE NEED TO BE TOWN THE RELEASE OF CONTAMINATION WHEN EXPLOSIVES ARE USED.

  (2) EXPLOSIVE SHELDTON, THE FOLLOWING BIPS SHALL BE FOLLOWED TO REDUCE THE POTENTIAL FOR GROUNDWATER CONTAINATION 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 ARE APPROPRIATE WATER RESISTANCE FOR THE SITE CONDITIONS PRESENT TO MINIMIZE THE POTENTIAL FOR HAZARDOUS EFFECT OF THE PRODUCT UPON GROUNDWATER.

  (3) PREVENTION OF MISSIFES. APPROPRIATE FRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISSIFES.

  (4) MUCK PILE MANAGEMENT, MUCK PILES (THE BLASTED PIECES OF ROCK) AND DIMERENTED TO PREVENT MISSIFES.

  (5) PRINCIPLE THE MICK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.

  (6) MANAGE THE MICK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.

  (7) PREVENTION OF MISSIFES. APPROPRIATE PRACTICATION. SPILL PREVENTION AND SPILL MITGRATION OF WATER SUPPLY MEETING THE PRODUCT SHALL BE SELECTED SUBSTANCES ON AN INFERIOR.

  (b) MANAGE THE MICK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.

  (c) SPILLERS AND SHALL MICK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.

  (d) THE FILE STORAGE REQUIREMENTS SHALL INCLIDE

  (e) THE FILE STORAGE REQUIREMENTS SHALL INCLIDE

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3000	LOSON DOO	J. J				
			SU	BSURFACE	DATA	
	LOG	EXISTING	PROPOSED	LEDGE	DEPTH TO	GROUNDWATER

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

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
-	12/20/24	PROJECT SUBMITTAL	9
2	2/3/25	REVISED PER CITY COMMENTS	an Or
3	5/9/25	REVISED PER CITY COMMENTS	an On

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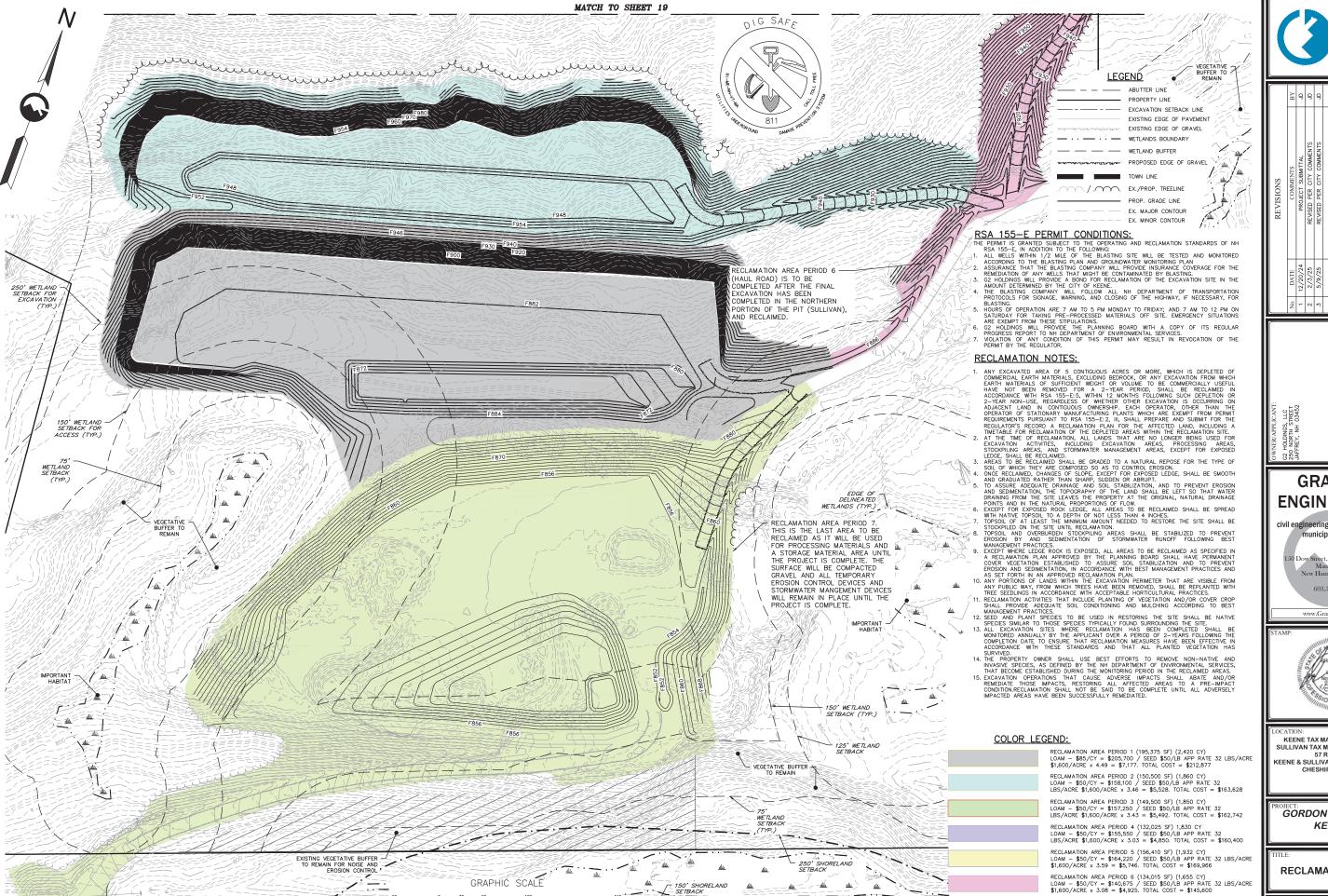
KEENE TAX MAP 215 LOTS 7 & 8

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

**GORDON SERVICES** KEENE

**MONITORING PLAN** 

23-0201-1 MAY 9, 2025 HEE1**80 of 160** 



( IN FEET ) 1 inch = 60 ft

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KEENE TAX MAP 215 LOTS 7 & 8 SULLIVAN TAX MAP 5 LOTS 46 & 46-1 57 ROUTE 9

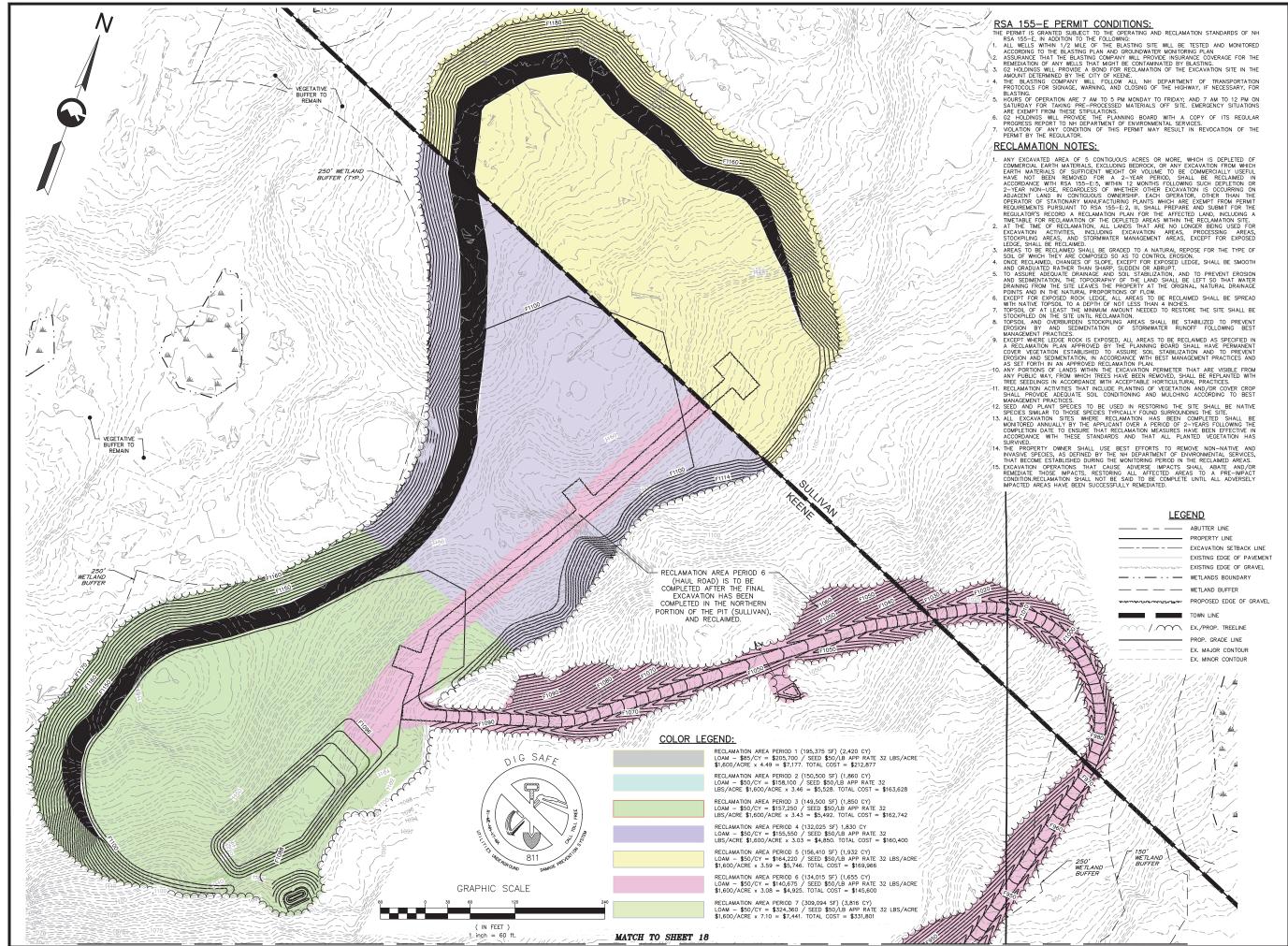
KEENE & SULLIVAN, NEW HAMPSHIRE **CHESHIRE COUNTY** 

**GORDON SERVICES** KEENE

RECLAMATION AREA PERIOD 7 (309,094 SF) (3,816 CY) LOAM - \$50/CY = \$324,360 / SEED \$50/LB APP RATE 32 LBS/ACRE \$1,600/ACRE  $\times$  7.10 = \$7,441. TOTAL COST = \$331,801

**RECLAMATION PLAN** 

PROJECT No. DATE: 23-0201-1 MAY 9, 2025 внеет**81 of 160** 18 OF 23





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SPEW HAMO

LOCATION:

KEENE TAX MAP 215 LOTS 7 & 8

SULLIVAN TAX MAP 5 LOTS 46 & 46-1
57 ROUTE 9

KEENE & SULLIVAN, NEW HAMPSHIRI

**CHESHIRE COUNTY** 

OJECT:
GORDON SERVICES
KEENE

TITLE:

RECLAMATION PLAN

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

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

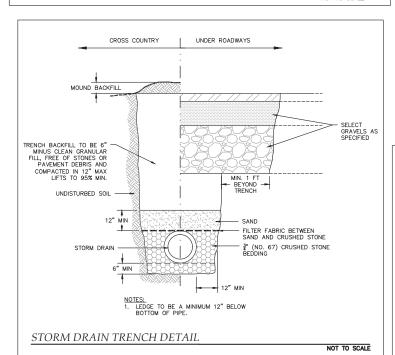
- NULLS:

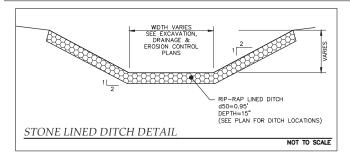
  1. FOR DESCRIPTIONS, MATERIALS AND CONSTRUCTION METHODS, SEE LATEST NHOOT SPECIFICATIONS.

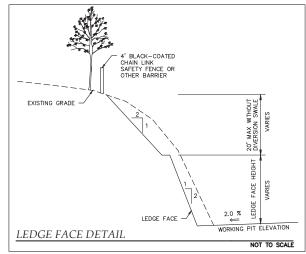
  2. ALL CONCRETE DIMENSIONS SHOWN ARE MINIMUM.

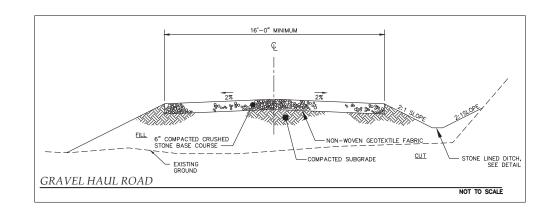
## TYPICAL CONCRETE HEADWALL DETAIL

NOT TO SCALE









" HDPE PLATE BOLTED TO

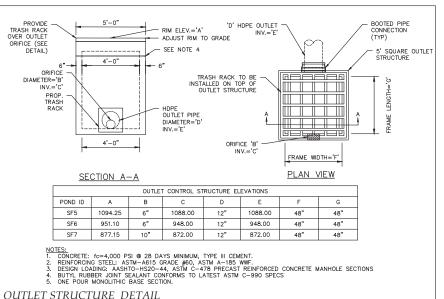
**SECTION** 

**ELEVATION** 

HDPE STRUCTURAL PLASTIC #" PLATE AND GRATING WITH 1" HOLES OR # ORIFICE DIAMETER AND A MIN. OF 30% OF OPENING AREA.

SHOWN WITH OPTIONAL PLATE

- HDPE STRUCTURAL PLASTIC I PLATE AND GRATING WITH 1" HOLES OR I ORIFICE DIAMETER AND A MIN. OF 30% OF OPENING AREA.



NOT TO SCALE - 4" OF LOAM & SEED UPON FINAL RECLAMATION OF PIT FLOOR PROPOSED OUTFLOW STRUCTURE
IN WITH TRASH TRACK OVER THE
ORIFICE (SEE DETAIL SHEET AND
ORIFICE SIZE/ELEVATION SEE TABLE). - ZONE II HDPE OUTLET REMOVE TOP SOILS AND/OR OTHER ORGANIC SOILS PRIOR TO PLACING FILL MATERIAL ANTI SEEP COLLAR OR CLAY TRENCH DAM

PIPE CULVERT

SINGLE BMP ORIFICE

TRASH RACK DETAIL

- 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
- CLEAR AND CUT THE AREA TO THE NECESSARY EXTENT. CONTRACTOR TO PROPERLY DISPOSE OF ALL DEBRIS.
   ALL SILTATION AND TEMPORARY EROSION CONTROLS MEASURES SHALL BE INSTALLED AS CALLED FOR ON PROJECT PLANS PRIOR TO GRUBBING OF CLEARED AREAS.
   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

- ORGANIC MATERIAL SUITABLE FOR USE AS 10P-SUL IN OPLAND AREAS. ALL STOCKING TO BE SEEDED AND, IF NECESSARY, SURROUNDED WITH HAY BALES TO PREVENT LOSSES DUE TO ERROSION.

  CONSTRUCT TEMPORARY CULVERTS AS NECESSARY FOR CONSTRUCTION ACTIVITIES. ALL CROSSINGS TO BE PROTECTED BY HAY BALE BARRIERS TO PREVENT EROSION.

  CONSTRUCT OUTLET FRENCH (PART OF ZONE I).

  CONSTRUCT OUTLET AND OVERFLOW STRUCTURE, CULVERT, ANTI SEEP COLLARS, HEADWALL, AND RIP RAP OUTLET PROTECTION AS SHOWN ON PLANS AND DETAILS.

  CONSTRUCT ZONE I PORTION OF EARTH EMBANKMENT.

  ONSTRUCT ZONE I PORTION OF EARTH EMBANKMENT.

  APPLY OPPOLIT OF CONTROL OF EARTH EMBANKMENT.

  PLACEMENT ON TOPSOIL, FINISHED AREAS OF ASTO BE FREE OF ALL DELETERIOUS MATERIAL. TOPSOIL SHALL BE A MINISHME OF EARTH EMBANKMENT IN THE COMPACTED HICKNESS. UPON PLACEMENT ON TOPSOIL, FINISHED AREAS ARE TO BE LIMED. SEEDED AND MULCHED. CONSTRUCTION TOPSOIL INSPECT COMPLETED SECTIONS OF WORK ON A REGULAR BASIS AND REMEDY ALL PROBLEM AREAS UNTIL GRASS HAS BECOME ESTABLISHED.

  MAINTAIN, REPAIR AND REPLACE TEMPORARY EROSION CONTROL MEASURES AS NECESSARY UNTIL THE WHOLE CONSTRUCTION ARE HAS BEEN STABILIZED (MINIMUM ONE WINTER).

  REMOVE AND SUITABLY DISPOSE OF TEMPORARY EROSION CONTROL MEASURES AS THE STABLIZATION.

  MONTOR ON 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	1094.25	6"	1088.00	12"	1088.00	
SF6	SETTLING BASIN #6	948.00	947.50	952.00	OCS #7A	951.10	6"	948.00	12"	948.00	
SF7	SETTLING BASIN #7	872.00	871.50	880.00	OCS #8A & OCS #9A	877.15	10"	872.00	12"	872.00	

#### 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.

6-INCH NO. 4 NO. 40 NO. 200

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

0-12 (IN SAND PORTION ONLY) NO. 200

NOT TO SCALE

**ISOMETRIC** 

NOT TO SCALE

**GRANITE ENGINEERING** 

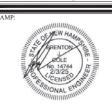
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KEENE TAX MAP 215 LOTS 7 & 8 SULLIVAN TAX MAP 5 LOTS 46 & 46-1 57 ROUTE 9 KEENE & SULLIVAN, NEW HAMPSHIRE **CHESHIRE COUNTY** 

**GORDON SERVICES** KEENE

**DETAILS** 

23-0201-1 MAY 9, 2025 SHEET**83 of 160** 20 OF 23

SEDIMENT RETENTION POND DETAIL

- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN THE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP—SLOPE PORTION OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET OWEN COVER SEED AND COMPACTED SOIL SURVEY COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET DAKE OVER SEED AND COMPACTED SOIL SURVEY OF SEED SOIL SURVEY OF SEED SOIL SURVEY OVER SEED AND COMPACTED SOIL SURVEY OF SEED SOIL SURVEY OVER SEED AND COMPACTED SOIL SURVEY OVER
- COMPACTED SOIL WITH A ROW OF STAPLES/SIAKES SPACED APPROXIMATELY 12 (2001) AN ENTROCUSOR THE BLANKET.

  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 SCUDIELY 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.

  THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm)

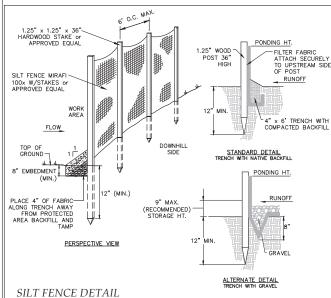
  OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED
- BLANKET.
  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: "NI LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6"
  (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.
  THERE SHALL BE NO PLASTIC, OR MULTIFILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING
  SIZE OF GREATER THAN 1/6 INCHES MATERIAL UTILIZED.

EROSION CONTROL BLANKET DETAIL

SPILLWAY DETAIL

NOT TO SCALE

3" MINUS RIP-RAF



OTES:

THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.

THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND AND THE SOIL COMPACTED OWER THE MEET SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE THE OR STAPLES WHERE NOTED OR AS DIRECTED BY DESIGN ENGINEER. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WHEE FENCE WITH THE SPACED EVERY 24 INCHES AT THE TOP, MIDSECTION AND BOTTOM.

WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.

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 STAPLED.

MAINTAINES SHALL BE A MINIMUM OF THE STAPLED OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS MALL SHALL SHALL SHALL BE A MINIMUM OF SOUND CHARLES WITH THE SHALL BE A MINIMUM OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS MALL SHALL SHALL BE A STAPLED.

MAINTENANCE:

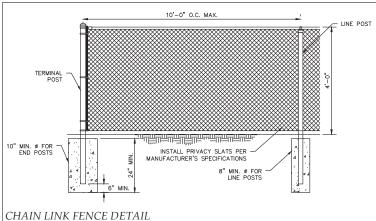
1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER ACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.

2. IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INFFECTIVE 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.

NOT TO SCALE



EXISTING GROUND

## - MAX 2:1 SLOPE BEYOND LIMITS OF INFILTRATION BASIN MAX 3:1 SIDE SLOPES TOP BERM ELEV. ∠ MAX 3:1 SLOPE INFILTRATION BASIN BOTTOM SPILLWAY (SEE DETAIL) BOTTOM ELEV LINE WITH 12 INCHES

CONTINUOUS SINGLE LAYER OF MIRAFI 140-N NON-WOVEN GEOTEXTILE FILTER

FABRIC (OR APPROVED EQUAL)

POND ELEVATIONS POND ID BASIN NAME TOP BERM SPILLWAY TEMPORARY SEDIMENTATION AREA IN PERIOD 1 860.00 874.00 SF1 SF8 INFILTRATION POND IN PERIOD 8 842.00 856.00 855.50

SPILLWAY

NOT TO SCALE

NOTES:

1. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO PERMANENT INFILTRATION BMPS.

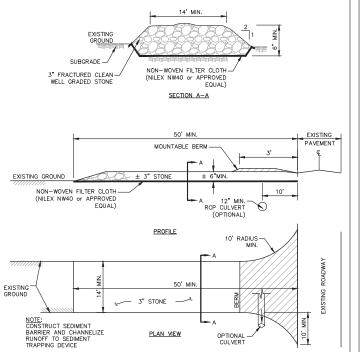
2. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

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,

ABOVE-GROUND INFILTRATION POND #SF1 AND SF8

NOT TO SCALE



 ${\color{red} {\rm NOTES:}}$  1. Stone for a stabilized construction exit shall be 3 inch stone, reclaimed stone or recycled

NOTES.

STONE FOR A STABILIZED CONSTRUCTION EXIT SHALL BE 3 INCH STONE, RECLAIMED STONE OR RECYCLED CONCRETE EQUIVALENT.

THE LENSTH 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.

THE LINKINGES OF THE STONE FOR THE STABILIZED EXIT SHALL NOT BE LESS THAN 6 INCHES.

THE WIDTH OF THE EXIT SHALL NOT BE LESS THAN THE FULL WIDTH OF THE AREA WHERE INCRESS OR EGORESS OCCURS OR 10 FEET, WHICHEVER IS GREATER.

FLIER COCH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.

A THE WIDTH OF THE EXIT SHALL BE PROMISED FOR A SINGLE FAMILY RESIDENCE LOT.

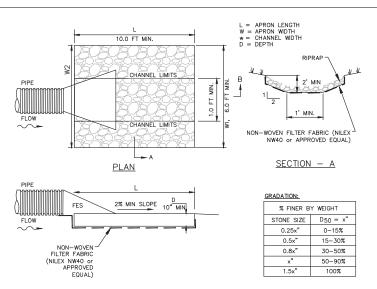
A PROPERTY OF THE STATE OF THE PROMISE FAMILY RESIDENCE LOT.

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#### STABILIZED CONSTRUCTION EXIT DETAIL.

NOT TO SCALE



#### SECTION - B

## NOTES:

- THE APRON SUBGRADE TO BE PREPARED TO THE GRADES SHOWN ON THE APPROVED PLANS.

  THE FRACTURED ROCK (RIP-RAP) SHALL CONFORM TO THE SPECIFIED GRADATION (D<sub>20</sub>=4" MIN.).

  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

  1.2.0 INCHES.

  RIP-RAP PLACEMENT SHALL BE IN ONE CONTINUOUS LIFT TO THE DEPTH SPECIFIED, AVOIDING MATERIAL

  SFGRFGATOR

#### MAINTENANCE

THE APRON SHOULD BE INSPECTED AFTER EVERY MAJOR RAIN EVENT (\$\,2\) "). IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE VEGETATED CHANNEL IMMEDIATELY BELOW THE OULDET SHOULD BE PERIODICALLY INSPECTED FOR DEGRADATION. IF DEGRADATION ACCURRED, PERIODICALLY INSPECTED FOR DEGRADATION ACCURRED, PERIODICALLY INSPECTED FOR DEGRADATION ACCURRED, PERIODICALLY INSPECTED 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.

SIRUCIURE	LENGIH	WI WI	WZ	D30	DEPIR
HW#1B	12'	16'	4'	4"	10"
HW#2B	15'	18'	4'	6"	15"
HW#3B & HW#4B	25'	31'	6'	12"	30"
HW#5B	9'	13'	4'	4"	10"
HW#6B	9'	12'	3'	4"	10"
H <sub>.</sub> W#7B	9'	12'	3'	4"	10"
HW#8B	17'	10'	3'	4"	10"
HW#10B	16'	10'	4'	4"	10"
HW#11B (FINAL)	12'	9'	4'	4"	10"

OUTLET PROTECTION DETAIL

NOT TO SCALE



	BY	ΩΓ	an	a۲				
REVISIONS	COMMENTS	PROJECT SUBMITTAL	REVISED PER CITY COMMENTS	REVISED PER CITY COMMENTS				
	DATE	12/20/24	2/3/25	5/9/25				
	No.	-	2	3				

NOT TO SCALE

## **GRANITE ENGINEERING**

civil engineering . land plann municipal services

> Dow Street, Tower 2, Suite 421 Manchester, Hampshire 03: 603.518.8030



KEENE TAX MAP 215 LOTS 7 & 8 SULLIVAN TAX MAP 5 LOTS 46 & 46-1

**GORDON SERVICES** KEENE

KEENE & SULLIVAN, NEW HAMPSHIRE

**CHESHIRE COUNTY** 

**DETAILS** 

23-0201-1 MAY 9, 2025 HEE1**84 of 160** 

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 NHOEDS PRIOR TO INTINITATING BLASTING. THE GROUNDWATER SAMPLE PROGRAM MUST BE
IMPLEMENTED ONCE APPROVED BY NHOES.

ALL ACTIVITIES RELATED TO BLASTING SHALL FOLLOW BEST MANAGEMENT PRACTICES (BMPS) TO PREVEN ALL ACTIVITIES REPUBLIED TO THE PROPERTY OF THE PROCEDURES; CONTAMINATION OF GROUNDWATER INCLUDING PREPARATION, REVIEWING AND FOLLOWING AN APPROVED BLASTING PLAN; PROCED PRICE PROCEDURES; EVALUATING BLASTING PROCEDURES; EV

- 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 BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE
  BLASTER. THE LOGS SHALL BICHARDLES BY BEILL AS GROUNDWAFER CONDITIONS.

  (b) EXPOSED THE REPORT OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF SITE
  DISPOSAL.

  (c) SPILLAGE ARQUIND 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 OVERNICHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT
  DETONATION SHOULD BE POSTPONED.
  - DETONATION SHOULD BE POSTPONED.

    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
- PROPERLY CONTAINED AND HANDLED IN A MANNER THAT THE THE THE COLUMN LOAD TO PROMOTE 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 CASE PLAST EXPENSITION.

- (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 MISPIRES. APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISPIRES.

  (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:
- - REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.

- MEASURES:

  (a) REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOM AS REASONABLY POSSIBLE.

  (b) MANAGE THE INTERACTION OF BLASTED ROCK PILES AND STORMMATER TO PREVENT
  CONTAINMATION OF WATER SUPPLY WELLS OR SURFACE WATER.

  (c) 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.

  (d) THE FUEL STORAGE REQUIREMENTS SHALL INCLUDE

  1. STORAGE REQUIREMENTS SHALL INCLUDE

  1. STORAGE REQUIREMENTS SHALL INCLUDE

  1. STORAGE OF REGULATED CONTAINERS ON AN IMPERVIOUS SURFACE.

  2. LABEL REGULATED CONTAINERS CLEARLY AND MISIBLY.

  3. LABEL REGULATED CONTAINERS LEARLY AND MISIBLY.

  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 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 REQULATED

  (a) THE FUEL HANDING REQUIREMENTS SHALL INCLUDE:

  1. EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED
  AND SEALED.

  2. PLACE DRIP PANS UNDER SPICOTS, VALVES, AND PUMPS.

  3. HAVE SPILL CONTROL AND CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED
  AND SEALED.

  2. PLACE DRIP PANS UNDER SPICOTS, 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.

  6. PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SUFFACE.

  (b) THE TRAINING OF ON SITE EMPLOYEES AND THE ON SITE POSING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.

  (c) THE FRAINING OF ON SITE EMPLOYEES AND THE ON SITE POSING OF RELEASE RESPONSE INFORMATION DESCRIBIN

## BEST MANAGEMENT PRACTICES FOR BLASTING

- CONTACT DIG SAFE AT LEAST 72 HOURS BEFORE ANY EXCAVATION WORK.
  CUT AND CLEAR TREES AND BRUSH WITHIN LIMITS OF CLEARING SHOWN ON PLAN.
  INSTALL ALL APPLICABLE TEMPORARY EROSION CONTROL MEASURES PRIOR PRIOR TO COMMENCEMENT OF
  ANY EARTHMOWING OPERATIONS. THE STABILIZED CONSTRUCTION EXIT SHALL BE IN PLACE AS SHOWN ON
  THE EDRE FOR TO INANS.
- ANY EARTHMOVING OPERATIONS. THE STABILIZED CONSTRUCTION EXIT SHALL BE IN PLACE AS SHOWN ON THE PROJECT PLANS.

  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 STOCKPILES WITHIN AREAS OUT OF THE WAY OF OTHER CONSTRUCTION ACTIVITIES AND PRAINAGE FLOW. STOCKPILES SHALL BE TEMPORARILY SEEDED WITH WINTER RYE AND BE SURROUNDED BY PERIMETER CONTROLS TO PREVENT EROSION.

  1 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.

  ALL PERMANENT EROSION CONTROL MEASURES AND DETENTION FACILITIES SHOULD BE INSTALLED PRIOR TO CREADING FOR PROJECT.

- 4.30:53 AND CHAPTER AGN 390U RELATIVE TO INVASIVE SPECIES.

  ALL PERMANENT EROSION CONTROL MEASURES AND DETENTION FACILITIES SHOULD BE INSTALLED PRIOR TO GRADING FOR FOLICIT.

  COMMENCE EARTHWENCE.

  COMMENCE EARTHWENCE AND OTHER UTILITIES SHOULD BE CONSTRUCTED FROM LOW GRADE TO HIGH COMMENCE EARTHWENCE AND OTHER UTILITIES SHOULD BE CONSTRUCTED FROM LOW GRADE TO HIGH CARDE. 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 ABSE COURSE GRAVELS ARE INSTALLED IN AREAS TO BE PAVED;

  B. A MINIMUM OF 35' 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 STOCKPILLED LOAM SUPPLEMENTED WITH BORROW LOAM, IF NECESSARY, TO LEAVE THE SPECIFIED THICKESS.
- THICKNESS.

  I. 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

- ALL MEASURES IN THE PLAN SHALL MEET AS A MINIMUM THE BEST MANAGEMENT PRACTICES SET FORTH IN VOLUME 3 OF THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES.

  HIS 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.

  WHENEVER PRACTICAL, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED OR SUPPLEMENTED. THE STRIPPING OF VEGETATION SHALL BE DONE IN A MANNER THAT MINIMIZES SOIL EROSION.

  APPROPRIATE REPOSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO LAND DISTURBANCE.

  THE AREA OF DISTURBANCE SHALL BE KEPT TO A MINIMUM. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 30 DAYS SHALL BE STABILIZED.

- STABLL BE DUTE, IN A MANUFACT THAI MINIMALS SHALL BE INSTALLED PRIOR TO LAND DISTURBANCE.

  APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO LAND DISTURBANCE.

  STABILIZED

  AND RETAINED WITHIN THE PROJECT AREA USING APPROVED MEASURES.

  ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN FUNCTIONING CONDITION UNTIL FINAL SITE STABILIZETORY.

  ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN FUNCTIONING CONDITION UNTIL FINAL SITE STABILIZATION IS ACCOMPLISHED.

  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.

  THE TOWN OF MILEORD SHALL RESERVE THE RIGHT TO REQUIRE FURTHER EROSION CONTROL PRACTICES DURING CONSTRUCTION SHOULD THEY FIND IT RECESSARY.

  THE TOWN OF MILEORD SHALL RESERVE THE RIGHT TO REQUIRE FURTHER EROSION CONTROL PRACTICES DURING CONSTRUCTION SHOULD THEY FIND IT RECESSARY.

  THE RESPONSIBLE PARTY SHALL INSTALL, INSPECT, REPORT, OPERATE, AND MAINTAIN ALL STORMWATER MANAGEMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH PROJECT PLANS. IN ADDITION, SIMILAR MEANTAINED AREAS DESIGNATED TO BE TURF, SHALL RECEIVE A MINIMUM APPLICATION OF 4 INCHES OF LOAM (COMPACTED THICKNESS), PRIOR TO FINAL SEEDING AND MULCHING.

  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.

  IN HE 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 CLIMINATE SHALL BE CONTROLLED BY THE USE OF WATER AS NECESSARY THROUGHOUT THE CONSTRUCTION PERIOD, IN ACCORDANCE WITH ENV.—A 1000.

  IN NO WAY ARE THOSE TEMPORARY EROSION CONTROL MEASURES INDICATE

- 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:

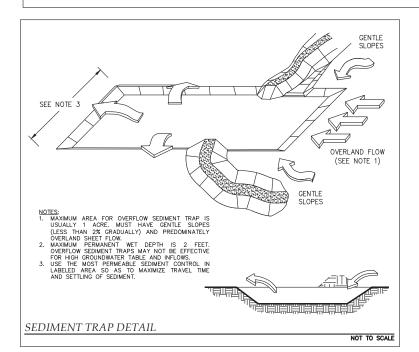
  A BASE COURSE GRAVELS ARE INSTALLED IN AREAS TO BE PAVED:

  B. A MINIMUM OF 8'05 K VEGETATED GROWTH HAS BEEN ESTABLISHED;

  C. A MINIMUM OF 8'05 K VEGETATED GROWTH HAS BEEN ESTABLISHED;

  RIP RAP HAS BEEN INSTALLED; OR RIP RAP HAS BEEN INSTALLED, DAY OF THE REPORT OF THE PAVED OF THE PAVED

## EROSION CONTROL NOTES



- 1. ALL PROPOSED POST-DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE OROWITH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREAT 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 ANALL 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

ALL AREAS TO BE SEEDED SHALL BE PREPARED TO PROVIDE A REASONABLY FIRM BUT FRIABLE SEED BED. 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 GIVIN 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, DRAGED WITH A CHAIN OR MAT, MACHINE-RAKED, OR HAND-KREED TO GIVE THE FEFFECT OF MINIATURE TERRACES, PARTICULARLY IN SILTY OR CLAYEY SOILS. THE SLOPES SHALL BE

THE EFFECT OF MINIATURE TERRACES, PARKITICULARLY IN SILTY OR CLAYEY SOILS. THE SLOPES SHALL BE LEFT SMOOTH ENOUGH TO ENABLE MOWNG.

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 LOSSE, FRIABLE SEEDBEA IN ORDER TO MAINTAIN A CONSISTENT GRADE, LOAM PLACED ADJACENT TO LAWNS OR WHERE DIRECTED SHALL BE COMPACTED WITH A FOLLER WEIGHING APPROXIMATELY 100 POUNDS PER FOOT OF ROLLER WIGHTH, AND POULTS PER FOR THE POULTS PER

DEPRESSIONS EXPOSED DURING INTERVALUES FROCEDORS. SINCE SET THE STATE OF REFUSE OR MATERIAL TOXIC TO COLED.

LOAM SHALL CONSIST OF LOOSE FRIABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE OF WABLE 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, SUSSOIL, 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 IONITION. NOT MORE THAN 65 PERCENT SHALL PASS A NO. 200 SIEVE AS DETERMINED BY LOSS BY IONITION. NOT MORE THAN 55 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.

- AULIAREAS TO BE SEEDED SHALL MEET THE SPECIFIED GRADES AND SHALL BE FREE OF GROWTH AND DEBRIS. CARE SHALL BE TAKEN TO PREVENT THE FORMATION OF LOW PLACES AND POCKETS WHERE WATER WILL
- 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 SECEDED WITH PERMANENT GRASSES TO PREVENT THE RYEGRASS FROM RESEDING AND BECOMING COMPETITIVE SECEDED WITH PERMANENT GRASSES TO PREVENT THE RYEGRASS FROM RESEDING AND BECOMING COMPETITIVE WITH THE PROPERTY OF TH

- 11. AREAS SEEDED WITH PARK SEED SHALL BE MOWED WHENEVER NECESSARY TO KEEP THE GROWTH BETWEEN 3 AND 6° 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 GROWITH IS DESIRED AND THERE ARE MORE THAN 15 PERCENT FINES. THE STANDARD CONSERVATION MIXES AVAILABLE FROM LOCAL SEED SUPPLERS 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/AGRE (SO 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 BUILLOPZER TO "TRACK" THE SITE AFTER SEEDING. TRACKING WILL INCORPORATE THE LIME, FERTILIZER, AND SEED USING RAKES IF SEEDING INFACKING WILL INCORPORATE THE LIME, FERTILIZER, AND SEED USING RAKES IF SEEDING INFACKING WILL INCORPORATE THE LIME, FERTILIZER, AND SEED TO PROMOTE SEED GERMINATION. FOR MIXES 2 & 3, IN LEU 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 SG 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. S. LOUR AND THE SEED LEGUMES IN MIX. S. LOUR AND THE SEED OF SECOND SHORTEN SEASON SHAPPLY LIME, SEED CONTENT WILL INHIBIT SEEDING SUCCESS. DO NOT APPLY MUCH AND TO TRACKING WITH A BUILLOWER FOR THE MIXED SEED OF THE

- WITH CONVENTIONAL SEEDING.
  THE PLANT SPECIES IN MIXES 1 AND 2 CERMINATE 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 YEARS. THE NEED TO DO FOLLOW-UP SEEDING CAN BE DETERMINED THE WARE DIFFICULT PARTS OF SOME SITES. THE NEED TO DO FOLLOW-UP SEEDING CAN BE DETERMINED THE YEAR AFTER THE INITIAL PLANTING.

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

FLATPEA	10
PERENNIAL PEA	2
CROWN VETCH	10
TALL FESCUE	10
MIX 3 (COOL SEASON GRAS	SES AND LEGUMES)
KIND OF CEED	DOUNDS (ACDE

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

## TURF ESTABLISHMENT SPECIFICATIONS

- . SECONDARY CONTAINMENT EQUIPMENT USED DURING MOBILE FUELING SHOULD BE SIZED TO CONTAIN THE MOST LIKELY VOLUME OF FUEL TO BE
- 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.

  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.

  PERSONNEL MUST ATTEND TO THE FUELING PROCESS TO ENSURE THAT ANY SPILLS WILL BE OF LIMITED VOLUME.
- SECONDARY CONTAINMENT FOR OUTDOOR STORAGE AREAS (FOR FUEL OR OTHER REGULATED SUBSTANCES) MUST BE COVERED WITH A ROOF, PLASTIC SHEETING, OR WATERPROOF TARRAULINS 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 VOLKE REMAINS TO CONTAIN A RELEASE FROM THE LARGEST STORAGE TANK. FOR RELATIVELY SMALL STORAGE AREAS, SPILL CONTAINMENT PALLETS AND COVERS ARE COMMERCIALLY AVAILABLE.
- AVAILABLE.

  IF ANY OF THE FOLLOWING OCCURS, THE SPILL MUST BE IMMEDIATELY REPORTED TO THE NHDES AT (603) 271-3899 OR STATE POLICE AT (603) 223-4381 AFTER 4 P.M. ON WEEKDAYS OR ON WEEKENDS:

  A. THE SPILL IS SET GALLONS OR MORE.

  B. THE SPILL IS SET GALLONS OR MORE.

  C. THE SPILL IS NOT CONTAINED IMMEDIATELY.

  B. THE SPILL AND CONTAINED AND CONTAINED TO COMPLETE Y REMOVED, WITHIN 24 HOURS.

  - THE SPILL AND CONTAINED IMMEDIATELY.
    THE SPILL AND CONTAMINATION ARE NOT COMPLETELY REMOVED WITHIN 24 HOURS.
    THERE IS IMPACT OR POTENTIAL IMPACT TO GROUNDWATER OR SURFACE WATER.

## MOBILE FUELING NOTES



		REVISIONS	
No.	DATE	COMMENTS	BY
-	12/20/24	PROJECT SUBMITTAL	9
2	2/3/25	REVISED PER CITY COMMENTS	On
3	5/9/25	REVISED PER CITY COMMENTS	9

## **GRANITE ENGINEERING**

civil engineering . land plann municipal services

> Dow Street, Tower 2, Suite 421 Manchester, New Hampshire 03101 603.518.8030



KEENE TAX MAP 215 LOTS 7 & 8 SULLIVAN TAX MAP 5 LOTS 46 & 46-1 KEENE & SULLIVAN, NEW HAMPSHIRE

**CHESHIRE COUNTY** 

GORDON SERVICES KEENE

**DETAILS** 

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- 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
- 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 LAST 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 DESION. AT A MINIMUM, MOW ANNUALLY TO CONTROL WOODLY VEGETATION WITHIN THE SPREADER.

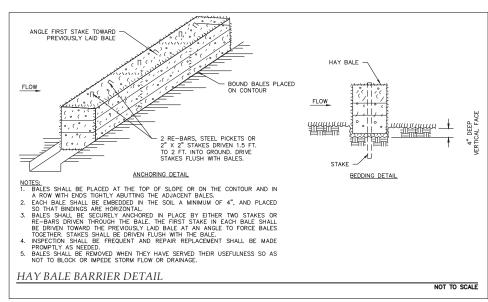
5. SNOW SHOULD NOT BE STORED WITHIN OR DOWN-SLOPE OF THE LEVEL SPREADER OR ITS APPROACH CHANNEL.

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

## 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 HAMPSHIPE: 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.

<u>QESCRIPTION:</u> 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-MOVING 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: //WLDLIFE.STATE.NH.US/WLDLIFE/PROFILES/WOOD-TURTLE.HTML

## **WILDLIFE PROTECTION NOTES:**

- 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 NHFOREVIEW® MILDLIFE.HH.600. 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 VERHICATION AS FEASIBLE.

  IN THE VENET A THERATENED 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 DES NOT APPRECIABLY JEOPARDIZE THE CONTINUED EXISTENCE OF THREATENED AND ENDANGERED SPECIES AS DEFINED IN FIS 1002.04.
- FIS 1002.04.
  THE NHF&G, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.



TP #2 TP #3 TP #4 TP #5 FINE SANDY LOAM, GRANULAR, FRIABLE. 10YR3/2 FINE SANDY LOAM, GRANULAR, FRIABLE FINE SANDY LOAM, GRANULAR, FRIABLE 10YR3/2 LOGGED BY LUKE HURLEY LOGGED BY LUKE HURLEY LOGGED BY LUKE HURLEY 10YR3/2 LOGGED BY LUKE HURLE' LOGGED BY LUKE HURLEY FILL HURLEY ENVIRONMENTAL AND PLANNING, LLC CSS#095 DATE: 7/15/24 IMPERVIOUS: NONE WATER: NONE ESHWT: NONE HURLEY ENVIRONMENTAL AND LAND PLANNING, LLC CSS#095 DATE: 7/15/24 IMPERVIOUS: NONE WATER: NONE ESHWT: NONE AND LAND PLANNING, LLC CSS#095 DATE: 7/15/24 BOTTOM OF HOLE AND LAND PLANNING, LLC CSS#095 AND LAND PLANNING, LLC CSS#095 FINE SANDY LOAM, GRANULAR, FRIABLE 10YR4/3 FINE SANDY LOAM, GRANULAR, FRIABLE DATE: 7/15/24 IMPERVIOUS: NONE WATER: NONE ESHWT: 32" DATE: 7/15/24
IMPERVIOUS: NONE
WATER: NONE
ESHWT: NONE IMPERVIOUS: 48" WATER: NONE ESHWT: 20" 10YR3/2 BOTTOM OF HOLE FINE SANDY LOAM, GRANULAR, FRIABLE. LEDGE LEDGE FINE SANDY LOAM, GRANULAR, FRIABLE. REDOX 15%@20" 2.5YR5/3 SAND, GRAINULAR, FRIABLE, REDOX 15% 2.5Y4/4 SAND, GRANULAR, FRIABLE 10YR4/6 SAND, GRAINULAR, FRIABLE, REDOX 15% 2.5Y5/4 SAND, GRANULAR, FRIABLE REDOX 15%, 2.5Y5/4 BOTTOM OF HOLE BOTTOM OF HOLE BOTTOM OF HOLE NOTES: TEST PITS PERFORMED BY LUKE HURLEY ON 7/15/24 TEST PIT LOGS NOT TO SCALE



	ΒY	유	유	ar Or				
REVISIONS	COMMENTS	PROJECT SUBMITTAL	REVISED PER CITY COMMENTS	REVISED PER CITY COMMENTS				
	DATE	12/20/24	2/3/25	5/9/25				
	No.	-	2	3				

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

**GORDON SERVICES** KEENE

**DETAILS** 

23-0201-1 MAY 9, 2025 неет**86 of 160** 23 OF 23



## GORDON SERVICES – KEENE PIT ACID MINE DRAINAGE DETECTION INITIAL RESPONSE ACTION PLAN



57 Route 9, Keene, New Hampshire City of Keene Tax Map 215 Block 7 Town of Sullivan Tax Map 583 Lot 46 & 46-1

## **Prepared For:**

Gordon Services 250 North Street Jaffrey, New Hampshire 03452

## **Prepared By:**

FRONTIER GEOSERVICES
127 OLD WARNER ROAD
BRADFORD, NEW HAMPSHIRE 03221

Joel Banaszak, P.G.

(603) 748-3715 Jbanaszak@frontiergeoservices.com

April 6, 2025 Frontier Project No. 2024012



## 1.0 INTRODUCTION

Frontier Geoservices, LLC. (Frontier) has completed an acid mine drainage potential investigation at the property located at 57 Route 9, in the City of Keene, Cheshire County, New Hampshire The parcels comprising the Site are identified by the City of Keene's Assessor's office on Tax Map 215 as Block 7 (102.7-acres) and the Town of Sullivan, New Hampshire, Assessor's office on Tax Map 5 Lot 46 (172-acres) and 46-1 (25.82-acres.) The Site is currently owned by G2 Holdings, LLC. of 250 North Street, Jaffrey, New Hampshire. Please refer to **Figure 1** for a **Site Location Map**.

Currently, the Site operates as a gravel and earth removal operation for Gordon Services. The current operations are permitted to only encompass one area, Period 1, of the Site. Gordon Services wishes to expand their current operations to include additional excavation in Period 8 and new excavations in Periods 1 - 7. Please refer to **Figure 2** for a **Site Plan**.

Applicants proposing Earth Excavation are required to provide the information requested in The City of Keene's Article 25 Earth Excavation Regulation. This report provides the information requested in the City of Keene's Article 25.3.6 Toxic or Acid Forming Materials. Investigation activities included the sampling of materials from eight (8) bedrock monitoring wells; BRW-1 through BRW-8. Results from the investigation are included in the 2024 Acid Mine Drainage Potential Report, drafted by Frontier.

Results from the investigation and analysis identified the potential for acid mine drainage at the Site and as such a surface and groundwater monitoring program is proposed to detect any potential acid mine drainage from the mining area. Additionally, pre-detection mitigation efforts are also proposed.

This document provides initial response actions which will be implemented if there are detections of acid mine drainage in surface and/or groundwater. It should be noted that this document is not intended to provide a complete list of remedial options which may implemented beyond the initial response actions.

## 2.0 ACID MINE DRAINAGE DEFINITION

Acid mine drainage is defined by highly acidic, low pH water (<6 SU) that is rich in dissolved heavy metals including arsenic, copper, iron, manganese, nickel and lead. The combination of these characteristics will be used to identify acid mine drainage as prescribed in the proposed water quality monitoring program described below. Individual exceedances of standards will not solely be used to identify the presence of acid mine drainage, but rather consistent relationships between field parameters and analytical results which are indicative of acid mine drainage, i.e. low pH water with high concentrations of dissolved heavy metals.

## 3.0 PROPOSED GROUNDWATER MONITORING PROGRAM

Due to the potential for water at the Site to be affected by acid mine drainage it is proposed that wells SRL-10, SRL-12, BRW-7 and BRW-8 be monitored on a bi-annual basis in the months of April and October. Additionally, samples will be collected from surface water infiltration features constructed throughout the project. All surface water being conveyed from the proposed excavation is to be directed into a surface water infiltration basin. The construction and placement of surface water infiltration features will be iterative based on project progression. Currently there is one surface water infiltration feature located in the western area of Period 8. Infiltration basins are to be lined with 1-foot of 2-inch minus, crushed, limestone gravel as a precautionary measure to neutralize any potential

1

acid mine drainage. As new infiltration features are constructed at the Site they will be added to the sampling program.

Field parameters including pH, specific conductance, oxidation reduction potential, dissolved oxygen and turbidity and laboratory analysis of dissolved and total metals including arsenic, copper, iron, manganese, nickel and lead will be performed at each sampling location. Baseline, pre-excavation monitoring will consist of the collection of two (2) rounds of samples collected a minimum of 14 calendar days apart. Results will be reviewed in comparison to the New Hampshire Department of Environmental Services (NHDES) Ambient Groundwater Quality Standards (AGQS). All results will be forwarded to the City of Keene Community Development Department within 45 days of sample collection.

Please refer to Figure 2 for a Proposed Water Quality Monitoring Location Map.

## 4.0 APPICABLE REGULATORY STANDARDS

The water quality monitoring program consists of both surface water monitoring and groundwater monitoring. Applicable standards for surface water monitoring were established from the New Hampshire Department of Environmental Services (NHDES) Env-Wq 1700 Surface Water Quality Regulations.

Analyte	Standard
Specific Conductance	No Standard
Oxidation Reduction Potential	No Standard
Dissolved Oxygen	75%/ 5mg/L
Turbidity	10 NTU (beyond naturally occurring conditions)
рН	6.0 SU
Arsenic	150 μg/L, (a,b)
Copper	2.3 μg/L (b,c)
Iron	1,000 μg/L
Manganese	No Standard
Nickel	13.3 μg/L (a,c)
Lead	0.41 µg/L (a,c)

- (a) The letter "a" shall indicate that criteria for these metals are expressed as a function of the water effect ratio (WER), and that because the values displayed in Env Wq 1700, Table 1703-1 correspond to a WER of 1.0, metals Adopted Rules 2-25-25 18 18 criteria for different WERs shall be determined using the procedures described in the EPA publication "Interim Guidance on Determination and Use of Water-Effect Ratios for Metals", EPA-823-B-94-001, dated February 1994.
- (b) The letter "b" shall indicate that the values presented for aquatic life protection are dissolved metals and for hardness-dependent metals are based on a hardness of 20 mg/L. To convert dissolved to total recoverable metal, the equations and tables in Env-Wq 1703.23 shall be used. To calculate dissolved or total recoverable freshwater criteria for hardness-dependent metals for hardness values other than 20 mg/l, the equations and tables shown in Env-Wq 1703.23 and Env-Wq 1703.24 shall be used.

(c) The letter "c" shall indicate that the freshwater aquatic criteria for these metals are expressed as a function of the total hardness, as mg/L CaCO3 of the surface water, and that because the values displayed in Table 1703-1 correspond to a total hardness of 20 mg/L the aquatic life criteria for other hardness values expressed as calcium carbonate shall be calculated using the equations and tables in Env-Wq 1703.23 and Env-Wq 1703.24.

Applicable standards for groundwater monitoring were established from the NHDES Env-Or 600 Contaminated Site Management, Table 600-1 Ambient Groundwater Quality Standards. It should be noted that the applicable standard for heavy metals will be applied to the dissolved heavy metal concentration in groundwater as dissolved concentrations are a better indicator of bioavailability.

Some heavy metals may naturally occur at concentrations that exceed the applicable standard, as such, baseline sampling will be used to determine the "background" concentrations of metals which exceed the applicable standard but are interpreted to be naturally occurring. In these instances, the determination of the contribution of acid mine drainage to the concentration of heavy metals will be established by the observance of an increasing trend in the concentration of the subject heavy metal.

Analyte	Standard
Specific Conductance	No Standard
Oxidation Reduction Potential	No Standard
Dissolved Oxygen	75%/ 5 mg/L
Turbidity	10 NTU (beyond naturally occurring conditions)
pН	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

## 5.0 PROPOSED INITIAL RESPONSE ACTION – ACID MINE DRAINAGE DETECTION

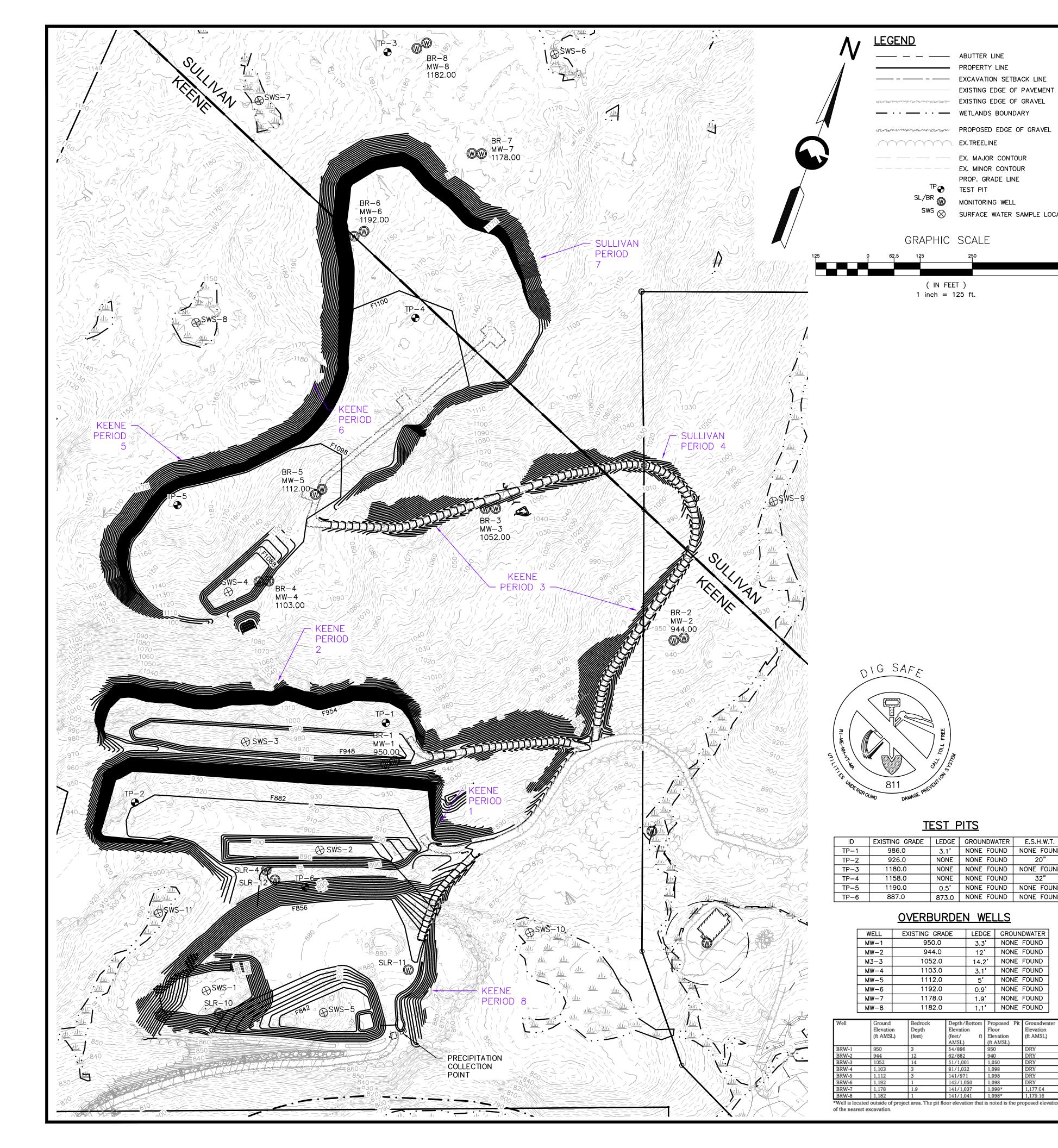
As previously mentioned, acid mine drainage is defined by highly acidic, low pH water (<6 SU) that is rich in dissolved heavy metals including arsenic, copper, iron, manganese, nickel and lead. The combination of these characteristics will be used to identify acid mine drainage as prescribed in the proposed water quality monitoring program described below. Individual exceedances of standards will not solely be used to identify the presence of acid mine drainage, but rather consistent relationships between field parameters and analytical results which are indicative of acid mine drainage, i.e. low pH water with high concentrations of dissolved heavy metals.

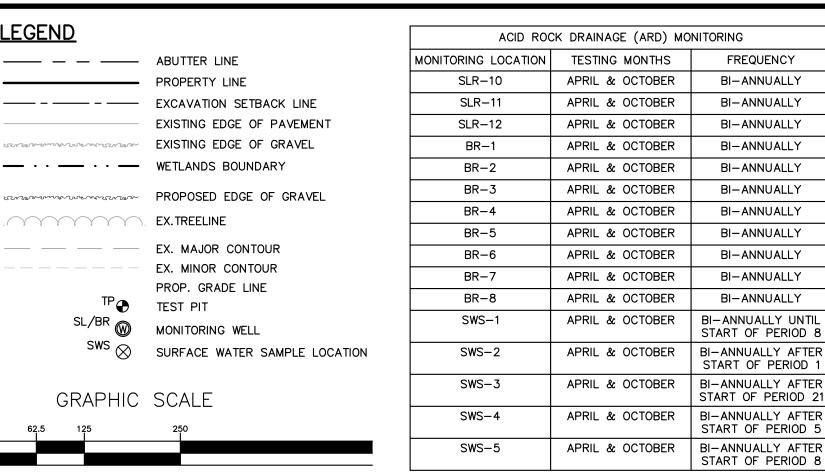
If a surface and/or groundwater sampling location presents results that are indicative of the formation of acid mine drainage NHDES And the City of Keene will be notified immediately. Furthermore, the following immediate initial response actions will be implemented.

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 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 adjected 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. If results indicate acid mine drainage may have traveled further downgradient additional monitoring wells may be required.

The proposed initial response actions are not intended to present a complete list of remedial options and mitigation. Additional remedial methods may include the impoundment and chemical neutralization of any surface water being derived from the source area, construction of remedial wetlands, and pumping and treatment of impacted groundwater. These remedial methods, and/or others, may be implemented if the conditions of the initial acid mine drainage dictates.





( IN FEET 1 inch = 125 ft.

TEST PITS

1103.0

1112.0

1192.0

1182.0

3.1' NONE FOUND NONE FOUND

NONE NONE FOUND NONE FOUND

0.5' NONE FOUND NONE FOUND

3.3' NONE FOUND

12' NONE FOUND

14.2' NONE FOUND

3.1' NONE FOUND

5' NONE FOUND

0.9' NONE FOUND

1.9' NONE FOUND

(ft AMSL)

1.1' NONE FOUND

873.0 NONE FOUND NONE FOUND

NONE NONE FOUND 20"

NONE NONE FOUND

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			

## ON-SITE WATER QUALITY MONITORING NOTES (ARD MONITORING)

I. 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

## OFF-SITE WATER QUALITY MONITORING NOTES

- . LAND OWNERS WITHIN 1 MILE OF THE EXCAVATION SITE WILL BE OFFERED GROUNDWATER QUALITY MONITORING. NOTIFICATIONS WILL BE MADE TO LANDOWNERS WITH THE OPTION TO ALLOW OR DECLINE MONITORING.
- TWO ROUNDS OF SAMPLING WILL OCCUR A MINIMUM OF 14 CALENDAR DAYS APART
- 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.
- 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. SAMPLES WILL BE ANALYZED FOR VOLATILE ORGANIC COMPOUNDS AND NITRATE.
- RESULTS WILL BE SENT TO THE LAND OWNER, THE CITY OF KEENE, & TOWN OF SULLIVAN. ADVERSE IMPACTS
- DRINKING WATER RESULTS WILL BE COMPARED TO THE NHDES AMBIENT GROUNDWATER QUALITY STANDARDS (AGQS).
- . IF ADVERSE IMPACTS ARE NOTED, THE APPLICANT WILL IMMEDIATELY BE NOTIFIED TO CEASE BEDROCK EXCAVATION. 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
- (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
- (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 (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
  - STORAGE OF REGULATED SUBSTANCES ON AN IMPERVIOUS SURFACE.
  - SECURE STORAGE AREAS AGAINST UNAUTHORIZED ENTRY.
  - LABEL REGULATED CONTAINERS CLEARLY AND VISIBLY. INSPECT STORAGE AREAS WEEKLY.
  - COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS.
  - 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.
  - 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:
- EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED. PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS.
- HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS. USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES. 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		GROUNDWATER ELEV.
SLR-4 SLR-10 SLR-11 SLR-12	888.0 884.0 871.5.0 885.0*	880.0 855.0 855.0 885.0	873.0 NONE TO 829.0 NONE TO 795.5 877.5	NONE FOUND 42.9 NONE TO 45.2 1.5	873.0 828.0 817.8 850.5	NONE FOUND 841.1 826.3 883.5**

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



	ΒY	ar	ar					
REVISIONS	COMMENTS	PROJECT SUBMITTAL	REVISED PER CITY COMMENTS					
	DATE	12/20/24	2/3/25					
	No.	-	2					

# **GRANITE ENGINEERING**

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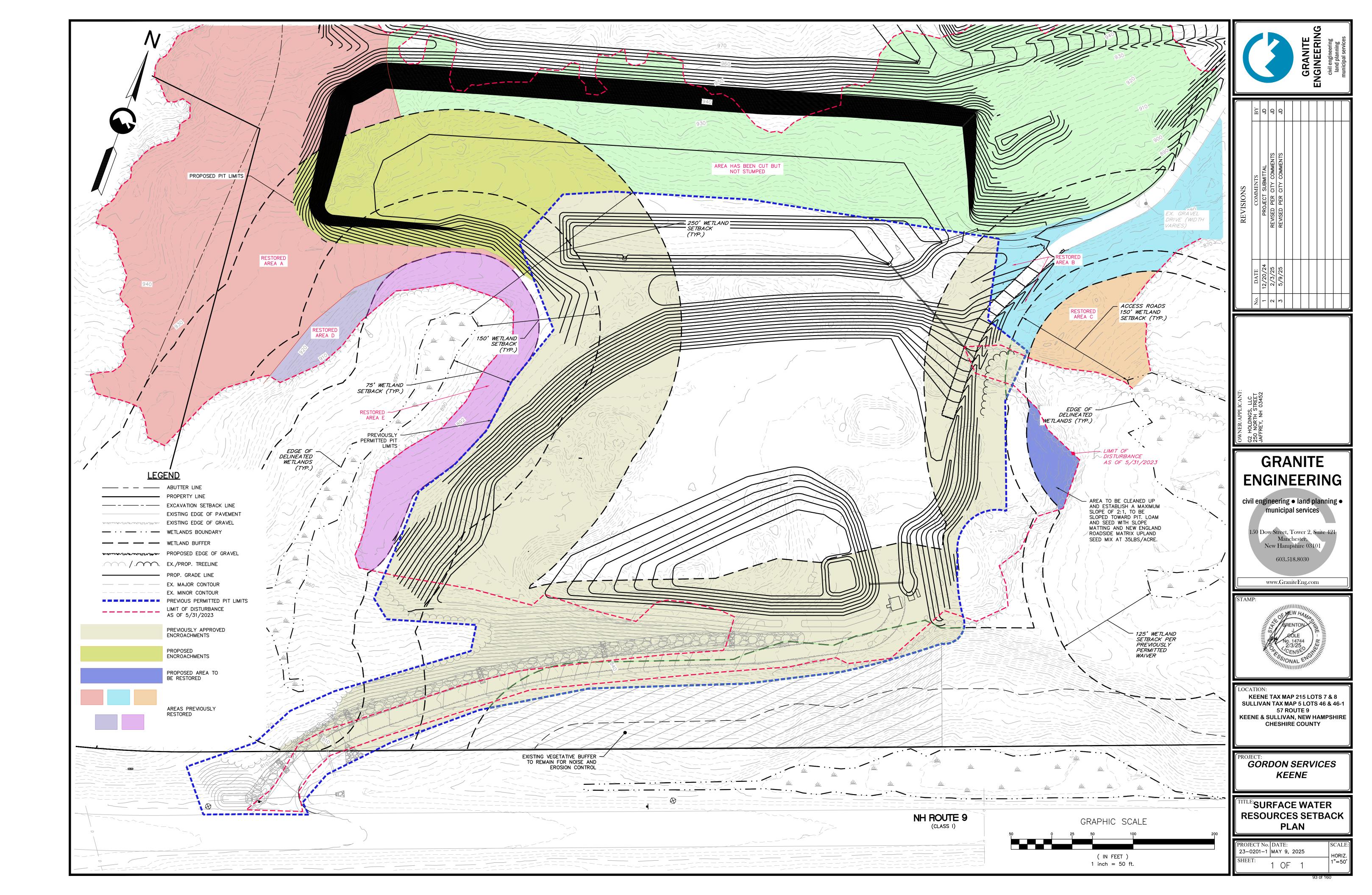
OCATION

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

**GORDON SERVICES** KEENE

**MONITORING PLAN** 

23-0201-1 FEBRURARY 3, 2025



P:\3\2302011\dwg\Production Plans\2302011-SWR WAIVER.dwg, SWR WAIVER, 5/7/2025 5:27:42 PM, justind, DWG To PDF.pc3, ANSI full bleed D (34.00 x 2)

# 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

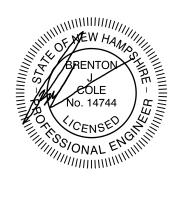
Revised: May 8, 2025

## 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.

The detention basins mentioned above are designed to without 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	2-Year				
Point	Pre	Interim	Post		
Α	1.011	0.795	0.795		
В	5.037	3.902	3.902		

## III. EROSION & SEDIMENTATION CONTROL PROVISIONS

## A. <u>Temporary Erosion Control Measures</u>

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 <u>New Hampshire Stormwater Manual; Volume 3: Erosion and Sediment Temporary Controls During Construction</u> 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. <u>Permanent Erosion Control Measures</u>

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.



## SITE-SPECIFIC SOIL SURVEY REPORT

## For 21 Route 9 Keene

## 1. MAPPING STANDARDS

Site-Specific Soil Mapping Standards for New Hampshire and Vermont. SSSNNE Special Publication No. 3, Version 7.0, July 2021. This map product is within the technical standards of the National Cooperative Soil Survey. It is a special product, intended for the submission to NH DES Alteration of Terrain. It was produced by a professional soil scientist and is not a product of the USDA Natural Resource Conservation Service.

Hydrologic Soil Group was determined using SSSNNE Special Publication No. 5. Scale of soil map:

Approximately 1" equals 100'

Contours:

Intervals of 2 feet

## 2. DATE SOIL MAP PRODUCED

Date(s) of on-site field work: 7/15/24

Date(s) of test pits: 7/15/24

Test pits recorded by: Luke Hurley, CSS #095

## 3. GEOGRAPHIC LOCATION AND SIZE OF SITE

City or town where soil mapping was conducted: Keene/Sulivan

Location: Gordon Gravel Pit, 21 Route 9, Keene, Map 215, Lots7 & 8/Sullivan Map 5,

Lots 46 & 46-1

Size of area: approximately 25 acres

Was the map for the entire lot? No

The area where the map was created for the proposed area of cut slope as part of the gravel pit expansion to tie into the slopes of the site. Thes mapped area has had some historical logging but is mostly forested with steep rock exposed slopes.

## 4. PURPOSE OF THE SOIL MAP

Was the map prepared to meet the requirement of Alteration of Terrain? No If no, what was the purpose of the map? Town of Keene Who was the map prepared for? Granite Engineering, Inc.

## 5. SOIL IDENTIFICATION LEGEND

SSSM SYM.	SSS MAP NAME	HISS SYM.	HYDROLOGIC SOIL GRP.
168	Sunapee	321	В
61	Tunbridge Lyman Rock Outcrop	224/227	C
92	Lyman	224	D



SLOPE PHASE:

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

Sunapee Sunapee

The Sunapee series consists of very deep, moderately well drained soils formed in loamy meltout till on hills and mountains in glaciated uplands. Estimated saturated hydraulic conductivity is moderately high or high in the mineral solum and moderately high to very high in the substratum. Slope ranges from 0 to 60 percent. These soils have an ESHWT between 15-40 inches and have no significant ledge within the profile of 40". Thes soils are found in the lower

area adjacent to the current access road in an isolated area within the mapped portion, but extend outside of it and are also found in the higher upper flat areas of the mapped portion.

321

**Typical Profile** 

Refusal None

1ypical Frome
0-12" Fill Log Landing
12-16" 10YR3/2, FSL, GR, FR
16-36" 2.5Y5/3, FSL, GR, FR Redox 15% @ 20"
36-70" 2.5Y5/4, S, GR, FR Redox 15%
ESHWT 20"
Observed Water None

Tunbridge Lyman Rock Outcrop 224/227 C

This series is the dominant series in the mapped area. These soils overlap in such a frequency that they can not be separated out into individual series. The soils are located along the steep exposed rock slopes, as well as some of the upper flat areas. Some portions of this mapped unit have limited soil on top to a depth of approximately 20 inches.

The Tunbridge series consists of moderately deep, well drained soils on glaciated uplands. They formed in loamy supraglacial till. Saturated hydraulic conductivity is moderately high or high throughout the mineral soil. Slope ranges from 0 to 80 percent. These soils have no ESHWT within 40 inches and have ledge between 20-40 inches.

The Lyman series consists of shallow, somewhat excessively drained soils on glaciated uplands. They formed in loamy supraglacial till. Estimated saturated hydraulic conductivity is moderately high or high throughout the mineral soil. Slope ranges from 0 to 80 percent. This series has shallow to exposed ledge less than 20 inches from the surface.

92 Lyman 224 D

The Lyman series consists of shallow, somewhat excessively drained soils on glaciated uplands. They formed in loamy supraglacial till. Estimated saturated hydraulic conductivity is moderately high or high throughout the mineral soil. Slope ranges from 0 to 80 percent.

6. RESPONSIBLE SOIL SCIENTIST

Name: Luke Hurley

Certified Soil Scientist Number: CSS #095



## 7. OTHER DISTINGUISHING FEATURES OF SITE

Is the site in a natural condition? The current mapping portion, yes.

## 8. Inclusions

No Inclusions were mapped.

Test Pits:

TP1

0-6" 10YR3/2, FSL, GR, FR 6-14" 10YR3/2, FSL, GR, FR

**ESHWT** None

Observed Water None

Refusal Ledge @14"

## TP2

0-12" Fill, Old Log Landing 12-16" 10YR3/2, FSL, GR, FR 16-36" 2.5Y5/3, FSL, GR, FR Redox 15% @ 20" 36-70" 2.5Y5/4, S, GR, FR Redox 15% ESHWT 20" Observed Water None Refusal None

## TP3

0-6" 10YR3/2, FSL, GR, FR 6-14" 10YR4/4, FSL, GR, FR 14-36" 2.5Y5/4, S, GR, FR ESHWT None Observed Water None Refusal 36"

## TP4

0-8" 10YR3/2, FSL, GR, FR 8-18" 10YR4/3, FSL, GR, FR 18-32" 7.5YR5/4, S, GR, FR 32-44" 2.5Y4/4, S, GR, FR Redox 15% 44-70" 2.5Y5/4, S, GR, FR Redox 15% ESHWT 32" Observed Water None Refusal 70"

TP5

Ledge @ 6"





# Stormwater Management Operation and Maintenance (O&M) Manual

for:

## GORDON SERVICES - KEENE

## Located at:

Keene: Map 215; Lots 7 & 8 Sullivan: Map 5; Lots 46 & 46-1 57 Route 9 Keene & Sullivan, New Hampshire

## 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 | www.GraniteEng.com

## Stormwater Management Operation and Maintenance (O&M) Manual

## I. Compliance with Stormwater Facility Maintenance Requirements

The owner of the subject property is responsible for ensuring that stormwater facilities installed on the property are properly maintained and that they function as designed. In some cases, this maintenance responsibility may be assigned to others through special agreements. Any transfer of responsibility for inspection and maintenance activities or transfer of ownership shall be documented in writing. The contract documents will require the contractor to designate a person responsible for maintenance of the sedimentation control features during construction. Long-term operation and maintenance for the stormwater management facilities are presented below.

## II. Inspection & Maintenance - Annual Reporting

Requirements for the inspection and maintenance of stormwater facilities, as well as reporting requirements, are included in this Stormwater Management Operation and Maintenance (O&M) Manual.

Verification that the Stormwater facilities have been properly inspected and maintained; copies of the annual report should be documented on site for future reporting upon request.

Copies of the Inspection and Maintenance forms for each of the stormwater facilities are located in Appendix B and C. A standard annual reporting form is provided in Appendix A.

## III. Preventative Measures to Reduce Maintenance Costs

The most effective way to maintain your water quality facility is to prevent the pollutants from entering the facility in the first place. Common pollutants include sediment, trash & debris, chemicals, dog wastes, runoff from stored materials, illicit discharges into the storm drainage system and many others. A thoughtful maintenance program will include measures to address these potential contaminants and will save money and time in the long run. Key points to consider in your maintenance program include:

- Educate property owners/residents to be aware of how their actions affect water quality, and how they can help reduce maintenance costs
- Keep properties, streets and gutters, and parking lots free of trash, debris, and lawn clippings
- Ensure the proper disposal of hazardous wastes and chemicals
- Plan lawn care to minimize the use of chemicals and pesticides
- Sweep paved surfaces and put the sweepings back on the lawn
- Be aware of automobiles leaking fluids. Use absorbents such as cat litter to soak up drippings – dispose of properly
- Re-vegetate disturbed and bare areas to maintain vegetative stabilization.
- Clean out the upstream components of the storm drainage system, including inlets, storm sewers, and outfalls
- Do not store materials outdoors (including landscaping materials) unless properly protected from runoff

## IV. Access

All stormwater management facilities located on the site have a designated access location. Refer to the Stormwater Plan located in Appendix E for access locations.

## V. Safety

Keep safety considerations at the forefront of inspection procedures at all times. Likely hazards should be anticipated and avoided. Never enter confined space (outlet structure, manhole, etc) without proper training or equipment. A confined space should never be entered without at least one additional person present.

If a toxic or flammable substance is discovered, leave the immediate area and contact the local authority at 911.

Potentially dangerous (e.g., fuel, chemicals, hazardous materials) substances found in the areas must be referred to the local authority immediately for response. The emergency contact number is 911.

Vertical drops may be encountered in areas located within and around the facility. Avoid walking on top of retaining walls or other structures that have a significant vertical drop. If a vertical drop is identified within the pond that is greater than 48" in height, make the appropriate note/comment on the maintenance inspection form.

If any hazard is found within the facility area that poses an immediate threat to public safety, contact the local authority immediately.

## VI. Field Inspection Equipment

It is imperative that the appropriate equipment is taken to the field with the inspector(s). This is to ensure the safety of the inspector and allow the inspections to be performed as efficiently as possible. Below is a list of the equipment that may be necessary to perform the inspections of all Stormwater Management Facilities:

- Protective clothing and boots
- Safety equipment (vest, hard hat, confined space entry equipment
- Communication equipment
- Operation and Maintenance Manual for the site including stormwater management facility location maps
- Clipboard
- Stormwater Facility Maintenance Inspection Forms (See Appendix B)
- Manhole Lid Remover
- Shovel
- Camera or phone camera

Some of the items identified above need not be carried by the inspector (manhole lid remover, shovel, and confined space entry equipment). However, this equipment should be available in the vehicle driven to the site.

## VII. Inspecting Stormwater Management Facilities

The quality of stormwater relies heavily on the proper operation and maintenance of permanent best management practices. Stormwater management facilities must be periodically inspected to ensure that they function as designed. The inspection will determine the appropriate maintenance that is required for the facility.

## A. Inspection Procedures

All stormwater management facilities are required to be inspected by a qualified individual. Inspections should follow the inspection guidance found in Appendix B of this manual.

## B. Inspection Report

The person(s) conducting the inspection activities shall complete the appropriate inspection report for the specific facility. Inspection reports are located in Appendix B.

A record of inspection and maintenance activities shall be recorded on the Inspection and Maintenance Lot presented below. Photographs of each practice that is subject to the I&M requirement should be taken at each inspection of that practice. Records of Inspection forms, photos and Inspection Maintenance Logs shall be made available to DES and the Town of Bethlehem upon request.

## VIII. Maintenance Requirements

Stormwater management facilities must be properly maintained to ensure that they operate correctly and provide the water quality treatment for which they were designed. Routine maintenance performed on a frequently scheduled basis can help avoid more costly rehabilitative maintenance that results when facilities are not adequately maintained.

The Long-Term Inspection and Maintenance Log provides a record of maintenance activities. Maintenance Logs for each facility type are provided in Appendix C.

## Infiltration Systems

- Systems should be inspected at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24 hour period, with maintenance or rehabilitation conducted as warranted by such inspection.
- Pretreatment measures should be inspected at least twice annually, and cleaned of accumulated sediment as warranted by inspection, but no less than once annually.

- Trash and debris should be removed at each inspection.
- Remove accumulated sediment based on inspection.
- Periodically mow the embankments and remove woody vegetation.
- Inspect and repair embankments and spillways based on inspection.
- At least once annually, system should be inspected for drawdown time. If bioretention system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore filtration function, including but not limited to removal of accumulated sediments or reconstruction of filter.

### Sedimentation Basins

- The bottoms, interior and exterior side slopes, and crests of earthen detention basins should be mowed, and the vegetation maintained in healthy conditions, as appropriate to the function of the facility and type of vegetation.
- Vegetated embankments that serve as "berms" or "dams" that impound water should be mowed at least once annually to prevent the establishment of woody vegetation.
- Embankments should be inspected at least annually by a qualified professional for settlements, erosion, seepage, animal burrows, woody vegetation, and other conditions that could degrade the embankment and reduce its stability for impounding water. Immediate corrective action should be implemented if any such conditions are found.
- Inlet and outlet pipes, inlet and outlet structures, energy dissipation structures or practices, and other structural appurtenances should be inspected at least annually by a qualified professional, and corrective action implemented (e.g., maintenance, repairs, or replacement) as indicated by such inspection.
- Trash and debris should be removed from the basin and any inlet or outlet structures whenever observed by inspection.
- Accumulated sediment should be removed when it significantly affects basin capacity.

## Level Spreaders

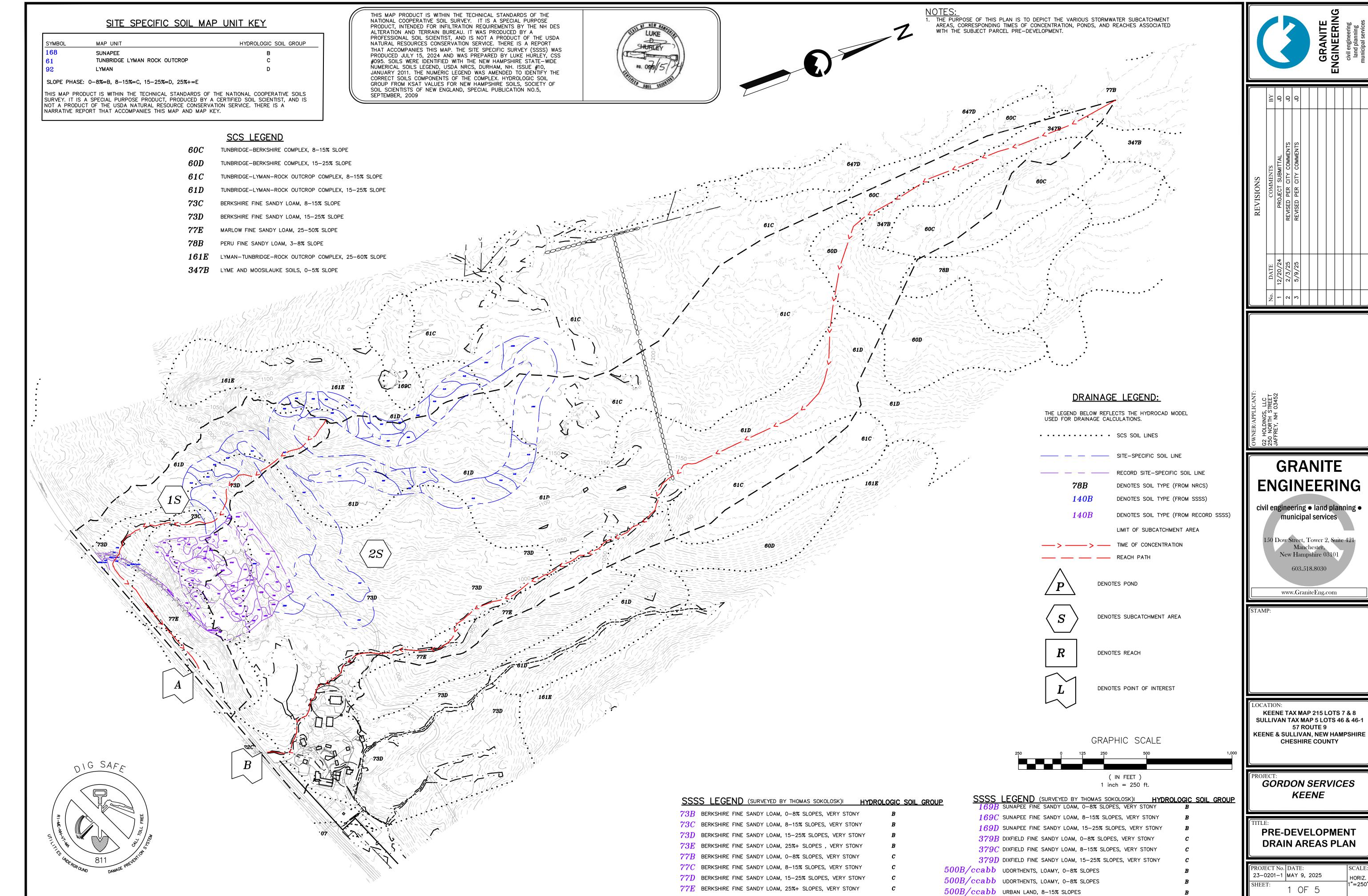
- Inspect at least once annually for accumulation of sediment and debris and for signs of erosion within approach channel, spreader channel, or down-slope of the spreader.
- Remove debris whenever observed during inspection.
- Remove sediment when accumulation exceeds 25% of level spreader channel depth.
- Mow as required by landscaping design. At a minimum, mow annually to control woody vegetation within the spreader.
- Snow should not be stored within or down-slope of the level spreader or its approach channel.
- Repair any erosion and re-grade or replace stone berm material, as warranted by inspection.
- 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 regrading.

## IX. Control of Invasive Species

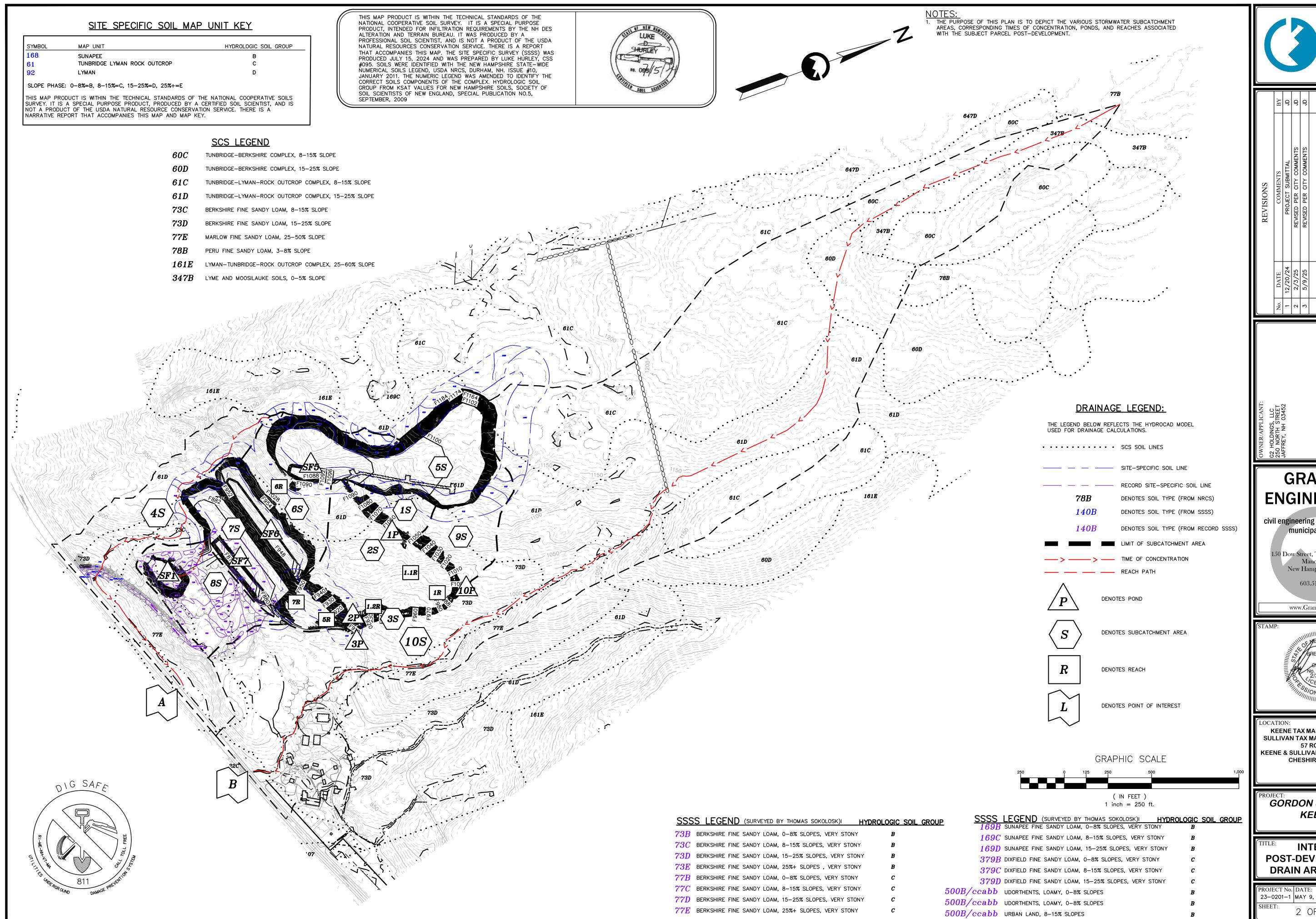
During maintenance activities, check for the presence of invasive plants and remove in a safe manner as described on the following pages. They should be controlled as described in Appendix D.

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants, seeds, packing materials, or fresh produce. Some exotic plants become invasive and cause harm by:

- becoming weedy and overgrown;
- killing established shade trees;
- obstructing pipes and drainage systems;
- forming dense beds in water;
- lowering water levels in lakes, streams, and wetlands;
- · destroying natural communities;
- promoting erosion on stream banks and hillsides; and
- resisting control except by hazardous chemicals.



PRE-DEVELOPMENT DRAIN AREAS PLAN

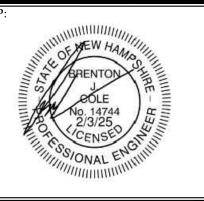


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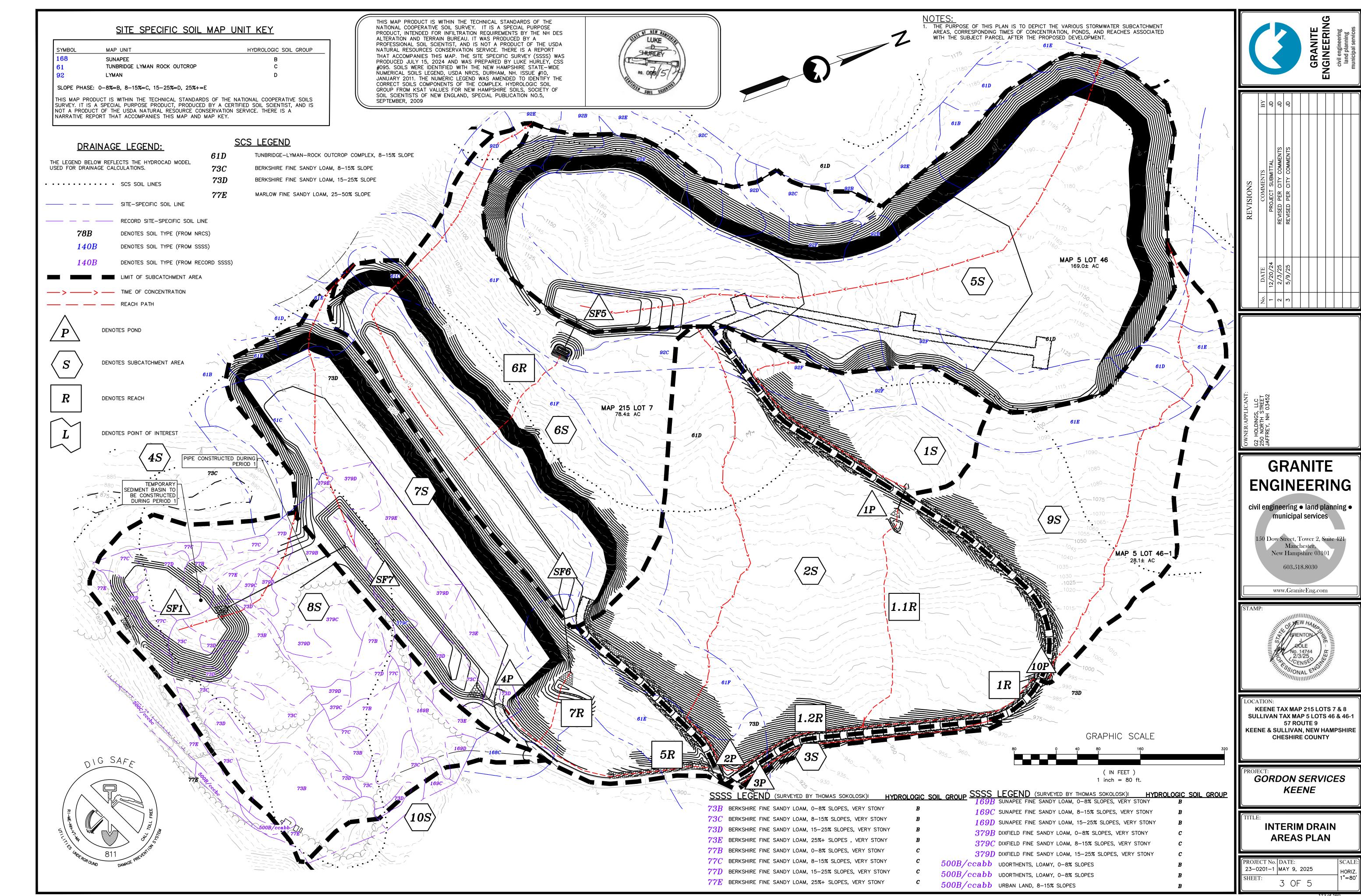


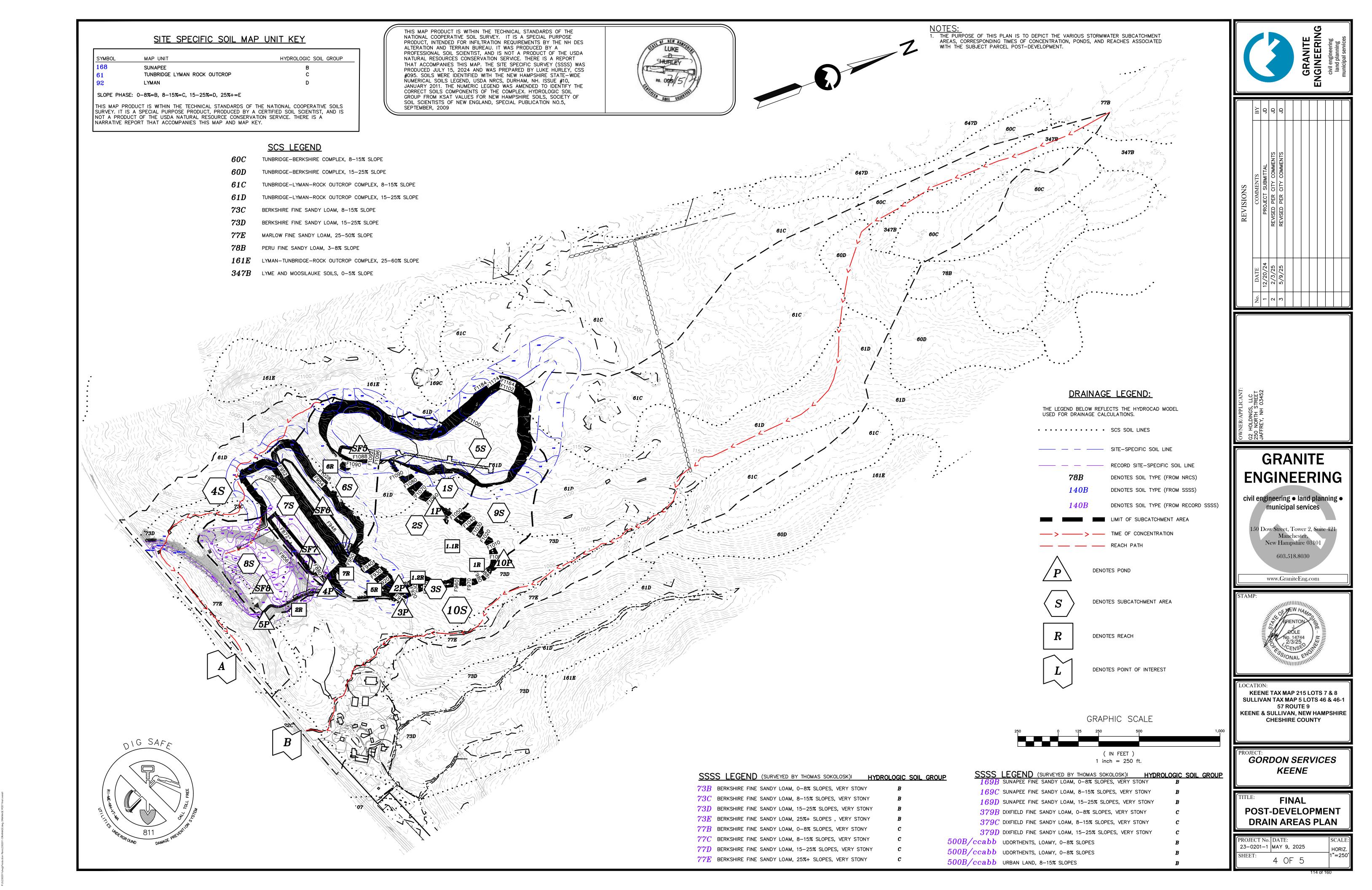
KEENE TAX MAP 215 LOTS 7 & 8 SULLIVAN TAX MAP 5 LOTS 46 & 46-1 57 ROUTE 9 KEENE & SULLIVAN, NEW HAMPSHIRE CHESHIRE COUNTY

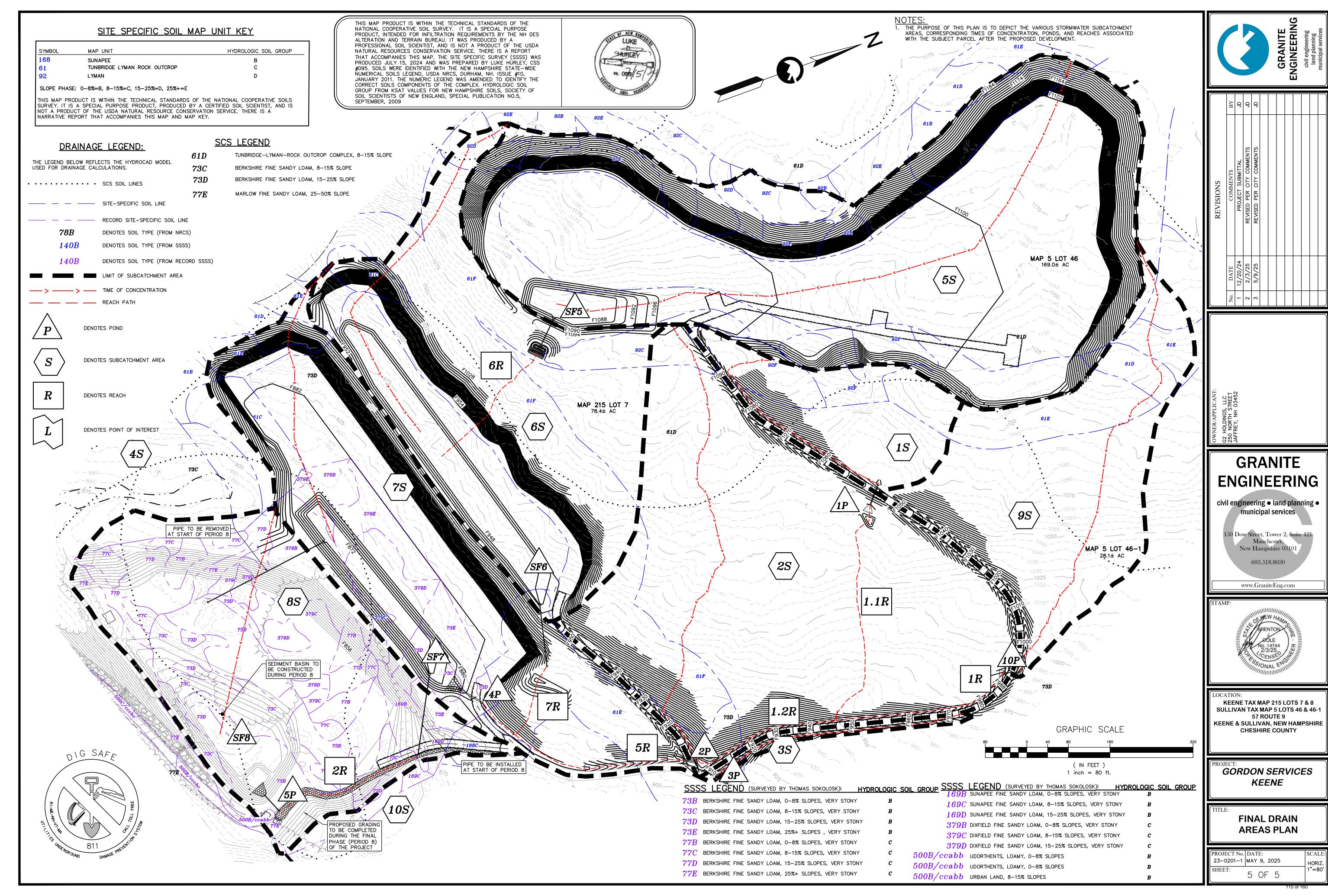
GORDON SERVICES KEENE

INTERIM POST-DEVELOPMENT DRAIN AREAS PLAN

23-0201-1 MAY 9, 2025 2 OF 5







# Stormwater Pollution Prevention Plan (SWPPP)

### For Construction Activities At:

Gordon Services Excavation Site - Keene Route 9 Keene, New Hampshire 03431 (603) 325-8457

## **SWPPP Prepared For:**

Gordon Services Property Management, LLC
250 North Street

Jaffrey, New Hampshire 03452
(603) 325-8457
cody@mygordonservices.com

## **SWPPP Prepared By:**

## **GRANITE ENGINEERING, LLC**

civil engineering • land planning • municipal services
150 Dow Street, Suite 421
Manchester, New Hampshire 03101
Brenton Cole, P.E.
603.518.8030
bcole@graniteeng.com



### **SWPPP Preparation Date:**

01/31/2023

**Estimated Project Dates** 

Project Start Date: 07/20/2023

**Project Completion Date:** 07/20/2028

Stormwater Team Members Who Conduct Inspections Pursuant to CGP Part 4

Name and/or Position and Contact	Training(s) Received	Date Training(s) Completed	If Training is a Non-EPA Training, Confirm that it Satisfies the Minimum Elements of CGP Part 6.3.b
Gordon Services Property Management, LLC Cody Gordon Owner (603) 325-8457 cody@mygordonservices.com		Date:	<ul> <li>Principles and practices of erosion and sediment control and pollution prevention practices at construction sites</li> <li>Proper installation and maintenance of erosion and sediment controls and pollution prevention practices used at construction sites</li> <li>Performance of inspections, including the proper completion of required reports and documentation, consistent with the requirements of Part 4</li> </ul>

# SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING

# 2.1 Project/Site Information

Project Name and Address		
Project/Site Name: Excavation Site – Keer Street/Location: Route 9 City: Keene	ne	
State: New Hampshire		
ZIP Code: 03452		
County or Similar Government Division: C	heshire County	
Project Latitude/Longitude		
Latitude: 42.969521° N	Longitude: 72.226364 ° W	
(decimal degrees)	(decimal degrees)	
Latitude/longitude data source: $oxedsymbol{oxed}$ Map	$\square$ GPS $\square$ Other (please specify):	
Horizontal Reference Datum: NAD 27	7 □ NAD 83 ⊠ WGS 84	
Additional Site Information		
Is your site located on Indian country land cultural significance to an Indian Tribe?	ds, or on a property of religious or Yes	⊠ No
	be associated with the area of Indian country if applicable), or if not in Indian country, prove the property:	ide the
2.2 Discharge Information		
Does your project/site discharge stormwat Separate Storm Sewer System (MS4)?	rer into a Municipal Yes 🖂	No
Are there any waters of the U.S. within 50 for disturbances?	eet of your project's earth $\Box$ Yes $oxtimes$ 1	No

For each point of discharge, provide a point of discharge ID (a unique 3-digit ID, e.g., 001, 002), the name of the first receiving water that receives stormwater directly from the point of discharge and/or from the MS4 that the point of discharge discharges to, and the following receiving water information, if applicable:

Point of Discharge ID	Name of receiving water that receives stormwater discharge:	Is the receiving water impaired (on the CWA 303(d) list)?	If yes, list the pollutants that are causing the impairment:	Has a TMDL been completed for this receiving waterbody?	If yes, list TMDL Name and ID:	Pollutant(s) for which there is a TMDL:	Is this receiving water designated as a Tier 2, Tier 2.5, or Tier 3 water?	If yes, specify which Tier (2, 2.5, or 3)?
001	Unnamed Wetlands	☐ Yes ☒ No		☐ Yes ☒ No			☐ Yes ☒ No	

### 2.3 Nature of the Construction Activities

## **General Description of Project**

This project proposes the expansion of an existing gravel excavation operation.

Business days and hours for the project: M-F 8am-5pm

### Size of Construction Site

Size of Property	85 Acres
Total Area Expected to be Disturbed by Construction Activities	9.75 Acres
Maximum Area Expected to be Disturbed at Any One Time, Including On-site and Off-site Construction Support Areas	9.75 Acres

Type of Construction Site	(check all that apply):
---------------------------	-------------------------

$\square$ Single-Family Residential	$\square$ Multi-Family Residential $\square$	Commercial	$oxed{\boxtimes}$ Industrial
☐ Institutional ☐ Highway	y or Road $\Box$ Utility $\Box$ Other $\_$		
Will you be discharging dewa	tering water from your site?	□ Yes	⊠ No
If yes, will you be discharging of former Federal or State remed	dewatering water from a current	or □ Yes	⊠ No

### **Pollutant-Generating Activities**

List and describe all pollutant-generating activities and indicate for each activity the associated pollutants or pollutant constituents that could be discharged in stormwater from your construction site. Take into account where potential spills and leaks could occur that contribute pollutants to stormwater discharges, and any known hazardous or toxic substances, such as PCBs and asbestos, that will be disturbed during construction.

Pollutant-Generating Activity	Pollutants or Pollutant Constituents
(e.g., paving operations; concrete, paint, and stucco washout and waste disposal; solid waste storage and disposal; and dewatering operations)	(e.g., sediment, fertilizers, pesticides, paints, caulks, sealants, fluorescent light ballasts, contaminated substrates, solvents, fuels)
Construction Site Exit	Sediment transport by tracking into roadway.
Cleared and Graded Areas	Soil erosion is more prominent in these areas, as well as fertilizer and pesticides. Ruts can occur if tracked over and can prevent vegetation establishment from occurring.

Pollutant-Generating Activity	Pollutants or Pollutant Constituents
(e.g., paving operations; concrete, paint, and stucco washout and waste disposal; solid waste storage and disposal; and dewatering operations)	(e.g., sediment, fertilizers, pesticides, paints, caulks, sealants, fluorescent light ballasts, contaminated substrates, solvents, fuels)
Construction Staging Areas	Hydraulic oil, gasoline, antifreeze, soil erosion, fertilizers, and pesticides. Spills can occur while fueling equipment in these areas.

## **Construction Support Activities**

Onsite Material Staging and Stockpiling Area: A staging and stockpiling area of different aggregates will be used onsite. The staging and stockpiling area shall be set up in an organized manner, classified accordingly, and protected from erosion and loss of material. The material can be trucked off site or used on site for construction purposes.

Contact information for construction support activity: Gordon Services Property Management, LLC (603) 325-8457 cody@mygordonservices.com 250 North Street, Jaffrey, NH 03452

## 2.4 Sequence and Estimated Dates of Construction Activities

### Phase I

Tro o Clooring		
Tree Clearing		
<ul> <li>Remove existing trees/vegetation up to the proposed limits of clearing shown on the</li> </ul>		
plans		
Estimated Start Date of Construction Activities for this	7/20/2023	
Phase		
Estimated End Date of Construction Activities for this	7/28/2023	
Phase		
Estimated Date(s) of Application of Stabilization	6/20/2028	
Measures for Areas of the Site Required to be		
Stabilized		
Estimated Date(s) when Stormwater Controls will be	7/20/2028	
Removed		

### Phase II

Prior to Site Grading Activities

- Install SiltSoxx at locations designated on the plans
- Install storm drain inlet protection, construct rip rap outlet protection
- Construct stabilized construction exit
- Install erosion control blankets where slope exceeds 3:1
- Furnish temporary Dandy Bags at specified locations
- Install temporary stone check dams if necessary

Estimated Start Date of Construction Activities for this	7/28/2023
Phase	
Estimated End Date of Construction Activities for this	8/11/2023
Phase	
Estimated Date(s) of Application of Stabilization	6/20/2028
Measures for Areas of the Site Required to be	
Stabilized	
Estimated Date(s) when Stormwater Controls will be	7/20/2028
Removed	

### Phase III

### Earthwork

- Remove existing infrastructure accordingly.
- Stake limits of clearing and identify areas not to be disturbed.
- Identify areas for staging & stockpiling
- Install temporary erosion control measures around stockpiles
- Begin earthmoving operations until subgrade is achieved
- Install drainage systems and other utilities from low to high
- Complete backfill operations, place gravel, and crushed gravel.
- Install binder course of payement

maran sinasi sesise en parennem	
Estimated Start Date of Construction Activities for this	8/18/2023
Phase	
Estimated End Date of Construction Activities for this	6/13/2028
Phase	
Estimated Date(s) of Application of Stabilization	6/20/2028
Measures for Areas of the Site Required to be Stabilized	
Estimated Date(s) when Stormwater Controls will be	7/20/2028
Removed	

## Phase IV

Stabilization & Landscaping

- Install wearing course of pavement
- Remove temporary BMPs and stabilize any areas disturbed by their removal
- Seeding & Landscaping
- Monitor areas of stabilization

Estimated Start Date of Construction Activities for this Phase	6/20/2028
Estimated End Date of Construction Activities for this Phase	7/20/2028
Estimated Date(s) of Application of Stabilization Measures for Areas of the Site Required to be Stabilized	6/20/2028
Estimated Date(s) when Stormwater Controls will be Removed	7/20/2028

# 2.5 Authorized Non-Stormwater Discharges

# List of Authorized Non-Stormwater Discharges Present at the Site

Authorized Non-Stormwater Discharge	Will or May Occur at Your Site?
Discharges from emergency fire-fighting activities	☐ Yes ⊠ No
Fire hydrant flushings	☐ Yes ⊠ No
Landscape irrigation	⊠ Yes □ No
Water used to wash vehicles and equipment	
Water used to control dust	⊠ Yes □ No
Potable water including uncontaminated water line flushings	☐ Yes ⊠ No
External building washdown (soaps/solvents are not used and external surfaces do not contain hazardous substances)	☐ Yes ⊠ No
Pavement wash waters	☐ Yes ☒ No
Uncontaminated air conditioning or compressor condensate	☐ Yes ☒ No
Uncontaminated, non-turbid discharges of ground water or spring water	☐ Yes ⊠ No
Foundation or footing drains	☐ Yes ⊠ No
Uncontaminated construction dewatering water	☐ Yes ⊠ No

# 2.6 Site Maps

Site maps in accordance with Part 7.2.4 of the CGP can be found in Appendix A.

### SECTION 3: DOCUMENTATION OF COMPLIANCE WITH OTHER FEDERAL REQUIREMENTS

### 3.1 Endangered Species Protection

## **Eligibility Criterion**

Following the process outlined in Appendix D, under which criterion are you eligible for coverage under this permit?

- Criterion C: Discharges not likely to result in any short- or long-term adverse effects to ESA-listed species and/or designated critical habitat, ESA-listed species and/or designated critical habitat(s) under the jurisdiction of the USFWS and/or NMFS are likely to occur in or near your site's "action area," and you certify to EPA that your site's discharges and discharge-related activities are not likely to result in any short- or longterm adverse effects to ESA-listed threatened or endangered species and/or designated critical habitat. This certification may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to result in any short- or long-term adverse effects to ESA-listed species and/or designated critical habitat. To certify your eligibility under this criterion, indicate 1) the ESA-listed species and/or designated habitat located in your "action area" using the process outlined in Appendix D of this permit; 2) the distance between the site and the listed species and/or designated critical habitat in the action area (in miles); and 3) a rationale describing specifically how short- or long-term adverse effects to ESA-listed species will be avoided from the discharges and dischargerelated activities. (Note: You must include a copy of your site map from your SWPPP showing the upland and in-water extent of your "action area" with your NOI.)
  - Check to confirm you have provided documentation in your SWPPP as required by CGP Appendix D.

**Documentation:** Official Species List attached in Appendix K.

## 3.2 Historic Property Screening Process

### Appendix E, Step 1

Do you plan on installing any stormwater controls that require subsurface earth disturbance, including, but not limited to, any of the following stormwater controls at your site? Check all that apply below, and proceed to Appendix E, Step 2.

□ Dike
□ Berm
☐ Catch Basin
⊠ Pond
$\square$ Constructed Site Drainage Feature (e.g., ditch, trench, perimeter drain, swale, etc.)
⊠ Culvert
□ Channel
☐ Other type of ground-disturbing stormwater control:

### Appendix E, Step 2

If you answered yes in Step 1, have prior professional cultural resource surveys or other evaluations determined that historic properties do not exist, or have prior disturbances at the site have precluded the existence of historic properties?  $\square$  YES  $\boxtimes$  NO

- If yes, no further documentation is required for Section 3.2 of the Template and you may provide the prior documentation in your SWPPP.
- If no, proceed to Appendix E, Step 3.

## Appendix E, Step 3

If you answered no in Step 2, have you determined that your installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties?  $\square$  YES  $\boxtimes$  NO

- If yes, provide documentation of the basis for your determination.
- If no, proceed to Appendix E, Step 4.

## Appendix E, Steps 4 and 5

If you answered no in Step 3, did the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Office (THPO), or other Tribal representative (whichever applies) respond to you within 15 calendar days to indicate their views as to the likelihood that historic properties are potentially present on your site and may be impacted by the installation of stormwater controls that require subsurface earth disturbance?  $\boxtimes$  YES  $\square$  NO

at re	equire subsurface earth disturbance? 🖾 YES 🗀 NO
•	If yes, describe the nature of their response:
	$oxed{\boxtimes}$ Written indication that no historic properties will be affected by the installation of stormwater controls.
	Written indication that adverse effects to historic properties from the installation of stormwater controls can be mitigated by agreed upon actions.
	No agreement has been reached regarding measures to mitigate effects to historic properties from the installation of stormwater controls.
	☐ Other·

If no, no further documentation is required for Section 3.2 of the Template.

## 3.3 Safe Drinking Water Act Underground Injection Control Requirements

Do you plan to install any of the following controls? Check all that apply below.

,	, , , , , , , , , , , , , , , , , , , ,
	Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)
	Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow
	Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

### SECTION 4: EROSION AND SEDIMENT CONTROLS AND DEWATERING PRACTICES

<u>Good Grading Practices:</u> In areas where gravel and earth material are being extracted, the method of grading and excavation will be such that the open areas and exposed slopes are draining to contained areas that will not result in stormwater discharge.

<u>Vegetation:</u> Areas and slopes are to be seeded where it is known that no further extraction is expected.

<u>Gravel Access Drive:</u> Gravel access drive to be maintained with a stable, non-erosive surface that is graded to ensure water will flow to vegetated areas.

<u>Dust Control:</u> Dust control of the excavated area shall be utilized on an as-needed basis. When temporary dust control measures are used, repetitive treatment should be applied as needed to accomplish control.

<u>Sediment Basin:</u> All onsite stormwater runoff will be directed to an onsite sediment basin. Sediment basin shall be cleaned out on a periodic basis.

<u>SiltSoxx:</u> Perimeter SiltSoxx shall be installed as illustrated on the plan. SiltSoxx to be inspected, cleaned, and repaired to ensure proper function.

<u>Perimeter Mulch Berm:</u> In areas where disturbance is located within 50 feet of adjacent wetlands, perimeter mulch berm in addition to SiltSoxx will be installed. Periodic inspection of the mulch berm shall be conducted. Accumulated silt and any evidence of washout shall be immediately fixed.

<u>Construction Exits:</u> Construction exits shall be installed in accordance with project details. Exits shall be inspected and stone surface replaced or top dressed with additional stone as conditions demand.

<u>Soil Stockpile Practices:</u> Soil stockpile practices include measures to locate, manage, and protect stockpiled earth materials, to reduce or eliminate wind and water erosion, and prevent resulting air and water pollution from displaced sediment. Stockpile practices apply to topsoil, excavated materials, borrow materials imported to the site, and construction aggregates that are stockpiled on the site. Inspect all soil stockpiles immediately after storm events and at the frequencies specified in the project erosion and sediment control plan and in applicable permits. At a minimum, inspect weekly during wet weather periods to verify that erosion and sediment control measures are in place and functioning properly. Repair and/or replace perimeter controls and stockpile coverings as needed to keep them functioning properly

<u>Erosion Control Blankets:</u> All slopes 3:1 or steeper shall be lined with erosion control blankets as specified on the plans. All blanket and mats should be inspected weekly during the construction period, and after any rainfall event exceeding ½ inch in a 24-hour period. Any failure should be repaired immediately. If washout of the slope, displacement of the mat, or damage to the mat occurs, the affected slope shall be repaired and reseeded, and the affected area of mat shall be re-installed or replaced.

<u>Permanent Vegetation:</u> Permanent vegetative cover should be established on disturbed areas where permanent, long-lived vegetative cover is needed to stabilize the soil, to reduce damages from sediment and runoff, and to enhance the environment. Runoff and sheet erosion caused by splash erosion (raindrop impact on bare soil) is the source of most fine particles in sediment. To reduce the sediment load in runoff, the soil surface itself should be protected. The

most effective and economical means of controlling sheet and rill erosion is to establish a vegetative cover. Permanent seeded areas should be inspected at least monthly during the course of construction. Seeded areas should be mowed as required to maintain a healthy stand of vegetation, with mowing height and frequency dependent on type of grass cover. Based on inspection, areas should be reseeded to achieve full stabilization of exposed soils. At a minimum, 85% of the soil surface should be covered by vegetation. If any evidence of erosion or sedimentation is apparent, repairs should be made and areas should be reseeded, with other temporary measures (e.g., mulch) used to provide erosion protection during the period of vegetation establishment.

Terraced slopes or Benching: The land grading practice of providing terraced slopes or benching consists of shaping disturbed land surfaces to control the length of flow down steep slopes. Intermediate terraces (or benches) are incorporated into slopes that exceed 4:1 gradient. These terraces are then used to convey runoff laterally to a safe discharge (or to a constructed drainage system). The purpose of this practice is to provide for erosion control and vegetative establishment on those areas where the existing land surface is to be reshaped by grading. Grassed slopes should be mowed to grass height and frequency specified by design. Vegetated slopes should be inspected periodically for signs of vegetation loss or damage, with restoration as needed. Terraces and slopes should be inspected periodically for any sign of rill or gully erosion, and if such conditions are noted, the area should be immediately investigated and repaired as needed.

### 4.1 Natural Buffers or Equivalent Sediment Controls

## **Buffer Compliance Alternatives**

Are there any receiving waters within 50 feet of your project's earth disturbances? $\Box$ YES $oxed{\boxtimes}$	NO
Check the compliance alternative that you have chosen:	
$oxed{\boxtimes}$ (i) I will provide and maintain a 50-foot undisturbed natural buffer.	
(ii) I will provide and maintain an undisturbed natural buffer that is less than 50 feet ar supplemented by additional erosion and sediment controls that achieve, in combination, the sediment load reduction equivalent to a 50-foot undisturbed nature buffer.	
(iii) It is infeasible to provide and maintain an undisturbed natural buffer of any size, therefore I will implement erosion and sediment controls that achieve the sediment lo reduction equivalent to a 50-foot undisturbed natural buffer.	ad
$\square$ I qualify for one of the exceptions in Part 2.2.1.b. (If you have checked this box, provide information on the applicable buffer exception that applies, below.)	е

## **Buffer Exceptions**

Which	of the following exceptions to the buffer requirements applies to your site?
$\boxtimes$	There is no discharge of stormwater to waters of the U.S. through the area between the disturbed portions of the site and any waters of the U.S. located within 50 feet of your site
	No natural buffer exists due to preexisting development disturbances (e.g., structures, impervious surfaces) that occurred prior to the initiation of planning for this project.
	For "linear construction sites" (defined in Appendix A), site constraints (e.g., limited right-of-way) make it infeasible to meet any of the CGP Part 2.2.1.a compliance alternatives, provided that, to the extent feasible, you limit disturbances within 50 feet of the receiving water.
	The project qualifies as "small residential lot" construction (defined in Appendix A as "a lot being developed for residential purposes that will disturb less than 1 acre of land, but is part of a larger residential project that will ultimately disturb greater than or equal to 1 acre") (see Appendix F, Part F.3.2).
	☐ For Alternative 1:
	☐ For Alternative 2:
	Buffer disturbances are authorized under a CWA Section 404 permit.
	Buffer disturbances will occur for the construction of a water-dependent structure or water access area (e.g., pier, boat ramp, and trail).

## 4.2 Perimeter Controls

### General

• SiltSoxx shall be furnished and installed at all perimeter areas that are expected to receive pollutant discharge, particularly around the limits of earthwork. SiltSoxxs shall also be installed around the staging and stockpile area.

## **Specific Perimeter Controls**

SiltSoxx	
Description: Silt:	Soxx
Installation	7/28/2023
Maintenance	SiltSoxx should be inspected and maintained immediately after each rainfall
Requirements	and at least daily during prolonged rainfall. Sediment deposition should be removed, at a minimum, when deposition accumulates to one-half the height of the SiltSoxx, and moved to an appropriate location so the sediment is not readily transported back toward the SiltSoxx. SiltSoxx should be repaired immediately if there are any signs of erosion or sedimentation below them. If there are signs of undercutting at the center or the edges of the barrier, or impounding of large volumes of water behind them, sediment barriers should be replaced with a temporary check dam. Should the fabric on a SiltSoxx decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric should be replaced promptly. Any sediment deposits remaining in place after the SiltSoxx is no longer required should be dressed to conform to the existing grade, prepared and seeded. If there is evidence of end flow on properly installed barriers, extend barriers uphill or consider replacing them with other measures, such as temporary diversions and sediment traps. SiltSoxx have a useful life of one season. On longer construction projects, SiltSoxx should be replaced periodically as required to maintain effectiveness.
Design Specifications	The maximum contributing drainage area above the SiltSoxx should be less than 1/4 acre per 100 linear feet of SiltSoxx. The maximum length of slope above the SiltSoxx should be 100 feet.  Perimeter control should be installed parallel to the base of the slope or other disturbed area. In challenging conditions (i.e., 2:1 slopes), a second perimeter control shall be constructed at the top of the slope, or staking may be increased. Effective Soxx height in the field should be as follows: 5" diameter Soxx = 4" high; 8" diameter Soxx = 6.5" high; 12" diameter Soxx = 9.5" high; 18" diameter Soxx = 14.5" high; 24" diameter Soxx = 19" high. Stakes should be installed through the middle of the perimeter control on 10 ft (3m) centers, using nominal 2 in (50mm) by 2 in (50mm) by 3 ft (1m) wooden stakes. 5" diameter Soxx may use 1" (25 mm) x 1" (25 mm) x 18 " (0.5 m) wooden stakes. In the event staking is not possible, i.e., when perimeter control is used on highly compacted soils or impervious surfaces, sand bags (or equivalent) may be used to stabilize Soxx, as long as effective height is not compromised. On impervious surfaces, concrete blocks (or equivalent) may be used behind the perimeter control to help stabilize during rainfall/runoff events. Alternatively, stakes may be installed directly behind the Soxx at a 90-degree angle to level ground (regardless of slope angle), where stakes are in direct contact with the downslope side of Soxx. If high runoff or sediment accumulation is expected, staking through the Soxx may be required.

## 4.3 Sediment Track-Out

### General

 Contractor will construct and install temporary construction exists as shown on the erosion & sediment control plans.

## **Specific Track-Out Controls**

Stabilized Temp	Stabilized Temporary Construction Exit	
Description: Ten	nporary Construction Exit	
Installation	7/28/2023	
Maintenance Requirements	The exit should be maintained in a condition that will prevent tracking of sediment onto public rights-of-way. When the control pad becomes ineffective, the stone should be removed along with the collected soil material, regraded on site, and stabilized. The entrance should then be reconstructed. The contractor should sweep the pavement at exits whenever soil materials are tracked onto the adjacent pavement or traveled way. When wheel washing is required, it should be conducted on an area stabilized with aggregate, which drains into an approved sediment-trapping device. All sediment should be prevented from entering storm drains, ditches, or waterways. Where sediment has been tracked-out from the site onto paved roads, sidewalks, or other paved areas outside of the site, remove the deposited sediment by the end of the same business day in which the track-out occurs or by the end of the next business day if track-out occurs on a non-business day. Remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. No hosing or sweeping tracked-out sediment into any stormwater conveyance, storm drain inlet, or water of the U.S.	
Design Specifications	<ul> <li>Temporary construction exits should meet the following requirements:</li> <li>The minimum stone used should be 3-inch crushed stone.</li> <li>The minimum length of the pad should be 75 feet, except that the minimum length may be reduced to 50 feet if a 3-inch to 6-inch high berm is installed at the entrance of the project site.</li> <li>The pad should extend the full width of the construction access road or 10 feet, whichever is greater.</li> <li>The pad should slope away from the existing roadway.</li> <li>The pad should be at least 6 inches thick.</li> <li>A geotextile filter fabric should be placed between the stone pad and the earth surface below the pad. The pad should be maintained or replaced when mud and soil particles clog the voids in the stone such that mud and soil particles are tracked off-site.</li> <li>Natural drainage that crosses the location of the stone pad should be intercepted and piped beneath the pad, as necessary, with suitable outlet protection.</li> </ul>	

# 4.4 Stockpiles or Land Clearing Debris Piles Comprised of Sediment or Soil

### General

 Designated Staging & Stockpile Area. Measures to locate, manage, and protect stockpiled materials, such as soils. Used to reduce or eliminate wind and water erosion, and prevent resulting air and water pollution from displaced sediment.

## **Specific Stockpile Controls**

Staging & Stock	pile Practices
Description: Des	signated Staging & Stockpile Area. Measures to locate, manage, and protect
	erials, such as soils. Used to reduce or eliminate wind and water erosion, and
	g air and water pollution from displaced sediment.
Installation	7/28/2023
Maintenance	<ul> <li>Inspect all stockpiles immediately after storm events and at the</li> </ul>
Requirements	frequencies specified in the project erosion and sediment control plan and in applicable permits. At a minimum, inspect weekly during wet weather periods to verify that erosion and sediment control measures are in place and functioning properly.  Repair and/or replace perimeter controls and stockpile coverings as needed to keep them functioning properly. Contractor is prohibited from hosing down or sweeping soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance, storm drain inlet, or water of the U.S.
Design	Locate stockpiles a minimum of 50 feet away from concentrated
Specifications	flows of stormwater, drainage courses, and inlets.  • Protect all stockpiles from stormwater run-on using temporary
	perimeter measures such as diversions, berms, sandbags, or other approved practice.
	<ul> <li>Implement wind erosion control practices as appropriate on all stockpiled material.</li> </ul>
	<ul> <li>Inactive soil stockpiles should be protected with soil stabilization measures (temporary seed and mulch or other temporary stabilization practice) and temporary perimeter sediment barriers at all times.</li> <li>Perimeter sediment barriers can be omitted if the stockpile are located in an area that drains to the onsite sediment basin.</li> </ul>

### 4.5 Minimize Dust

#### General

• Contractor will utilize dust control as needed and in accordance with the following:

### **Specific Dust Controls**

### **Dust Control**

**Description:** Dust control consists of applying various measures to prevent blowing and movement of dust from exposed soil surfaces. This practice is applicable to areas subject to dust blowing and soil movement where on-site and off-site damage is likely to occur if preventive measures are not taken. Typical dust control measures include traffic control, Construction phasing, and maintenance of existing vegetation to limit exposure of soils and prevent conditions that result in dry soils and dust; application of water, calcium chloride, and temporary stabilization practices to control mobilization of dust by equipment operation or wind; and pavement sweeping to prevent accumulation of dust-producing sediment. Dusty conditions occur when a disturbed site, soil stockpiles, or unpaved road surfaces dry out. Soil fines can actually shrink due to moisture loss that, in turn, loosens and weakens the soil surface. The dust becomes mobilized by equipment trafficking or by wind action. Dust can also become mobilized from construction equipment spilling or tracking soil materials onto paved surfaces, as well as from the operation of stationary equipment such as rock crushers. Dust can cause off-site damage, be a health hazard to humans, wildlife and plant life, or become a traffic safety hazard.

Installation	7/28/2023
Maintenance	When temporary dust control measures are used, repetitive treatment should be applied as
Requirements	needed to accomplish control.
Design	Moisten exposed soil surfaces periodically with adequate water to control dust.
Specifications	<ul> <li>Avoid excessive application of water that would result in mobilizing sediment and</li> </ul>
	subsequent deposition in natural waterbodies

### 4.6 Minimize Steep Slope Disturbances

### **General**

 Contractor to utilize Temporary Erosion Control Blankets as specified on the erosion & sediment control plans. Erosion control blankets shall be installed where slope exceeds 3:1.

## **Specific Steep Slope Controls**

### **Temporary Erosion Control Blankets**

**Description:** Erosion control blankets or mats consist of protective manufactured mulch blankets, installed on prepared soil surfaces to provide erosion protection and surface stability on steep slopes, vegetated channels, or shorelines during vegetation establishment. Erosion control blankets temporarily stabilize and protect disturbed soil from raindrop impact and surface erosion. Like other types of mulch, the blankets help increase infiltration, decrease compaction and soil crusting, and conserve soil moisture. Erosion control blankets increase the germination rates for grasses and legumes and promote vegetation establishment. Erosion control blankets also protect seeds from predators and reduce desiccation and evaporation by insulating the soil and seed environment. Erosion control blankets generally consist of machine-made mats made of organic, biodegradable mulch such as straw, curled wood fiber (excelsior), coconut fiber or a combination thereof, evenly distributed on or between manufactured netting. Netting is typically composed of photodegradable polypropylene or biodegradable natural fiber. The blankets are provided in rolls for ease of handling and installation.

Installation	7/28/2023
Maintenance	All blanket and mats should be inspected weekly during the construction period, and
Requirements	after any rainfall event exceeding $\frac{1}{2}$ inch in a 24-hour period. • Any failure should be
	repaired immediately. If washout of the slope, displacement of the mat, or damage to
	the mat occurs, the affected slope shall be repaired and reseeded, and the affected
	area of mat shall be re-installed or replaced.

## Design Specifications

- Proper site preparation is essential to ensure complete contact of the protection matting with the soil.
- Grade and shape area of installation.
- Remove all rocks, clods, trash, vegetative or other obstructions so that the installed blankets will have direct contact with the soil.
- Prepare seedbed by loosening 2-3 inches of topsoil above final grade.
- Incorporate amendments, such as lime and fertilizer, into soil according to soil test and the seeding plan.
- Seed area before blanket installation for erosion control and revegetation. Seeding after mat installation is often specified for turf reinforcement application. When seeding prior to blanket installation, all check slots and other areas disturbed during installation must be reseeded.
- Where soil filling is specified, seed the matting and the entire disturbed area
  after installation and prior to filling the mat with soil. Blankets shall be installed
  and anchored per the manufacturer's specifications. If the manufacturer's
  instructions differ from those listed below, the manufacturer's instructions should
  be followed.
- Blankets shall be placed within 24 hours after sowing seed in that area.
- U-shaped wire staples, metal geotextile stake pins, or triangular wooden stakes can be used to anchor mats to the ground surface.
- Wire staples should be a minimum gauge as specified by the manufacturer.
- Metal stake pins should be 3/16-inch diameter steel with a 1 1/2 inch steel washer at the head of the pin, or as specified by the manufacturer.
- Wire staples and metal stakes should be driven flush to the soil surface. All
  anchors should have sufficient ground penetration to resist pullout. Longer
  anchors may be required for loose soils.
- Blankets shall be installed on slopes per the manufacturer's specifications. If the manufacturer's instructions differ from those listed below, the manufacturer's instructions should be followed.
- Blankets shall be laid loosely over the soils, maintaining contact with the soil, and not stretched.
- Blankets shall be anchored at the top of the slope in a trench to prevent runoff from undermining the mat. Subsequent mats should be overlapped by the upslope mat. Backfill trench and tamp earth firmly.
- Blankets shall be unrolled in the direction of the water flow, overlapping the edges by a minimum of 4 inches and stapling the edges, as directed by the manufacturer.
- When blankets must be spliced, place blankets end over end (shingle style) with 6-inch minimum overlap. Staple through overlapped area, approximately 12 inches apart, or as specified by manufacturer.
- Lay blankets loosely and maintain direct contact with the soil do not stretch.
- Blankets shall be stapled sufficiently to anchor blanket and maintain contact
  with the soil. Staples shall be placed down the center and staggered with the
  staples placed along the edges. Stapling pattern and number of staples will
  depend on steepness of slope and manufacturer's anchoring methods; follow
  manufacturer's instructions.

## 4.7 Topsoil

### General

Contractor shall preserve topsoil onsite. Preservation of existing topsoil will help to maintain the soil structure on the construction site, as well as provide a growing medium for vegetative stabilization measures. Better vegetative stabilization reduces erosion rates of the underlying soil and also increases the infiltrative capacity of the soil, thereby reducing the amount of sediment transported to downslope sediment and perimeter controls. Topsoil can be preserved by stockpiling the native topsoil on the site for later use (e.g., for vegetative stabilization), or by limiting disturbance and removal of the topsoil and associated vegetation. For example, topsoil can be preserved by limiting clearing and grading to only those areas where necessary to accommodate work area or the building footprint. EPA notes that some projects may be designed to be highly impervious after construction, and therefore little or no vegetation is intended to remain. In these cases, EPA recognizes that preserving topsoil at the site would not be feasible or desirable. In addition, some sites may not have space to stockpile topsoil on site for later use, in which case, it may also not be feasible to preserve topsoil. EPA is aware that stockpiling of topsoil in off-site locations, or transfer of topsoil to other locations, is frequently used in these situations and EPA would view this as acceptable practice.

### **Specific Topsoil Controls**

Onsite Stockpili	ng of Native Topsoil
<b>Description:</b> Ret	rention of native topsoil by onsite stockpiling.
Installation	7/28/2023
Maintenance Requirements	<ul> <li>Inspect all soil stockpiles immediately after storm events and at the frequencies specified in the project erosion and sediment control plan and in applicable permits. At a minimum, inspect weekly during wet weather periods to verify that erosion and sediment control measures are in place and functioning properly.</li> <li>Repair and/or replace perimeter controls and stockpile coverings as</li> </ul>
	needed to keep them functioning properly
Design Specifications	<ul> <li>Locate stockpiles a minimum of 50 feet away from concentrated flows of stormwater, drainage courses, and inlets.</li> <li>Protect all stockpiles from stormwater run-on using temporary perimeter measures such as diversions, berms, sandbags, or other approved practice.</li> <li>Stockpiles should be surrounded by sediment barriers as described in this manual, to prevent migration of material beyond the immediate confines of the stockpiles.</li> <li>Implement wind erosion control practices as appropriate on all stockpiled material</li> </ul>

### 4.8 Soil Compaction

### General

Reducing stormwater discharges reduces erosion and therefore reduces the amount of sediment and other pollutants discharged from the site. Contractor may either restrict vehicle and equipment use on areas that will be vegetatively stabilized or where infiltration practices will be installed, or use soil conditioning techniques to decompact soils to support vegetative growth. Specific types of soil conditioning techniques could include deep-ripping and decompaction or sub-soiling. EPA also notes that the proposed requirement to minimize soil compaction will not apply to areas that will not be used for final vegetative stabilization or for areas where infiltration practices will not be installed. For example, the proposed requirements will not apply to disturbed areas that will become paved surfaces, such as roads, foundations, footings, or on embankments, or on areas where soil compaction is necessary by design. The requirement to use soil conditioning techniques is not required in any area where it would not be feasible, such as on steep slope areas or any other areas where it is not safe for the required equipment.

### 4.9 Storm Drain Inlets

#### General

 Block and Gravel Sediment Control Barriers shall be constructed at all proposed catch basin drains. Dandy Bags® shall be furnished and installed at all existing catch basins.

### **Specific Storm Drain Inlet Controls**

Temporary Block and Gravel Sediment Barrier					
<b>Description:</b> Co	<b>Description:</b> Construct a temporary sediment barrier and channelize runoff to sediment				
trapping device	trapping device.				
Installation	N/A				
Maintenance Requirements	<ul> <li>Inspect barrier after each rainfall event of 0.25" or greater and make any necessary repairs immediately.</li> <li>Remove sediment promptly after a storm to sustain adequate storage volume for subsequent rainfall, and to prevent additional sediment from entering the storm drain.</li> <li>If the barrier no longer drains properly because the gravel has become clogged with sediment, remove the existing gravel. Replace with clean gravel of the same gradation.</li> <li>When the drainage area has been sufficiently stabilized, remove all materials and any sediment accumulation. The disturbed area shall be brought to proper grade and stabilized with vegetation or other materials. Stabilize areas only with vegetation shown on the landscaping plan.</li> </ul>				

## Design Specifications

- Prior to beginning construction activities, determine the exact location of any nearby underground utilities.
- Ensure topography in the field is consistent with topography shown on the plans. If field observations indicate the inlet protection will not function as intended, do not perform any construction activities until the plans have been revised.
- Clear the area of all debris (rocks, clods, trash, vegetation etc.) that may hinder excavation and disposal/relocation of soil.
- Uniformly grade the approach to the storm drain inlet such that the top elevation of the structure is lower than the ground elevation downslope from the inlet.
- The installation of temporary dikes may be necessary to prevent incoming flow from bypassing the structure.
- Place concrete blocks around each side of the structure. Ensure at least one block on each side its laid on its side to allow for pool drainage. The foundation should be excavated below the crest of the storm drain. The bottom row of concrete blocks should be placed right up against the edge of the storm drain to provide lateral support. This will also help prevent washouts in the event of an overflow. 2" x 4" wooden studs may be placed through block openings in the event extra lateral support is required.
- Place wire screen/wire mesh with ½" openings over all block openings to hold the gravel filter in place.
- Place gravel around the concrete blocks. The gradation of the stone shall match the gradation shown on the plans. Once all gravel has been placed, smooth to an even grade.
- Once construction of the temporary barrier is complete, verify finished grades and dimensions are consistent with those shown on the plans.
   Ensure all materials used comply with the plans and the specifications.

# 4.10 Constructed Site Drainage Feature

## General

• Temporary check dams shall be constructed across the regraded swale to reduce the velocity of concentrated stormwater flow.

## **Specific Conveyance Channel Controls**

Temporary Che	Temporary Check Dam				
	nstruct temporary check dams at the locations shown on the erosion control				
plan to reduce the velocity of concentrated stormwater flow through the swale.					
Installation	N/A				
Maintenance	Inspect check dams after each rainfall and at least daily during				
Requirements	prolonged rainfall. Make necessary repairs immediately.				
	<ul> <li>Inspections should verify that the center of the dam is lower than the</li> </ul>				
	edges.				
	Erosion caused by high flows around the edges of the dam must be				
	corrected immediately.				
	If evidence of siltation in the water is apparent downstream from the				
	check dam, the check dam should be inspected and adjusted				
	immediately.				
	<ul> <li>Check dams should be checked for sediment accumulation after</li> </ul>				
	each significant rainfall. Sediment must be removed when it reaches				
	one half of the original height or before.				
Design	Check dams must be installed before runoff is directed to the swale or				
Specifications	drainage ditch.				
	The maximum contributing drainage area to the dam should be less				
	than one (1) acre.				
	The maximum height of the dam should be two (2) feet.  The part of the plant of the part of the p				
	The center of the dam should be at least 6 inches lower than the				
	outer edges.				
	The maximum spacing between the dams should be such that the toe of the upstream dam is at the same elevation as the outflow				
	elevation of the downstream dam.				
	The check dam should not be used in a flowing stream.				
	Stone check dams should be constructed of a well-graded angular 2-				
	inch to 3-inch stone. 3/4" stone on the upgradient face is				
	recommended for better filtering.				
	If carefully installed and monitored, timber check dams may be used,				
	and should be constructed of 4-inch to 6-inch logs embedded at				
	least 18 inches deep into the soil. However, stone check dams are				
	generally preferred. The stone has the ability to conform to the				
	channel and settle if scour occurs, rendering stone check dams less				
	susceptible to scour around the ends and downstream of the devices.				
	<ul> <li>Temporary structures should be removed once the swale or ditch has</li> </ul>				
	been stabilized. In temporary ditches and swales, check dams should				
	be removed and the ditch filled in when it is no longer needed. In				
	permanent structures, check dams should be removed when a				
	permanent lining has been established. If the permanent lining is				
	vegetation, then the check dam should be retained until the grass				
	has matured to protect the ditch or swale. The area beneath the				
	check dam must be seeded and mulched immediately after				
	removal.				

## 4.11 Sediment Basins or Similar Impoundments

#### General

 Temporary sediment trap shall be constructed upstream of the proposed infiltration pond to reduce the amount of sediment discharged to the pond.

Sediment Trap					
<b>Description:</b> Construct temporary sediment trap at the location of the proposed sediment					
forebay shown on the erosion control plans to catch sediment before entering the infiltration					
practice. At the	practice. At the end of construction, clean out and re-stabilize to ensure long-term				
performance.					
Installation	7/28/2023				
Maintenance Requirements	<ul> <li>Inspect sediment traps after each rainfall and at least daily during prolonged rainfall. Make necessary repairs immediately.</li> <li>Sediment traps should be checked for sediment accumulation after each significant rainfall. Sediment must be removed when it reaches one half of the original height or before.</li> <li>Accumulated sediment shall be moved to an appropriate location so the sediment is not readily transported back toward the sediment trap.</li> </ul>				
Design Specifications	<ul> <li>Maximum area for overflow sediment trap is usually 1 acre.</li> <li>Must have gentle slopes (less than 2% gradually) and predominantly overland sheet flow.</li> <li>Maximum permanent water depth is 2 feet. Overflow sediment traps may not be effective for high groundwater table and inflows.</li> <li>Use the most permeable sediment control in labeled area so as to maximize travel time and settling sediment.</li> </ul>				

### 4.12 Chemical Treatment

No chemical treatment of onsite soils is proposed for this project.

### 4.13 Dewatering Practices

No dewatering is proposed for this project.

## 4.14 Other Stormwater Controls

#### General

• In addition to the previously mentioned stormwater controls, an above ground infiltration system is proposed. This proposed location for this infiltration system is in the south-east portion of the site adjacent to the existing wetlands and east to the proposed roadway. Water quality treatment is provided by runoff pollutants binding to soil particles beneath the basin as water percolates into the subsurface. As will all impoundment BMPs above ground infiltration basins should be designed with an outlet structure to pass peak flows during a range of storm events, as well as with an emergency spillway to pass peak flows around the embankment during extreme storm events that exceed the combined infiltration capacity and outlet structure capacity of the facility. As indicated on the plans, sediment-laden water must not be discharged to the above ground infiltration system.

## **Specific Stormwater Control Practices**

### **Above-Ground Infiltration System**

**Description:** Above ground infiltration systems are a type of infiltration BMP designed to temporarily store runoff, allowing all or a portion of the water to infiltrate the ground. An infiltration basin is designed to completely drain between storm events. An infiltration basin is specifically designed to retain and infiltrate the entire Water Quality Volume. Some infiltration basins may infiltrate additional volumes during larger storm events, but many will be designed to release stormwater exceeding the water quality volume from the larger storms. In a properly sited and designed infiltration basin, water quality treatment is provided by runoff pollutants binding to soil particles beneath the basin as water percolates into the subsurface. Biological and chemical processes occurring in the soil also contribute to the breakdown of pollutants. Infiltrated water is u sed by plants to support growth or it is recharged to the underlying aroundwater.

underlying grou	indwater.
Installation	TBD
	<ul> <li>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.</li> <li>Do not place infiltration systems into service until the</li> </ul>
	contributing areas have been fully stabilized.  - Vegetation should be established immediately.

### 4.15 Site Stabilization

## Total Amount of Land Disturbance Occurring at Any One Time Five Acres or less X More than Five Acres Permanant Vegetative Buffer X Vegetative \( \subseteq \text{Non-Vegetative} \) ☐ Temporary X Permanent **Description:** Permanent vegetative cover should be established on disturbed areas where permanent, long-lived vegetative cover is needed to stabilize the soil, to reduce damages from sediment and runoff, and to enhance the environment. Runoff and sheet erosion caused by splash erosion (raindrop impact on bare soil) is the source of most fine particles in sediment. To reduce the sediment load in runoff, the soil surface itself should be protected. The most effective and economical means of controlling sheet and rill erosion is to establish a vegetative cover. 7/28/2023 Installation Completion 7/20/2028 Permanent seeded areas should be inspected at least monthly during Maintenance **Requirements** the course of construction. Inspections, maintenance, and corrective actions should continue until the owner assumes permanent operation of the site. Seeded areas should be moved as required to maintain a healthy stand of vegetation, with mowing height and frequency dependent on type of grass cover. Based on inspection, areas should be reseeded to achieve full stabilization of exposed soils. At a minimum, 85% of the soil surface should be covered by

period of vegetation establishment.

If any evidence of erosion or sedimentation is apparent, repairs should

be made and areas should be reseeded, with other temporary measures (e.g., mulch) used to provide erosion protection during the

vegetation.

## Design Specifications

## Site Preparation:

- Install needed erosion and sediment control measures such as siltation barriers, diversions, and sediment traps.
- Grade as needed for the access of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring.
- Runoff should be diverted from the seeded area.
- On slopes 4:1 or steeper, the final preparation should include creating horizontal grooves perpendicular to the direction of the slope to catch seed and reduce runoff.

### Seedbed Preparation:

- Work lime and fertilizer into the soil as nearly as practical to a depth of 4 inches with a disc, spring tooth harrow or other suitable equipment. The final harrowing operation should be on the general contour. Continue tillage until a reasonably uniform, fine seedbed is prepared. All but clay or silty soils and coarse sands should be rolled to firm the seedbed wherever feasible.
- Remove from the surface all stones 2 inches or larger in any dimension. Remove all other debris, such as wire, cable, tree roots, concrete, clods, lumps, trash, or other unsuitable material.
- Inspect seedbed just before seeding, If traffic has left the soil compacted; the area must be tilled and firmed as above.
- Where the soil has been compacted by construction operations, loosen soil to a depth of 2 inches before applying fertilizer, lime and seed.
- If applicable, fertilizer and organic soil amendments should be applied during the growing season.
- Apply limestone and fertilizer according to soil test recommendations.
  If soil testing is not feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 600 pounds per acre or 13.8 pounds per 1,000 square feet of low phosphate fertilizer (N-P205-K20) or equivalent. Apply limestone (equivalent to 50 percent calcium plus magnesium oxide) at a rate of 3 tons per acre (138 lb. per 1,000 square feet).
- Fertilizer should be restricted to a low phosphate, slow release nitrogen fertilizer when applied to areas between 25 feet and 250 feet from a surface water body. No fertilizer except limestone should be applied within 25 feet of the surface water. These limitations are requirements for any water body protected by the Comprehensive Shoreland Protection Act.

#### Seeding:

- Select a seed mixture in Table 4-2 that is appropriate for the soil type and moisture content as found at the site, for the amount of sun exposure and for level of use.
- Select seed from recommendations in Table 4-3.
- Inoculate all legume seed with the correct type and amount of inoculant.
- Apply seed uniformly by hand, cyclone seeder, drill, cultipacker type seeder or hydroseeder (slurry including seed and fertilizer). Normal seeding depth is from 1/4 to 1/2 inch. Hydroseeding that includes mulch may be left on soil surface. Seeding operations should be on the contour.

- Where feasible, except where either a cultipacker type seeder or hydroseeder is used, the seedbed should be firmed following seeding operations with a roller, or light drag.
- Spring seeding usually gives the best results for all seed mixes or with legumes. Permanent seeding should be completed 45 days prior to the first killing frost. When crown vetch is seeded in later summer, at least 35% of the seed should be hard seed (unscarified). If seeding cannot be done within the specified seeding dates, mulch according to the "Temporary and Permanent Mulching practice" and delay seeding until the next recommended seeding period.
- Temporary seeding should typically occur prior to September 15th.
- Areas seeded between May 15<sup>th</sup> and August 15<sup>th</sup> should be covered with hay or straw mulch, according to the "Temporary and Permanent Mulching" practice.
- Vegetated growth covering at least 85% of the disturbed area should be achieved prior to October 15th. If this condition is not achieved, implement temporary stabilization measures for overwinter protection, and complete permanent seed stabilization during the next growing season.

### Hydroseeding:

- When hydroseeding (hydraulic application), prepare the seedbed as specified above or by hand raking to loosen and smooth the soil to remove surface stones larger than 2 inches in diameter.
- Slopes must be no steeper than 2 to 1 (2 feet horizontally to 1 foot vertically).
- Lime and fertilizer may be applied simultaneously with the seed. The
  use of fiber mulch on critical areas is not recommended (unless it is
  used to hold straw or hay). Better protection is gained by using straw
  mulch and holding it with adhesive materials or 500 pounds per acre
  of wood fiber mulch.
- Seeding rates must be increased 10% when hydroseeding.

## **SECTION 5: POLLUTION PREVENTION CONTROLS**

## 5.1 Potential Sources of Pollution

## **Construction Site Pollutants**

Pollutant-Generating Activity	Pollutants or Pollutant Constituents (That could be discharged if exposed to stormwater)	Location on Site (Or reference SWPPP site map where this is shown)
Outdoor Stockpile Storage	Sediment	Within limits of work area
Vehicle/Equipment Parking	Fuels, Oils, Petroleum Products	Within limits of work area
Earthwork Activities	Sediment, Calcium, Hydrocarbons	Within limits of work area
Material Processing	Sediment, Dust	Within limits of work area
Site Restoration Activities	Sediment, Fertilizers, Pesticides, Herbicides	Within limits of work area

## 5.2 Spill Prevention and Response

Construction activity spill prevention and response shall be the Construction Manager and Site Contractors responsibility. Site construction activity pollution prevention measures typically focus on minimizing land disturbance, temporary site stabilization and construction litter control, containment and responsible disposal.

Employees expected to handle or work with chemicals or be in the vicinity of stored chemicals shall be trained. Training shall include chemical familiarity, MSDS sheet knowledge, container and secondary containment recognition, spill or compromised storage conditions and appropriate spill/leak containment/clean up. Employees may not be qualified to contain and clean-up chemical spills. However, all trained employees are expected to know the difference and respond or react accordingly. In all cases, trained employees are responsible to document and notify management of improper chemical storage/spill conditions.

Secondary containment devices shall be maintained in an empty condition at all times. In the unlikely event a chemical spill or primary containment breach occurs, the secondary containment device shall be promptly (within 24 hours) inspected, cleaned out if possible or immediately replaced by a trained professional. All used or ineffective spill kits or containment devices shall be disposed of offsite in a legal manner, by a licensed vendor.

In case of reportable discharge of petroleum based product, call the NHDES Waste Management Division immediately at (603) 271-3899 or the New Hampshire Department of Safety at (603)223-4381. In case of reportable discharge: Call 911. The 911 dispatcher will contact the Local Fire Department and/or HAZ-MAT team.

A "Reportable Discharge," as it relates to petroleum (diesel fuel, oil), is the discharge of any measurable volume into a catch basin, pipe, or other stormwater conveyances, if/when spill control methods have failed.

If a spill or leak is observed onsite that does not meet "reportable discharge" criteria, a trained employee is responsible to complete a spill report in accordance with the spill prevention plan and corrective action log contained in the SWPPP. All construction activity related spills or leaks are to be reported to and documented by the Construction Manager.

### 5.3 Fueling and Maintenance of Equipment or Vehicles

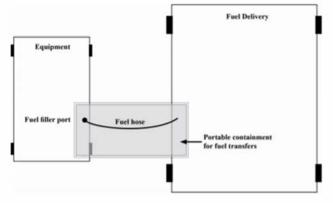
### General

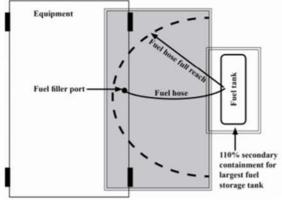
- Vehicle fueling will be conducted onsite. Onsite fuel tank will consist of a double-wall flameshield tank.
- Env-Wq 401, Best Management Practices for Groundwater Protection, applies to a variety of businesses and activities considered potential contamination sources under the Groundwater Protection Act, RSA 485C. If you fuel or maintain excavation or earthmoving equipment in the field, this fact sheet explains how to meet the requirements of the best management practices (BMP) rules. The BMP rules apply to "regulated containers" holding five or more gallons of a regulated substance, which include motor fuels, lubricants, hydraulic fluids, other petroleum products, degreasers, and other substances that are capable of contaminating drinking water. The rules do not apply to petroleum storage tanks regulated under Env-Wm 1401 Underground Storage Facilities (USTs) or Env-Wm 1402 Control of Aboveground Petroleum Storage Facilities (ASTs), but may apply to the transfer of fuel or other petroleum products between ASTs/ USTs and equipment or portable containers.

- Store fuels and regulated substances in sealed, clearly labeled containers.
   Regulated containers must be labeled (specifying contents), closed and sealed at all times, except to add or remove fluids.
- Store regulated containers on a stable, level, impervious surface. Regulated containers must be stored in such a way that they will not easily tip over. Fueling, fuel storage, and maintenance areas, where transfers of fuel/fluids or work on equipment or vehicles that might result in spills, must be located on level ground with an impervious floor surface constructed of concrete, asphalt, chemically compatible polymer material or any other impervious surface that will contain gas, oil or other fluids in use. If the facility is subject to EnvWm 1402 (AST rules; see above) the impervious surface must be concrete. Impervious surfaces together with secondary containment barriers (e.g., tank vaults, positive limiting barriers, containment berms) can effectively contain spills or tank failures. Containers must not be stored on pervious surfaces (wood, soil) or otherwise come in contact with moist earth.
- Provide secondary containment around fuel storage containers and during transfers. Secondary containment must be provided for all regulated containers and be in place during refueling activities involving transfers of fuel from "on-road" delivery trucks, "offroad" tank trucks (referred to as "mobile refuelers") or portable containers to field equipment.
- This involves fueling earthmoving or excavation equipment from a tank truck or some other container that is moved around the site. 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. 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. Personnel must attend to the fueling process to ensure that any spills will be of limited volume. See the diagram in Figure 1A and Attachment 1, photos A and B for examples of portable spill containment that may be used during mobile fuel transfers.
- Option 2 (Fuel Storage and Transfer Areas): This involves fueling equipment in a fixed location on the site. Refueling containers (skidmounted tanks, drums, five-gallon cans) must have secondary containment. Secondary containment areas for fuel storage tanks must be able to contain 110 percent of the volume of the largest fuel storage container and have an impervious floor. Tanks may be placed within a metal, plastic, polymer or precast concrete vault providing 110 percent of the volume of the largest fuel storage container. For smaller volumes stored in fuel drums, containment pallets provide suitable secondary containment. See Attachment 1, photos E and F. Fuel transfer should be done over a flat, impervious fuel transfer area adjacent to the fuel storage tank(s). The impervious fuel transfer area should extend beyond the full reach (length) of the fuel hose to avoid spills directly onto a pervious surface. See Figure 1B. Portable containment equipment may provide both secondary containment for the fuel storage tank (110 percent of the volume) and the required impervious area (typically raised at the perimeter) necessary for conducting fuel transfers. See Attachment 1, photos C and, D. Tank storage and fuel transfers may also be within secondary containment areas constructed by forming a basin sloped down to a central low point or bermed along the perimeter, lined with a continuous sheet of 20 mil (or greater) polymer material or appropriate geomembrane liner 4, and backfilled with at least six inches of sand.

Figure 1A Containment with Impervious Surface (in grey) for Mobile Fuel Transfers

Figure 1B
Tank Containment with Impervious Surface
(in grey) for Fuel Transfers





- Keep secondary containment area covered and dry. 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. (See Attachment 1, photos E and F) If the water collected from the containment area has a visible sheen, DES must be contacted at (603) 2713644 before disposal of the water.
- Comply with Related State and Federal Requirements Construction, installation or use of aboveground tanks storing petroleum products with a capacity greater than 660 gallons in any one tank, or a combined volume of petroleum products tanks on a site greater than 1,320 gallons, must be preapproved and registered with DES per Env-Wm 1402. (Contact the AST Program at 271-3644) Sites storing more than a total of 1,320 gallons (in containers 55-gallons or larger) of oil products are also regulated under the federal Spill Prevention Control and Countermeasure (SPCC) Rule, 40 CFR 112. In addition to secondary containment requirements for "bulk storage" these sites must also provide spill containment during mobile fuel transfers complying with the rule's provisions. Both fuel trucks that come to the site to deliver fuel (e.g., "on-road") and vehicles only used at the site to dispense fuel to equipment (e.g., "mobile refuelers") are subject to the SPCC rules involving secondary containment during fuel transfers. Guidance on the SPCC rule with examples of secondary containment options may be found within EPA's Spill Prevention, Control, and Countermeasure (SPCC) Guidance for Regional Inspectors. For a copy of this
  - guide, please see <a href="www.epa.gov/OEM/content/spcc/spcc\_guidance.htm#Content">www.epa.gov/OEM/content/spcc/spcc\_guidance.htm#Content</a>
- Stationary fuel tanks over 60 gallons and portable containers under 60 gallons that provide fuel to off-road vehicles (e.g. excavators) must also comply with National Fire Protection Association (NFPA) standards, specifically NFPA
   30 Flammable and Combustible Liquids Code, and, if fueling "on-road" vehicles, NFPA
   30A Motor Fuel Dispensing Facilities and Repair Garages. NFPA standard 30 establishes minimum fabrication standards for tanks and containers holding flammable and combustible liquids, limits on the amount of materials that can

- be stored in any one pile or rack, distances between piles or racks, property line setbacks and accessibility.
- Any fuel container larger than 60 gallons must meet UL standard 142,
   Steel Aboveground Tanks for Flammable and Combustible Liquids establishing minimum requirements for fabrication, installation and inspection for aboveground storage tanks.
- Train employees to prevent, contain, and clean up spills. Train employees in all aspects of
  proper storage and handling of fuel or other regulated substances. Instruct employees to
  use spill prevention equipment (e.g., drip pans, etc.), be present during all fuel transfers,
  and immediately clean up spills and contaminated soil. Absorbents to pick up spills
  and leaks must be located in the immediate area where fuels are transferred, used, or
  stored. In addition, spill response information must be posted at all storage areas (poster
  available from DES).
- Immediately report significant or uncontrolled spills. Small spills that are quickly cleaned up do not need to be reported. However, if any of the following occurs, the spill must be immediately reported to the N.H. Department of Environmental Services at (603) 271-3899 or (603) 271-3636 after 4 p.m. on weekdays or on weekends:
  - √ The spill is 25 gallons or more.
  - ✓ The spill is not contained immediately.
  - ✓ The spill and contamination are not completely removed within 24 hours.
  - ✓ There is impact or potential impact to groundwater or surface water.
- Properly store and dispose of contaminated soil and materials. Store small quantities of contaminated soil, leaking drums/cans or used absorbent materials in covered, watertight containers. If you are going to transport contaminated absorbents or leaking drums/cans, they must be shipped in a DOT or UN Salvage Drum that complies with DOT 49 CFR 173.3 (c). Do not mix absorbents contaminated with different petroleum products or other regulated substances. This can create a hazardous waste that requires disposal by a licensed hauler. If wastes with petroleum or other regulated substances are mixed, contact DES to determine whether it is necessary to manage the waste as a hazardous or solid waste. Determining whether the waste is hazardous may require lab testing. Contact the Hazardous Waste Management Bureau's Compliance Section at (603) 271-2942 for more information. Information concerning proper disposal of petroleum contaminated solid wastes (e.g., absorbents) is available from the Solid Waste Bureau's Compliance Section at (603) 271-2925.
- Keep storage areas secure. Fuel storage areas must be kept secure. Employ a locked gate at the entrance to the site, a SiltSoxx and a locked gate around the storage area, and/or store regulated substances in a locked trailer or shed. Access to storage areas must be under lock whenever the site is unattended. If the site is inactive for a period, the storage area must be inspected weekly for leaks and security. To keep storage areas secure from collision damage, berms or boulders should be used and the storage area should be located away from the active portion of the site.
- Keep containers away from surface waters, catch basins (stormwater), private and public water supply wells. Containers must be kept at least 50 feet from catch basins and surface waters, 75 feet from private wells, and outside the sanitary radius (varies from 150 to 400 feet) of a public well Contact the local public water supplier or DES (271-0688) to determine the sanitary radius for the well.

## 5.4 Washing of Equipment and Vehicles

#### General

No onsite washing of equipment and/or vehicles is proposed as part of this project. Rather, all equipment/vehicles will be washed off site at an approved location. Wastewater discharge from vehicle washing shall be done in accordance with NHDES regulations:

Water used in washing cars, trucks, and other vehicles may contain a wide range of contaminants. These contaminants can include oil, fuels and other hydrocarbons, metals, detergents, road salt and grit. Discharged into surface waters, these contaminants can degrade water quality and harm aquatic life. Discharged into groundwater, they can make water unfit for drinking. To avoid these problems and the legal consequences that may result, the following guidelines apply to facilities where vehicles are washed on a regular basis and the wash water is collected by a conveyance such as a drain, catch basin, ditch or swale and infiltrated to the ground or groundwater. Owners of facilities that conduct washing activities have four options for their wastewater discharges:

- 1. Operate a closed system with wastewater recycling (no discharge of wastewater).
- 2. Discharge to a municipal sanitary sewer.
- 3. Obtain a groundwater discharge permit.
- 4. Obtain registration to wash fewer than 30 vehicles per week and discharge to the ground surface only.
- Closed System with No Discharge
  This does not require a permit. However, it may require a "Holding Tank Registration" if
  the treatment system has a grit and oil tank that is pumped out. The water and sludge
  that are pumped from the tank must be collected and disposed of at an approved
  disposal facility, i.e., a wastewater treatment plant or hazardous waste disposal facility,
  depending on the nature of the material.
- Discharge to Municipal Sanitary Sewer
   Connections to your municipal sanitary sewer are controlled by the local sewer authority.
   Contact the local authority regarding restrictions. Some local sewer authorities do not allow connection of floor drains, while others allow connection only with adequate pretreatment, e.g., an oil/grit separator, or other controls. If you connect an existing floor drain to a municipal sanitary sewer, you still need to notify NHDES.
- Obtain a Groundwater Discharge Permit
   You may discharge vehicle wash water directly to the ground if both of the following are true:
  - a. A groundwater discharge permit is obtained in accordance with Env-Wq 402.11; and
  - b. The wash water is treated to ambient groundwater quality standards (Env-Or 600, Table 600-1) using best available technology (typically granular activated carbon).
- Wash Fewer than 30 Vehicles per Week
   If you wash fewer than 30 vehicles per week, you may
  - If you wash fewer than 30 vehicles per week, you may be able to discharge indirectly to groundwater without obtaining a groundwater discharge permit. However, you need to follow Env-Wq, 401 Best Management Practices for Groundwater Protection to avoid contamination of your wash water with regulated substances. You also need to register your discharge and floor drain, if any. To avoid having to obtain a groundwater discharge permit, you must meet all of the following conditions:
    - a. Best Management Practices for Groundwater Protection are followed.
  - b. The floor drain is not in an area where regulated contaminants are used or stored.
  - c. The wastewater: Is not from power washing, steam cleaning, engine cleaning or undercarriage cleaning; Is not from a chemical or acid wash; Does not contain soaps

or other products that contain regulated contaminants; Does not result in a surface water discharge; Discharges to the ground surface; Contains only approved detergents; Leads to an oil/water separator or other pretreatment method prior to infiltration; Is registered with NHDES in accordance with Env-Wq 402.33.

Owners of facilities with these discharges are responsible for ensuring that regulated contaminants are not discharged and that groundwater is suitable for drinking without treatment. NHDES reserves the right to verify compliance by requiring the collection and analysis of soil samples from the discharge area(s) under Env-Wq 402.33.

### 5.5 Storage, Handling, and Disposal of Building Products, Materials, and Wastes

# 5.5.1 Building Materials and Building Products

### General

 This project does not anticipate the need for the storage, handling, and disposal of building products, materials and wastes.

### **Specific Pollution Prevention Practices**

## STORAGE, CONTAINMENT, HANDLING OF MATERIALS

### **Description:**

- Contractor shall designate a waste collection area on site that does not receive a substantial amount of runoff from upland areas and does not drain directly to a water body.
- Ensure that containers have lids so they can be covered before periods of rain, and keep containers in a covered area whenever possible.
- Schedule waste collection to prevent the containers from overfilling.
- Cleanup spills immediately. For hazardous materials, follow cleanup instructions on the package. Use an absorbent material such as sawdust or kitty litter to contain the spill.
- During the demolition phase of construction, provide extra containers and schedule more frequent pickups.
- Collect, remove and dispose of all construction site wastes at authorized disposal areas. Contact a local environmental agency to identify these disposal sites

Installation	N/A
Maintenance	N/A
Requirements	
Design	N/A
Specifications	

## 5.5.2 Pesticides, Herbicides, Insecticides, Fertilizers, and Landscape Materials General

Fertilizers will be used on the landscape areas throughout the project site. Contractor shall follow all regulations that apply to the use, handling, or disposal of pesticides and fertilizers. Contractor shall store fertilizers and pesticides in a dry, covered area and will take precautions to minimize the exposure of these chemicals to precipitation and to stormwater.

## **Specific Pollution Prevention Practices**

## PROPER HANDLING AND APPLICATION OF MATERIALS

### **Description:**

- Contractor shall follow all Federal, State, and Local regulations that apply to the use, handling, or disposal of pesticides and fertilizers.
- Contractor shall not handle the materials any more than necessary.
- Contractor shall store pesticides and fertilizers in a dry, covered area.
- Contractor shall construct berms or dikes to contain stored pesticides and fertilizers in case of spillage.
- Contractor shall follow the recommended application rates and methods for the products.
- Contractor shall have equipment and absorbent materials available in storage and application areas to contain and cleanup any spills that occur.

Installation	TBD
Maintenance	N/A
Requirements	
Design	N/A
Specifications	

# 5.5.3 Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals General

On-site fueling shall be limited to the few vehicles that are to remain onsite. Limited other fluids shall be stored on-site with all major maintenance on vehicles being completed at off-site locations. Should storage of materials on site be required, Contractor shall store materials in water-tight containers and provide cover to minimize the exposure of these products to precipitation and stormwater.

### **Specific Pollution Prevention Practices**

MATERIAL HANDLING		
<b>Description:</b> Contractor shall store new and used petroleum products for vehicles in covered		
areas with berms or dikes in place to contain any spills. Immediately contain and cleanup any		
spills with absorbent materials. Have equipment available in fuel storage areas and in vehicles		
to contain and cleanup any spills that occur.		
Installation	TBD	
Maintenance	Contractor shall clean up spills immediately, using dry clean-up methods	
Requirements	where possible, and dispose of used materials properly. Contractor is	
	prohibited from hosing down areas to clean surfaces or spills. Contractor shall	
	eliminate the source of the spill to prevent a discharge or a furtherance of a	
	ongoing discharge.	
Design	N/A	
Specifications		

### 5.5.4 Hazardous or Toxic Waste

#### General

 It is anticipated that the project will result in minimal amounts of toxic or hazardous waste. Should such wastes be produced, the contractor shall store materials in containers which constructed to prevent leakage and corrosion.

### **Specific Pollution Prevention Practices**

### MATERIAL HANDLING

### **Description:**

- Contractor shall consult with local waste management authorities about the requirements for disposing of hazardous materials.
- To prevent leaks, empty and clean hazardous waste containers before disposing of them.
- Never remove the original product label from the container because it contains important safety information. Follow the manufacturer's recommended method of disposal, which should be printed on the label.
- Never mix excess products when disposing of them, unless specifically recommended by the manufacturer.
- Contractor shall separate hazardous or toxic waste from construction and domestic waste.
- Waste shall be stored in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable Federal, State, or Local requirements.
- All outside containers shall be stored within appropriately-sized secondary containment (spill berms, decks, spill containment pallets) to prevent spills from being discharged.
- Contractor shall clean up spills immediately, using dry clean-up methods, and dispose of used materials properly. Contractor is prohibited from hosing the area down to clean surfaces or spills. Contractor shall eliminate the source of the spill to prevent a discharge or furtherance of an ongoing discharge.
- To ensure the proper disposal of any contaminated soils that have been exposed to and still contain hazardous substances, the contractor shall consult with State or Local solid waste regulatory agencies tor private firms, Some landfills might accept contaminated soils, but they require laboratory tests first. Any disposal of contaminated soils shall be coordinated with the Project Engineer, PE and shall conform to all State and Local regulations.

Installation	TBD
Maintenance	Review Only
Requirements	
Design	N/A
Specifications	

### 5.5.5 Construction and Domestic Waste

### General

- This project will generate minimal amounts of construction and domestic waste.
- An onsite designated dumpster shall be provided for the construction and domestic waste.

### **Specific Pollution Prevention Practices**

### **WASTE CONTAINERS**

### **Description:**

- Contractor shall designate a waste collection area on site that does not receive a substantial amount of runoff from upland areas and does not drain directly to a water body.
- Contractor shall provide waste containers of sufficient size and number to contain construction and domestic wastes.
- Contractor shall ensure that containers have lids so they can be covered before periods of rain, and shall keep containers in a covered area whenever possible.
- Contractor shall schedule waste collection to prevent the containers from overfilling.
- Contractor shall cleanup spills immediately.
- Contractor shall collect, remove and dispose of all construction site wastes at authorized disposal areas. Contact a local environmental agency to identify these disposal sites.

Installation	TBD
Maintenance	Review Daily
Requirements	
Design	N/A
Specifications	

### 5.5.6 Sanitary Waste

## General

Temporary facilities shall be provided by the contractor for on-site use by employees.

### **Specific Pollution Prevention Practices**

TEMPORARY FACILITIES		
<b>Description:</b> Ten	<b>Description:</b> Temporary facilities shall be provided by the contractor.	
Installation	Temporary facilities will be installed at the beginning of the project. Facilities shall be positioned so that they are secure and will not be tipped or knocked over. Temporary facilities shall be located away from the waters of the U.S. and stormwater inlets and conveyances.	
Maintenance	Temporary facilities shall have routine inspections and shall be scheduled for	
Requirements	waste collection as needed.	
Design	N/A	
Specifications		

# 5.6 Washing of Applicators and Containers used for Stucco, Paint, Concrete, Form Release Oils, Cutting Compounds, or Other Materials

### General

Concrete washout areas shall be designated for the project. Should washout of paint of other materials be required, contractor shall direct wash water into leak-proof containers or lined pit designed so that no overflows can occur due to inadequate sizing or precipitation.

## **Specific Pollution Prevention Practices**

WASHOUT CONTAINER		
<ul> <li>Description: Contractor shall direct wash water into a leak-proof container or leak-proof and lined pit designed so that no overflows can occur due to inadequate sizing or precipitation.</li> <li>Contractor shall handle washout or cleanout wastes as follows:</li> <li>Contractor shall not dump liquid wastes in storm sewers or waters of the U.S.</li> <li>Contractor shall dispose of liquid wastes in accordance with applicable requirements in Part 2.3.3 of the 2022 CGP.</li> </ul>		
Installation	Washout container will be installed as required for the project. Any washout or cleanout activities will be located as far away as possible from the waters of the U.S. and stormwater inlets or conveyances, and, to the extent feasible, the contractor shall designated the washout areas to be used for washout or cleanout only.	
Maintenance Maintenance of the washout is to include removal of hardened concrete.  The facility shall have sufficient volume to contain all the concrete waste resulting from washout and a minimum freeboard of 1 foot. Facility shall not be filled beyond 95% capacity and shall be cleaned out once 75% full unless a new facility is constructed.		
Design Specifications	N/A	

## 5.7 Application of Fertilizers

### General

 Fertilizers will be used on the landscape areas throughout the project site. Contractor shall follow all regulations that apply to the use, handling, or disposal of fertilizers. Contractor shall store fertilizers in a dry, covered area and will take precautions to minimize the exposure of these chemicals to precipitation and to stormwater.

## **Specific Pollution Prevention Practices**

APPROPRIATE USE	
<b>Description:</b> Type and amount of fertilizer is to be determined by the final plantings	
determined for	the site.
Installation	Fertilizer shall be applied at the appropriate time of year to coincide as closely as possible to the period of maximum vegetation uptake and growth. Contractor shall apply fertilizer at a rate in amounts consistent with manufacturer's specifications. Contractor shall avoid applying fertilizers before heavy rains that could cause excess nutrients to be discharged. Contractor shall never apply fertilizers to frozen ground. Contractor shall never apply fertilizers to stormwater conveyance channels. Contractor shall follow all Federal, State, and Local requirements regarding fertilizer application.
Maintenance	N/A
Requirements	
Design	N/A
Specifications	

### 5.8 Other Pollution Prevention Practices

### General

• Contractor shall provide information below about any other pollution prevention practices that are implemented during construction that are not described above.

## SECTION 6: INSPECTION, MAINTENANCE, AND CORRECTIVE ACTION

## 6.1 Inspection Personnel and Procedures

## **Site Inspection Schedule**

Select the inspection frequency(ies) that applies, based on CGP Parts 4.2, 4.3, or 4.4

Standard Frequency:
□ Every 7 calendar days
☐ Every 14 calendar days and within 24 hours of either:
<ul> <li>A storm event that produces 0.25 inches or more of rain within a 24-hour period (including when there are multiple, smaller storms that alone produce less than 0.25 inches but together produce 0.25 inches or more in 24 hours), or</li> <li>A storm event that produces 0.25 inches or more of rain within a 24-hour period on the first day of a storm and continues to produce 0.25 inches or more of rain on subsequent days (you conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the last day of the storm that produces 0.25 inches or more of rain (i.e., only two inspections would be required for such a storm event)), or</li> <li>A discharge caused by snowmelt from a storm event that produces 3.25 inches or more of snow within a 24-hour period.</li> </ul>
Increased Frequency (if applicable):
For areas of sites discharging to sediment or nutrient-impaired waters or to waters designated as Tier 2, Tier 2.5, or Tier 3
☐ Every 7 days and within 24 hours of either:
<ul> <li>A storm event that produces 0.25 inches or more of rain within a 24-hour period, or</li> <li>A discharge caused by snowmelt from a storm event that produces 3.25 inches or more of snow within a 24-hour period.</li> </ul>
Reduced Frequency (if applicable)
For stabilized areas  Twice during first month, no more than 14 calendar days apart; then once per month after first month until permit coverage is terminated consistent with Part 9 in any area of your site where the stabilization steps in 2.2.14.a have been completed.
For stabilized areas on "linear construction sites" (as defined in Appendix A)
☐ Twice during first month, no more than 14 calendar days apart; then once more within 24 hours of a storm event that produces 0.25 inches or more of rain within a 24-hour period, or within 24 hours of a snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period
For arid, semi-arid, or drought-stricken areas during seasonally dry periods or during drought
☐ Once per month and within 24 hours of either:
<ul> <li>A storm event that produces 0.25 inches or more of rain within a 24-hour period, or</li> <li>A snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period.</li> </ul>
Insert beginning and ending month identified as the seasonally dry period for your area or the valid period of drought:  Beginning month of the seasonally dry period:  Ending month of the seasonally dry period:

For frozen conditions where construction activities are being conducted  Once per month		
Insert beginning and ending dates of frozen conditions on your site:  • Beginning date of frozen conditions: 12/15/2023  • Ending date of frozen conditions: 3/15/2024		
For frozen conditions where construction activities are suspended  Inspections are temporarily suspended		
Insert beginning and ending dates of frozen conditions on your site:  • Beginning date of frozen conditions: 12/15/2023  • Ending date of frozen conditions: 3/15/2024		

## **Dewatering Inspection Schedule**

Select the inspection frequency that applies based on CGP Part 4.3.2

Dewatering Inspection		
$\hfill \square$ Once per day on which the discharge of dewatering water occurs.		

## Rain Gauge Location (if applicable)

N/A

## **Inspection Report Forms**

See Appendix D for the inspection report form.

### 6.2 Corrective Action

## **Personnel Responsible for Corrective Actions**

The owner, Gordon Services Property Management, LLC, is responsible for corrective actions. The primary contact is Cody Gordon.

## **Corrective Action Logs**

See Appendix E for the corrective action form.

## 6.3 Delegation of Authority

## Duly Authorized Representative(s) or Position(s):

## SECTION 7: TURBIDITY BENCHMARK MONITORING FOR DEWATERING DISCHARGES

## **Procedures:**

Collecting and evaluating samples	N/A
Reporting results and keeping monitoring information records	N/A
Taking corrective action when necessary	N/A

**Turbidity Meter:** 

Type of turbidity meter	N/A

## Turbidity meter manuals and manufacturer instructions

N/A

Coordinating Arrangements for Turbidity Monitoring (if applicable):

	5 t 1 t 1 t 1 t 1 t 1 t 1 t 1 t 1 t 1 t
Permitted operator name	N/A
Permitted operator NPDES ID	N/A
Coordinating Arrangement	N/A

Alternate turbidity benchmark (if applicable):

Alternate turbidity benchmark (NTU)	N/A
Data and documentation used to request the	N/A
alternate benchmark	

### **SECTION 8: CERTIFICATION AND NOTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name:	Title:	
Signature:		Date:
	<del></del>	
Name:	_ Title:	
Signature:		Date:
Name:	Title:	
Signature:		Date:

## New Hampshire Natural Heritage Bureau NHB DataCheck Results Letter

To: Jeffrey Merritt, Granite Engineering, LLC

150 Dow Street Suite 421

Manchester, NH 03101

From: NH Natural Heritage Bureau

Date: 11/1/2022 (valid until 11/1/2023)

**Re:** Review by NH Natural Heritage Bureau of request submitted 10/26/2022 **Permits:** MUNICIPAL POR - Keene, Sullivan, NHDES - Alteration of Terrain Permit,

USEPA - Stormwater Pollution Prevention

NHB ID: NHB22-3432 Applicant: Jeffrey Merritt

**Location:** Keene and Sullivan

21 Route 9

Project

**Description:** Razing and renovating existing structures on property, expanding

current footprint for landscaping company operations.

The NH Natural Heritage database has been checked by staff of the NH Natural Heritage Bureau and/or the NH Nongame and Endangered Species Program for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government.

It was determined that, although there was a NHB record (e.g., rare wildlife, plant, and/or natural community) present in the vicinity, we do not expect that it will be impacted by the proposed project. This determination was made based on the project information submitted via the NHB Datacheck Tool on 10/26/2022 9:23:13 AM, and cannot be used for any other project.

Based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

