

Carla Nixon, AICP Planning Director Planning Department Town of Cumberland 290 Tuttle Road Cumberland, ME 04021 August 22, 2017

Preliminary Application - Major Subdivision and Site Plan
Higbee Notch Apartments

251 Gray Road
Cumberland, Maine
Cumberland Assessor's Map U21 Lot 18
Denise Morgan, Megan Morgan and Nathan Pelsinski

Dear Carla,

On behalf of Denise Morgan, Megan Morgan and Nathan Pelsinski, we are submitting 14 copies of the enclosed Application materials in support of a Preliminary Plan review for a new residential apartment site located at 251 Gray Road. We appreciated the opportunity to present the Sketch Plan for this site to the members of the Cumberland Planning Board on August 15, 2017.

As you know, as part of the Planning Board's discussions regarding the project at the Sketch Plan Review meeting, the members considered conducting a sitewalk. As part of their deliberations, the Planning Board concluded that a site visit was not necessary.

With the submittal of the enclosed Application materials, we are respectfully requesting placement on the Planning Board's upcoming agenda on September 19, 2017 for consideration of the enclosed Preliminary Application materials.

# **Project Overview**

As was presented during the Sketch Plan Review, the Applicants propose an 8 unit apartment site, which includes two four-unit buildings, to be constructed in two phases, on the Applicants' approximately 5.85 acre parcel, located at 251 Gray Road.

This phasing will allow construction of the first four-unit building upon receipt of all requisite approvals. The second building will be constructed at a later date, as part of the final phase of the project. The proposed apartments will be offered as market-rate rental units.

# **Landowner and Applicants**

As was discussed during the Planning Board's Sketch Plan review of the site, the record owner of the property is Denise Morgan, who purchased the property in April of 2017. A copy of Mrs. Morgan's deed is enclosed as evidence of ownership of the property.

Mrs. Morgan's daughter, Megan Morgan, and Nathan Pelsinski are proposing to construct the Apartments on the property. One of the apartment units will be Ms. Morgan and Mr. Pelsinski's home. As such, the three are co-applicants on the site.

# Project Name and Road Name

As was noted as part of the Sketch Plan review, the proposed Subdivision will be called Higbee Notch Subdivision. Higbee Notch Apartments will be offered as market rate units.

The Morgan family are long-term residents of Cumberland and have been involved in the Fire Department for decades. Both Ms. Morgan (an RN) and Mr. Pelsinski (a full time Firefighter) are Firefighter/EMTs and are active members of the Cumberland Fire Department. Both Ms. Morgan and Mr. Pelsinski were recently promoted to Lieutenants in the Cumberland Fire Department.

The name Higbee Notch was selected for the project name as it is unique and tied to their involvement with the Fire Department.

As was previously noted, a "Higbee Notch" refers to a guide used in the coupling on a fire hose. Based on a review of existing street names, it is expected that Higbee Lane will not be of concern from a Public Safety naming perspective.

#### **Consultants**

The applicants have assembled a well-established team of consultants to assist them in the design and permitting for their project as follows:

- St.Clair Associates-Land Surveying, Site Design and Local Permitting
- Mark Hampton Associates-Natural Resources, Soils and Septic Design
- Bill Bray of Traffic Solutions-Traffic

# **Technical and Financial Capability**

As noted above, the applicants have retained a team of professionals to assist them in the process of designing and permitting their new site. As previously noted, Mrs. Morgan currently owns the property and Ms. Morgan and Mr. Pelsinski will be constructing the site improvements in a series of two phases over the course of the upcoming years.

They have been working with their lender and builders to identify preliminary project budget costs associated with Phase 1, and have obtained the enclosed financial letter from their lender. This letter is provided for the Planning Staff's review as evidence of Financial Capacity.

# Zoning

As you know, the Applicants recently obtained a Zone Change to shift the VOC I/RR2 zone line which had split their property. With the Council's approval of the zone change, the site is now all located in Cumberland's VOC I (Village Office Commercial I) Zoning District, which allows multiplex dwellings.

The easterly end of the parcel abuts the Piscataqua River. There are mapped wetlands along the river which identify the limits of the Special Flood Hazard Area. The upland area within 250' of the wetlands along the River is subject to the Shoreland Overlay District. The limits of the mapped Shoreland Overlay District are shown on the enclosed Preliminary Plans. No work is proposed adjacent to the River, and all proposed buildings are located well outside of the requisite 100' building setback in the Shoreland Overlay.

As was discussed during the Planning Board meeting in August, although the property does have some frontage on Route 100, given the lot shape and terrain, the proposed new apartments are not expected to be visible from the Route 100 Corridor.

Since the buildings are not clearly visible from the U.S. Route 100 right-of-way, this project would not meet the applicability criteria for the Route 100 Design Standards. However, despite the fact that the buildings are not expected to be visible from Route 100, the Applicants have designed a project that addresses several aspects of the Route 100 Design Standards.

As the enclosed Plans demonstrate, to the extent practicable, the project has been designed fit into the existing site topography and generally focuses the development to areas that had been disturbed by the prior landowner. This offers a sizeable area of natural wooded open space on the site.

In addition, as the enclosed building elevations demonstrate, the proposed apartment units have been designed to reflect traditional New England construction materials and design elements. Shingled roofs, traditional double hung windows and siding reflect the general design elements in the community. Gable roof overhangs project over the front entry doors to each apartment unit. These overhangs provide smaller visual components that break up the front façade.

## **Parcel Overview**

The site is located off the easterly side of Gray Road (Route 100). The approximately 5.85 acre property is shown on Cumberland Assessor's Map U21 as Lot 18. As noted, the parcel is located in the VOC I Zoning District. It is generally "T" shaped, with the development area located approximately 300' easterly of Route 100.

The parcel has approximately 97.8 feet of frontage on Route 100. This strip of frontage extends approximately 300' off Route 100, to the point at which the parcel then widens out to approximately 475' to provide the proposed development area.

Thus, although the property does have some frontage on Route 100, given the nature of the parcel and the distance off the highway corridor to the development area, the proposed new residential multiplex buildings are not located proximate to Route 100.

As discussed above, the proposed new apartments are not expected to be visible from the Route 100 Corridor. Under the definitions contained in the Route 100 Design Standards, buildings that are not clearly visible from the U.S. Route 100 right-of-way would not meet the applicability criteria for the Route 100 Design Standards.

The easterly end of the parcel abuts the Piscataqua River. The mapped wetlands along the river identify the limits of the Special Flood Hazard Area. The upland area within 250' of the wetlands along the River is subject to the Shoreland Overlay District.

As the enclosed Plans demonstrate, the applicants are proposing some improvements in the Shoreland Overlay District; however, these improvements are outside of the 100' building setback, and at full build out remain well below the 20% allowable impervious area within the portion of the lot that is subject to Shoreland Overlay.

The Open Space for Stonegate Estates Subdivision is located to the east of the site, on the opposite side of the River. Residential properties are generally located to the north and south of the site, along Route 100. The homes on these abutting properties are located closer to Route 100 than the proposed new residences on the project site. For context, we have shown the approximate locations of the closest abutting residences on the Cover Sheet. These locations are based on aerial imagery.

As requested by the Planning Board during the Sketch Plan review, as part of our presentation to the Planning Board in September, we will also include an aerial photo of the site and the project vicinity.

# **Existing Conditions**

An Existing Condition Survey has been completed by St.Clair Associates and is included as part of this Preliminary Plan submission package. The topographic data shown on the site is based on a combination of limited field survey conducted by our office in 2017 (within the previously disturbed areas of the site) coupled with LIDAR topographic data in the areas that had not been previously cleared on the site.

In 2000, a perimeter Boundary Survey had been completed on the site, by others, for a prior landowner. This prior survey information was reviewed, the research was updated, and field work was conducted to recover and tie into the existing property Monumentation to establish the boundary information shown on the enclosed Existing Condition Plan.

As the Survey demonstrates, the approximately 5.85 acre property has a relatively small amount of frontage along Route 100 (Gray Road), while the primary development area is located roughly 300' off Route 100. As discussed above, the easterly property line is formed by the meandering Piscataqua River.

The old Interurban Rail line previously crossed the lower portion of the site, generally parallel to the River. The relatively level area is evident across the site, but no rails or other features of this abandoned facility remain. As discussed during the Sketch Plan review, based on our site observations there are no well-defined trails through the site that demonstrate recent activity.

The prior landowners had begun construction of an access road to the rear of the site by doing some site clearing and filling. The approximate extent of the prior clearing is shown on the enclosed plans. The remainder of the site is wooded with a mix of evergreen and deciduous trees.

As was presented as part of the Sketch Plan review, there is an approximately 46' total change in elevation from the highest point of the site, located at the Route 100 frontage, to the lowest point of the site at the River. The primary development area is situated roughly 16'-20' below the elevation of the site's entrance at Route 100.

There is an outcrop of ledge in the development area that has been integrated into the site design. The extent of existing subsurface bedrock is not fully known at present. However, test pits have been conducted in the general location of the proposed access drive and the primary development area for the new buildings and parking.

Based on these test pits, and the proposed site grading, it is expected that the buildings and site improvements can generally be constructed with little risk of encountering extensive ledge. The applicant's goal is to avoid the need to do extensive ledge excavation.

Mark Hampton Associates has conducted a Natural Resource evaluation of the site, which includes a Wetland Delineation and Vernal Pool assessment of the site during this year's breeding season. Mr. Hampton's Wetland letter and Vernal Pool Letter are enclosed.

The wetland areas delineated by Mr. Hampton are shown on the enclosed plans. As these plans demonstrate, the wetland areas located on the site are primarily along the easterly property limits and include areas adjacent to the Piscataqua River.

There is also a pocketed wetland area on the southeasterly corner of the site that was presumably created by an impoundment associated with the old Interurban rail line. The mapped wetland areas are shown on the enclosed plans, based on GPS data provided by Mr. Hampton.

Mr. Hampton's Vernal Pool Assessment specifically observed the impounded wetland area for the potential presence of indicator species for identification of a Vernal Pool. As Mr. Hampton's letter report indicates, he visited the site on five occasions during a six week period during the breeding season and found no Vernal Pools.

# **Development Description**

As noted, the Applicants propose an 8 unit apartment site, which includes two fourunit buildings, to be constructed in two phases, on the Applicants' approximately 5.85 acre parcel. The apartments will be offered as market-rate units.

As the plans demonstrate, the Applicants have established a development approach that provides a site layout and design features that are compatible with the natural setting, and offer a unified approach to the building and site plan. The site has been designed to offer a simple layout with convenient access to each individual apartment, while allowing large portions of the site to remain open and in their natural state. This provides an extensive buffer and ample area for the residents to enjoy the setting along the river.

The enclosed Plans focus the site improvements to the central portion of the property, allowing for larger open areas around the perimeter of the site. The short section of roadway, with a hammerhead turn-around and the proposed shared driveway also reduces the overall extent of sitework and land disturbance necessary to provide access to the apartment units.

As the enclosed plans demonstrate, the Applicants are proposing to divide the approximately 5.85 acre site into two lots, in order to accommodate project phasing and financing. This will allow construction of the first four-unit building upon receipt of all requisite approvals. The second building will be constructed at a later date, as part of the final phase of the project.

Both lots will have frontage on a proposed 50' wide right of way off Route 100, called Higbee Lane. As was discussed during the Planning Board meeting, the proposed Higbee Lane is a short section of paved roadway off of Route 100, which will provide the requisite minimum 75' of frontage for each lot. A hammerhead turn-around is provided at the end of the proposed roadway.

From the terminus of the right of way, a shared private gravel driveway will provide access to the 8 new market-rate apartments.

# Proposed Apartment Buildings

One four-unit apartment building is proposed on each of the two lots. Each building will be two stories tall with four apartments within it. The apartments also have provisions for daylight basements based on the site grading.

The proposed building has been designed by the Applicants in conjunction with Graiver Homes, the intended builder for the site. Preliminary Floor Plans and Building Elevations are included in this Application package. The architectural style of the buildings includes two stories and generally reflects a townhouse style building.

As the enclosed plans demonstrate, each two-story apartment unit will include a total of approximately 1,100 sf of finished living space on the first and second floors. This area does not include any basement space, and well exceeds the requisite minimum of 600 sf cited in the Ordinance for multiplex dwellings. There are no proposed shared hallways or stairways for the units. Each unit is independent of the other. As the building Plans and Elevations also demonstrate, each unit will have its own deck area for residents' outdoor use.

Unit 1 of Building 1 will be home to Ms. Morgan and Mr. Pelsinski and will include a two bedroom unit, with provisions for a possible future garage beneath their unit. Three additional two-bedroom apartment units will be included in Building 1 as well. Building 2 will include four two-bedroom units.

This brings a total number of apartments proposed on the site to 8, with a total of 16 bedrooms on the property. As shown on the enclosed Plans, based on the Density calculations in the VOC I zone, this site can support up to 21 bedrooms. As such, the project is well within the density standards for this Zoning District.

As requested during the Sketch Plan presentation, the Applicants have considered either placing a restriction on the site to limit the project to a maximum of 16 bedrooms as proposed, or to identify areas of Open Space that will remain undisturbed.

In accordance with the Ordinance standards for multiplex dwellings, 50% of the parcel must be set aside as Open Space for use as recreational, agricultural or other outdoor living purposes and for preserving natural features. As shown on the enclosed Plans, the easterly portion of the site has been identified as proposed Open Space and slightly exceeds 50% of the parcel area.

# Site Access and Layout

The proposed Highee Lane will be constructed as a short right of way and will provide access to the two lots. This roadway is located within a proposed 50' wide right of way that will terminate in a hammerhead, approximately 105' off Route 100. The proposed Highee Lane will be constructed at 22' wide, with open swales (approximately 24" deep minimum) on either side.

The ditch depth along Higbee Lane has been increased above the 12" minimum to provide open drainage of the approximately 21" deep roadway section, in lieu of installation of underdrains within the roadway section.

As noted during our presentation to the Planning Board as part of the Sketch Plan review of the site, the Applicants are respectfully requesting a waiver of the Cumberland Ordinance criteria for underdrains beneath this approximately 105' long roadway, given the available vertical relief on the site, and the grading associated with the construction of the shared gravel driveway to access the apartment units.

From the terminus of Higbee Lane, a 22' wide shared gravel access drive will extend approximately 204' to the proposed location of the parking area for the two four-unit apartment buildings. This shared gravel driveway will be located in an access easement on both of the proposed lots.

The prior landowner had secured an MDOT Entrance Permit for the access off Route 100. As we discussed during the Sketch Plan review of the site, the applicants will be coordinating with MDOT to reapprove this access, as the prior landowner's permit has expired.

## Traffic Assessment

As was presented during the Sketch Plan review, the applicants have coordinated with Bill Bray of Traffic Solutions to obtain a letter regarding the anticipated Trip Generation associated with the project and to evaluate sight distance at the proposed entrance off of Route 100. A copy of Mr. Bray's Traffic Assessment is enclosed.

Based on Mr. Bray's recommendations, the entrance has been located at the northerly end of the site's frontage. At the intersection of Route 100, the average grade along Higbee Lane is expected to be approximately 1% to accommodate vehicle access. This allows for an intersection that is generally level with Route 100.

# Site Grading

The two new four unit apartment buildings are located in the central portion of the site, generally within the area that had previously been filled and cleared by the prior landowner. As previously noted, there is an approximately 16'-20' change in elevation from the entrance at Route 100 to the building area. This change in elevation aids in buffering the views between the site and adjacent properties and allows for building placement well above the river elevation.

In order to accommodate this grade change to access the location of the proposed Apartments on the site, the proposed gravel access drive off Highee Lane has been designed with an average grade of slightly more than 7% for the majority of its length.

In order to access the area of the proposed new apartments, a slight curve has been introduced to better center the gravel access drive between the two new buildings. This gentle curve will add visual interest to the driveway and will provide a nice approach to the proposed new homes.

In the area of the proposed Apartment Buildings 1 and 2, the average grades generally range between 1 and 3 percent to accommodate parking and maneuvering areas adjacent to the buildings. As the enclosed Sketch Plan demonstrates, the applicants are proposing pavement in the parking areas adjacent to the two buildings, but the access drive will remain gravel within the parking aisle.

# **Parking**

Parking is provided for each unit at a ratio of two spaces per unit. This equates to a total of 16 parking spaces on the site. Parking has been designed to be proximate to each building to the extent practicable. As recommended by your office, an additional paved area is proposed at the southeasterly end of the parking to provide a turn around. This area will be striped to delineate the turn-around and no parking will be allowed in this spot.

As noted above, the actual parking spaces will be paved, but the shared access driveway and central maneuvering area will be gravel. An approximately 5' wide grassed/landscaped strip is proposed along each building front. A 5' wide paved walkway is also proposed along the frontage of each building to provide pedestrian access to each apartment. This layout provides a minimum of 10' separation of the parking areas from the buildings.

#### Utilities

Each of the two proposed buildings on the site will be serviced by their own individual well and on-site septic disposal system on each lot.

As the enclosed plans demonstrate, overhead power, telephone and cable lines will be extended from Route 100 to a drop pole within the site. From the drop pole, services will be provided underground for each building. Above ground propane tanks will be installed, one for each building.

Mark Hampton Associates has conducted test pits on each lot to accommodate individual subsurface disposal systems for both apartment buildings. Mr. Hampton's test pit logs are enclosed. These test pits are shown on the enclosed plans. Based on the Maine Subsurface Wastewater Disposal Rules for Multifamily Dwelling units, the anticipated design capacity for each subsurface disposal system is calculated at a rate of 90 gpd per bedroom. For each proposed 4 unit apartment building (each containing a total of 8 bedrooms), this equates to an anticipated design capacity of 720 gpd for each of the two proposed subsurface disposal systems.

Although the applicants have provided the test pit data for each new subsurface disposal system, the applicants request that the requirement for a Nitrate Study for this site be waived, given the centralized site layout and the setting.

Individual wells will be drilled for each building at the time of construction. These wells will need to comply with the setback criteria from subsurface disposal systems on each site. Given the lot sizes, it is anticipated that sufficient well locations are available on each lot to accommodate the two proposed new buildings.

As previously noted, there is an existing public fire hydrant on Route 100, located approximately 840' from the project site. Given the proximity of the existing hydrant, building sprinkler systems are not required.

## Solid Waste

As was discussed during the Sketch Plan presentation, residents will be required to bring their trash to the end of Higbee Lane at Route 100 for weekly municipal collection, similar to other residential properties and multiplex developments in the area. No on-site dumpster is proposed.

In response to the Planning Board's comments regarding weekly municipal trash collection at the Route 100 frontage, the residents' trash and recyclables will be placed off the southeast corner of the turn-around at Higbee Lane on the designated weekly pick-up day. This location is approximately 100' off Route 100.

The Applicants propose to offer an easement to the municipality to allow the waste hauler to use Higbee Lane for weekly collection. It is our understanding that this has been successfully accommodated on other sites in the community. This agreement will allow the waste hauler to enter Higbee Lane, collect the residents' waste from the designated spot, and turn around using the hammerhead in Higbee Lane in order to exit back onto Route 100 and continue their normal collection route.

# Snow Storage

With the layout of the pavement on the site, the most likely areas for snow storage are off the easterly end of the parking area, as well as along the sides of the gravel access drive. Given the limited extent of pavement in the context of available open areas on the site, the need to accommodate snow storage can easily be met, even during larger storm events.

# Landscaping

The Applicants have sited the buildings on the property to provide a layout that accommodates the changes in grade on the site and allows for preservation of large wooded and natural areas along the easterly end of the site, as well as additional areas along the northerly and southerly sides of the buildings. These perimeter vegetated areas will aid in fitting the proposed new buildings into the overall site.

As the enclosed plans and elevations demonstrate, each proposed four-unit building is two stories tall and has a base dimension of approximately 80' wide by 28' deep. This building scale is similar some single family residences that have been built in the community.

As such, foundation plantings along the fronts of each building are anticipated, similar to a typical residential building construction, but a formal Landscaping Plan prepared by a Landscape Architect is not proposed. As noted, extensive areas of the site will be left in their natural state which will supplement the proposed plantings around the two proposed buildings.

The applicant is hereby respectfully requesting a waiver of the requirement for a formal Landscape Design Plan. We would appreciate the opportunity to coordinate with your office directly for recommendations for appropriate foundation plantings for each building.

# Lighting and Signage

The two proposed new buildings will include building mounted lighting at doorway entrances, similar to any residential home. No pole mounted lights are proposed. Residential scale lighting fixtures will be similar to those found on homes in the area. The fixtures will be shielded to direct the light downward to reduce potential sky glow. Given the limited nature of the site lighting program, the applicant is requesting a waiver of the requirement for a formal Site Lighting and Photometric Plan.

A "Stop" sign is proposed at the intersection of Higbee Lane and Route 100. No project signage is proposed, but each building and unit will be numbered based on Public Safety requirements.

# **Project Phasing**

As noted above, Building 1 will be home to Ms. Morgan and Mr. Pelsinski. Building 1 will be constructed at the onset and will allow the applicants to reside on the property. The proposed Higbee Lane, the 22' wide shared gravel access driveway and eight parking spaces associated with Building 1 will be constructed as part of Phase 1, as well as the well and septic system and underground utilities for Building 1. The gravel turning and maneuvering area between the parking spaces for Buildings 1 and 2 will be constructed at its full width as part of Phase 1. It is expected that Phase 1 will be completed within 1 to 2 years of project approval.

Phase 2 of the project will include the construction of Building 2 and its eight associated parking spaces and associated site improvements (i.e. well and septic, and building services) on Lot 2.

As was discussed during the Sketch Plan presentation, Phase 2 has been proposed to begin within up to 3 to 5 years after Building 1 is constructed. We would like to work with staff and the Planning Board to identify the maximum allowable time limits available through project phasing and appropriate Ordinance provisions. The timing of Phase 2 is dependent on the rental occupancy of the units in Phase 1.

# Agency Reviews and State Correspondence

As part of our preparation of the enclosed local Application materials, our office has contacted the following State Agencies to seek information regarding the site from their databases:

# Maine Department of Inland Fisheries and Wildlife (MDIF&W)

A copy of MDIF&W's response letter is enclosed as part of this application package. As the letter indicates, the MDIF&W has not mapped any Essential or Significant Wildlife Habitats that would be directly affected by this project.

The letter does mention bat species that may be in the area during the migration and or breeding season. It is expected that any tree clearing will be conducted outside of the typical bat breeding season (June 1<sup>st</sup> to July 30<sup>th</sup>) – this has been the typical restriction recently placed on sites by the US Fish and Wildlife Service for the Northern Long Eared Bat. As the MDIF&W letter indicates, otherwise, the agency does not anticipate significant impacts to any of the bat species as a result of this project.

# Maine Natural Areas Program (MNAP)

A copy of the MNAP response letter is enclosed as part of this application package. As the letter indicates, the MNAP staff searched the Natural Areas Program's Biological and Conservation Data System files in response to our request for information on the presence of rare or unique botanical features documented from the vicinity of the project in Cumberland, Maine. As the letter notes, rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Their review involved examining maps, records, and other sources of information including the personal knowledge of the MNAP staff or other experts.

Their letter indicates that according to the information currently in their Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area.

# Maine Historic Preservation Commission (MHPC)

A copy of MHPC's response letter is enclosed as part of this application package.

As was discussed during the Sketch Plan presentation for the site, our office contacted the MHPC to seek information regarding the site and to identify whether there were any known historic or archaeological resources on the site or in the vicinity that would be affected by the proposed new apartments.

Their letter notes that there will be no architectural or historic archaeological resources affected by this project.

However, their response indicates that based on their predictive model of archaeological site location (glacial outwash soils and proximity to a stream), the project area may contain prehistoric archaeological resources, and they recommend a Phase 1 Archaeological Survey be conducted on this parcel.

Typically these requests by the MHPC are encountered as part of a Maine Department of Environmental Protection (MDEP) Site Location Review for much larger projects, in which the MHPC must sign off on the site prior to the MDEP issuing its permit. In those cases, since two State Agencies (i.e. MDEP and MHPC) are involved, it has been our experience that the MDEP requires a MHPC sign off prior to issuance of a Site Location Permit.

In reviewing correspondence we received from the MHPC on another site that was reviewed under the MDEP Site Location process, that letter stated that a Phase I Archaeological Survey "will be necessary" for that project (that project triggered the study for the same reasons as this site – the site was identified based on their predictive model for the soil conditions and its setting by a river).

After further discussions with your office, it is our understanding that the Town will not require a formal Phase 1 Prehistoric Archaeological Investigation of the site, but you recommended that our office reach out to the Town's Library Director, Thomas Bennett (who is an archaeologist) to seek his input. Mr. Bennett is the local historian in charge of these types of resources that may occur in the community. Mr. Bennett has agreed to visit the site with the Applicants to walk the property in light of the recommendations from the MHPC. That sitewalk is scheduled to occur tomorrow, August 23, 2017.

As part of our upcoming presentation to the Planning Board, our office will share Mr. Bennett's observations of the site. As you know, the Applicants have indicated they would be willing to be participants (under Mr. Bennett's guidance) in doing further site study, if needed.

# CMP Ability to Serve Letter

As part of the assembly of the enclosed Application materials, we have also contacted Central Maine Power Company (CMP) to request an ability to serve letter. A copy of this letter is enclosed. As the letter indicates, CMP has the capacity to serve the proposed development.

#### **State Level Permits**

#### MDEP Stormwater Permit

The site is within the watershed of the Piscataqua River. Which is not an urban impaired watershed.

The proposed construction of Higbee Lane, the proposed gravel access driveway and the proposed parking and maneuvering areas, along with the building's rooftops for the full build out of the project are expected to create approximately 17,741 sf (0.41 ac) of impervious area on the site. It is expected that the developed areas on the site will encompass approximately 64,116 sf (1.47 acres).

Since the proposed developed area exceeds one acre, the project triggers the threshold for which MDEP Stormwater Permitting is required.

Since the site is not located in an urban impaired watershed, and the overall impervious area of the site is well below one acre, the project is required to meet only the Basic Standards, and is not required to address the MDEP Chapter 500 Standards for Stormwater Quality or Quantity.

Given the project size, the project qualifies under the MDEP Chapter 500 standards for a Stormwater Permit by Rule, which includes a 14 day review period.

Given the limited timeframe associated with the MDEP PBR review, this State level application will be filed prior to the Planning Board's scheduled Final project review, allowing for any changes to be implemented based on the local Preliminary review process.

# MDEP Natural Resources Protection Act (MDEP NRPA)

As the enclosed plans demonstrate, there are no proposed wetland fills on the site and the proposed limits of improvements are well in excess of 100' from the River and its associated wetlands. As such, no MDEP NRPA permits are anticipated.

# **Stormwater Overview-Waiver Request**

# Existing Conditions

As noted, the site is within the watershed of the Piscataqua River. Which is not an urban impaired watershed.

There is an approximately 46' change in grade from the highest contour on the site (at Route 100) to the lowest areas on the site (along the River). Given the topography of the lot, runoff from the site flows generally in an easterly direction toward the River. Wetlands have been identified on the lower sections of the site, adjacent to the River. No wetland impacts are proposed and no work is proposed within 100' of the River.

There is a large rock outcrop located centrally within the site. There is a central ridge on the site, in the vicinity of this outcrop. Although the full extent of subsurface bedrock is not known on the site, test pits excavated in the proposed development area suggest that the site design can be achieved with a relatively low risk of encountering the need to blast bedrock.

On the easterly end of the site, there is a slightly elevated level area which is evidence of the former Interurban railroad that once crossed the site. The former bed of the Interurban railroad appears to have created an impoundment that has also been identified as a wetland. As discussed during the Sketch Plan review, it does not appear that the bed of the old Interurban rail line has been actively used as a site trail, as evidenced by the extent of vegetation in the area. No other site trails were observed.

The site is primarily wooded with a mix of evergreen and deciduous trees. There is a cleared area on the site where the prior landowner began construction of an access off of Route 100, which included the placement of fill on the site. Evidence of prior site fills extend through the approximately 300' long strip of the property from Route 100 to the central development area (i.e. generally along the proposed entrance drive).

Test pit information indicates that there is a mix of fill and native soils in the central development area. From this location the site slopes off in a general easterly direction towards the river. The limits of fill on the site are evidenced by the clearing limits. The site topography also drops off to the north and south away from the primary development area.

Passing soils for proposed septic systems have been located in the wooded areas of the site where no apparent prior site disturbance has occurred. This allows the construction of the septic systems on native soils.

# Proposed Site Improvements

The enclosed Plans show the proposed site layout, which includes the construction of a short section of a paved roadway to provide access to the two new four-unit apartment buildings on the site. Parking will be provided on site for a total of 16 parking spaces. A paved turn around area has been added at the southeasterly corner of the parking area.

Each four unit building is a minimum of 80' wide by 28' deep. The base building sizes are similar in nature to the scale of some single-family homes constructed in the community.

The site is located generally downstream from the abutting properties and discharges to the existing wetlands along the Piscataqua River. Given that the downstream receiving area is the river itself, it is anticipated that there is sufficient capacity to handle any slight increases in post-development discharge associated with these limited site improvements, and that discharge from this site, ahead of the arrival of upstream runoff is preferred in the overall watershed. The natural treatment provided by the existing wooded areas within 100' of the river provide for some degree of attenuation and water quality enhancement prior to discharge to the downstream receiving areas. As noted, the area within 100' of the river is identified as Open Space that will not be further developed.

The proposed construction of Higbee Lane, the proposed gravel access driveway and the proposed parking and maneuvering areas, along with the building's rooftops for the full build out of the project are expected to create approximately 17,741 sf (0.41 ac) of new impervious area on the site.

Based on the enclosed site grading design, it is expected that the developed areas on the site will encompass approximately 64,116 sf (1.47 acres). This area also includes the areas necessary to construct the subsurface disposal areas for each building.

Since the proposed developed area exceeds one acre, the project triggers the threshold for which MDEP Stormwater Permitting is required.

Since the site is not located in an urban impaired watershed, and the overall impervious area of the site is below one acre, the project is required to meet only the Basic Standards. The project is not required to address the General Standards or Flooding Standards under MDEP's Chapter 500 Stormwater Standards. Given the project size, the project qualifies under the MDEP Chapter 500 standards for a Stormwater Permit by Rule.

Given the fact that the MDEP will not require provisions to meet the General Standards (i.e. stormwater treatment) or the Flooding Standard (i.e. evaluation of prevs. post-development peak discharges), the Applicant is respectfully requesting that this project provide local review materials consistent with the MDEP requirements.

Accordingly, the Applicants are respectfully requesting a waiver of submittal of a formal Stormwater Evaluation and Pre-and Post-development Stormwater Modeling calculations.

#### **Erosion and Sediment Control**

During construction, a stabilized construction entrance will be installed in the location of the entrance to Higbee Lane avoid tracking onto Route 100.

In addition, silt fence or an erosion control mix berm will be installed around the perimeter of the proposed limits of site disturbance. Paved areas will not be curbed, allowing sheet flow to the perimeter loamed and seeded areas and eventually to the existing wooded areas of the site. Stone check dams will be installed at approximately 14' intervals in the ditches along both sides of the proposed Higbee Lane and the shared access drive to trap sediments close to their source. These permanent stone check dams will remain in place and can be easily maintained as part of the routine upkeep of the site and its shared access drive.

As the enclosed Plans Demonstrate, the site grading has been designed to divert the drainage swales from each side of Higbee Lane, to the rear of each building and across the site in a general easterly direction over the natural terrain of the property. These swales will disperse over the site and will be afforded a degree of natural treatment and dispersion through the wooded areas on the site. Care has been taken to avoid piped outlets and point discharges. The flow of the ditch runoff to the natural areas located centrally within the site allows for the existing vegetation to aid in additional sediment removal and reduction of flow velocities before reaching the site outlet at the River.

Given the setting and the limited sitework program for the proposed improvements, the applicant is requesting a waiver of preparation and submittal of a separate formal Erosion and Sediment Control Narrative to supplement the Erosion and Sediment Control Notes and Details provided on the enclosed Plans. Placement of these instructions directly on the Plans helps insure that the Erosion and Sediment Control information is readily available to the contractor in the field during construction.

The Erosion and Sediment Control Notes and Details included in the enclosed Plans provide detailed instructions for the contractor for proper protection of the site during construction. The Plans include instructions for items such as permanent and temporary erosion control measures, seeding and mulching (including provisions for winter construction) and other provisions for site stabilization. These notes and details are based on the MDEP's Erosion and Sediment Control Handbook.

As evidenced by the enclosed Plans and the description above, the waiver request is only in association with preparation of a formal separate Erosion and Sediment Control Narrative. The Applicants are respectfully requesting that the Erosion and Sediment Control information shown on the Plans, including detailed contractor instructions included on the Detail sheets as well as the respective Details themselves be considered sufficient in lieu of submittal of a separate Erosion and Sediment Control Narrative.

# Requested Waivers

The Applicants are requesting waivers of the following items (please note, the narratives included herein provide further discussions relative to these waivers):

• Underdrains in the approximately 105' long Higbee Lane - As discussed herein and as shown on the enclosed plans, the ditch depth along Higbee Lane has been increased to approximately 24" to provide surface drainage to the entire road section. The typical roadway section noted in the Ordinance includes relatively shallow ditches (approximately 12" deep) and underdrains to drain the road section. Given the setting and the site's vertical relief, the deepened ditch section will allow the entire approximately 21" thick roadway section of Higbee Lane to drain to daylight, since the ditch depth will be below the roadway subgrade elevation. As such, the Applicants are respectfully requesting that deepened ditches be permitted in lieu of installation of underdrains along the roadway.

• Nitrate Study – Based on the Maine Subsurface Wastewater Disposal Rules for Multifamily Dwelling units, the anticipated design capacity for each subsurface disposal system is calculated at a rate of 90 gpd per bedroom. Thus, for each proposed 4 unit apartment building (each containing a total of 8 bedrooms), the anticipated design capacity of the subsurface disposal system would be 720 gpd. This is well below the 2,000 gpd threshold for which an engineered system design is required.

Individual wells will be drilled for each building at the time of construction. These wells will need to comply with the setback criteria from subsurface disposal systems. Given the lot sizes, it is anticipated that sufficient well locations are available on each lot to accommodate the apartment buildings.

Given the centralized site layout and the setting, coupled with the relatively small system sizes in the context of the overall site size, the applicants are respectfully requesting a waiver on a Nitrate Study for the project. In addition, based on the surface terrain, it is anticipated that the groundwater flows in the areas beneath the subsurface disposal systems will generally flow toward the wetlands within the site along the river, and not affect the abutting properties located upstream of the site.

• Landscape Plan - The applicant is hereby respectfully requesting a waiver of the requirement for a formal Landscape Design Plan. As noted, foundation plantings along the fronts of each building are anticipated, similar to a typical residential building construction, but a formal Landscaping Plan prepared by a Landscape Architect is not proposed. Extensive areas of the site will be left in their natural state which will supplement the proposed plantings around the apartment buildings.

We would appreciate the opportunity to coordinate directly with your office to implement recommendations for appropriate foundation plantings for each building, in lieu of submittal of a formal Landscape Plan.

• **Lighting/Photometric Plan** – As we discussed during the Sketch Plan review process, the two proposed new buildings will include building mounted residential scale lighting fixtures at doorway entrances, similar to any residential home. No pole mounted lights are proposed. The fixtures will be shielded to

direct the light downward to reduce potential sky glow. Given the limited nature of the site lighting program, the applicant is respectfully requesting a waiver of the requirement for a formal Site Lighting and Photometric Plan.

• Stormwater Management - Since the site is not located in an urban impaired watershed, and the overall impervious area of the site is below one acre, the project is required by the MDEP to meet only the Basic Standards (i.e. provisions for General Housekeeping and Erosion and Sediment Control Measures). The project is not required to address the General Standards (i.e. Water Quality Treatment) or Flooding Standards (i.e. Pre- and Post-Development Stormwater Modeling) under MDEP's Chapter 500 Stormwater Standards. Given the project size, the project qualifies under the MDEP Chapter 500 standards for a Stormwater Permit by Rule.

Given the fact that the MDEP will not require provisions to meet the General Standards or the Flooding Standard, the Applicant is respectfully requesting that this project provide local review materials consistent with the MDEP requirements. Accordingly, the Applicants are respectfully requesting a waiver of submittal of a formal Stormwater Evaluation and Pre-and Post-development Stormwater Modeling calculations.

• Separate Erosion Control Plan Narrative – As noted, the applicant is requesting a waiver of preparation and submittal of a separate formal Erosion and Sediment Control Narrative to supplement the Erosion and Sediment Control Notes and Details already provided on the enclosed Plans. It is important to note that this waiver request is only in association with preparation of a formal separate Erosion and Sediment Control Narrative.

Placement of these instructions directly on the Plans helps insure that the Erosion and Sediment Control information is readily available to the contractor in the field during construction. These notes and details are based on the MDEP's Erosion and Sediment Control Handbook.

The Applicants are respectfully requesting that the Erosion and Sediment Control information shown on the Plans, including detailed contractor instructions shown on the Detail sheets (as well as the respective Details themselves) be considered sufficient in lieu of submittal of a separate Erosion and Sediment Control Narrative.

# **Supporting Materials**

In addition to this Cover letter, we have enclosed the following:

- Planning Board Site Plan Review Application Form (Appendix C)
- Major Subdivision Checklist
- Copy of Deed for Property
- Financial Capacity Letter
- Mark Hampton's Wetland letter and Vernal Pool Letter
- Traffic Solutions' Traffic Assessment
- Mark Hampton's Test Pit Logs for Subsurface Disposal Systems
- Agency Response Letters:
  - o Maine Department of Inland Fisheries and Wildlife
  - o Maine Natural Areas Program
  - o Maine Historic Preservation Commission
  - o Central Maine Power Company
- Preliminary Plan set showing the proposed two new four-unit apartment buildings
- Building Elevations and Floor Plans
- Check for the Application Fee

# Closure

With the submittal of the information contained herein, we respectfully request your consideration of this material for placement on the Planning Board's September 19th Planning Board agenda for Preliminary Plan review.

On behalf of Denise Morgan, Megan Morgan and Nathan Pelsinski, we look forward to the opportunity to continue our discussions on this matter with you and the other municipal staff members and peer reviewers as you conduct your review of the enclosed materials.

In the interim, if you have any questions or comments, or require any additional information, please do not hesitate to contact me. We would appreciate the opportunity to meet with you and review the enclosed application materials in further detail.

We look forward to hearing from you.

Sincerely,

ST.CLAIR ASSOCIATES

Nancy J. St. Clair, P.E.,

Vice President

NJS/njs

Encl.

C: Denise Morgan, Megan Morgan and Nathan Pelsinski

# APPENDIX "C"

# PLANNING BOARD SITE PLAN REVIEW APPLICATION

Applicant's Name:			
Applicant's Address:_			
Cell Phone:	Home Phone	Office Phone	
Project Address			
Project Name			
Describe Project			
Number of employees			
Days and Hours of ope	eration		
Project Review and No	otice Fee		
Name of Representativ	/e:		
Contact Information: (	Cell:	Office:	
PLEASE SUBMIT 15	5 COPIES OF ENTIRE S	UBMISSION PACKET	
		SCHEDULED PLANNING BOA THE 3 <sup>RD</sup> TUESDAY OF EACH	
	s interest in the property? Purchase and Sale as	greement (provide copy o	f document)
<b>Boundary Survey</b> Submitted?: yes	no		
Are there any deed res show easement locatio	<u> </u>	s noIf yes, provide information	ation and
Building Information Are there existing build Will they be removed? prior to demolition)	dings on the site? yes	no Number: (note: a demolition permit is requi	red 10 days
	be built on the site? yes		
Number of new building Square footageNumber of floor levels			

Parking:
Number of existing parking spaces
Number of new parking spaces
Number of handicapped spaces
Entrance:
Location:
WidthLength
Width Length if not, do you plan to paved it?
Where will snow storage for entrance and parking be located? Show on site plan.
Utilities:
Water: Public Water Well (Show location on site plan)
Sewer/Septic: Public sewer Private septic (Show location on site plan and submit HHE-200 septic design or location of passing test pit locations if new system is proposed. Also show any wells on abutting properties within 200' of the site.
Electric: On site? yes no  Show location of existing and proposed utilities on the site plan and indicate if they are above or below ground.
Signs: Number: Size:  Material: Submit sign design and completed sign application.
Will the sign be lighted? Submit information on type and wattage of lights. Show location of sign(s) on the site plan.
Natural Features: Show location of any of the following on the site plan: river stream wetland pond lake stone walls are there any other historic or natural features?
<b>Lighting:</b> Will there be any exterior lights? yes no Show location on site plan (e.g., pole fixtures, wall packs on building) and provide fixture and lumen information and photometric plan.
Trees: Show location of existing trees on the site plan and indicate if any are to be removed.
Landscaping:  Is there existing landscaping on the site? yes no Show type and location on site plan.  Is new landscaping proposed? (Note: if property has frontage on Route 100, a 25' landscape easement to the Town is required)

**Buffering:** Show any existing or proposed buffering measures for adjacent properties, e.g., plantings, fences.

Erosion Control:  Has an erosion and sedimentation control plan been submitted: yes no
Stormwater Management Plan Provided stormwater information for both pre and post development of the site. Show location of any detention areas and/or culverts on the site plan.
Fire Protection  Location of nearest hydrant sprinklers? yes no  Do you plan to have an alarm system? yes no Please contact the Fire  Department at 829-4573 to discuss any town or state requirements (829-4573)
Trash Will trash be stored inside outside If outside, will a dumpster be used? yes no Show location on site plan and show type of screening proposed (e.g., fencing, plantings)
<b>Technical Capacity</b> List and provide contact information for all consultants who worked on the project, for example: licensed land surveyor, licensed soils evaluator, professional engineer, attorney, etc
Financial Capacity Please indicate how project will be financed. If obtaining a bank loan, provide a letter from the bank
Zoning District:
Minimum Lot Size: Classification of proposed use:
Parcel Size:Frontage:
Setbacks: Front Side Rear
Is Board of Appeals Required?
Tax Map Lot Deed Book Deed Page
Floodplain map number Designation

Vernal Pool Identified? NO
Is parcel in a subdivision?
Outside Agency Permits Required:  MDEP Tier 1 MDEP Tier 2 Army Corps of Engineers
MDEP General Construction (stormwater) Permit (for disturbance of 1 acre or more) X
MDOT Entrance Permit_X_
MDOT Traffic Movement Permit
Traffic Study Required X
Hydrogeologic Evaluation
Market Study
Route 1 Design Guidelines?
Route 100, VMU, or TCD Design Standards? N/A
Applicant's Signature The American
Submission Date: July 25, 2017



# PLANNING DEPARTMENT TOWN OF CUMBERLAND, MAINE

#### Dear Subdivision Applicant:

It is the sincere goal of the Town of Cumberland and its Planning Department to provide a fair, thorough and timely review of all applications. To this end, I would like to provide you with a quick overview of the process and a copy of a checklist that lists the information that will be required for the review.

I encourage you to call me to set up an appointment to discuss your project. I will arrange for our Code Enforcement Officer, Bill Longley to join us. Bill's presence will help ensure that the land use requirements for lot size, frontage, setbacks and uses are correct. Sometimes a proposal will need to secure Board of Appeals approval prior to coming to the Planning Board; Bill staffs that Board and can help you with that process. At this initial meeting, Bill will classify your proposed subdivision as either major (more than 4 lots) or minor (4 or less lots). Requirements vary based on that classification.

Sketch plan presentations to the Board are encouraged for minor subdivisions and are required for major subdivisions. By meeting with the Board prior to the detailed engineering work being done, both time and money could be saved.

The Cumberland Planning Board meets once a month on the third Tuesday of the month at 7:00 p.m. in the Town Council Chambers at Town Hall. The meetings are televised on Channel 2 and replayed throughout the month.

Please note that the deadline for applications is 21 days prior to the next scheduled Planning Board meeting. Incomplete applications will not be brought to the Board for initial review.

The Town contracts with a peer review engineer of the Town's choice for each project. The fees for this review are paid by the applicant. An initial review fee is collected at the time of application and any additional fees must be paid by the applicant prior to the issuance of a building permit.

If you have any questions, please do not hesitate to call me at 829-2206 or email me at cnixon@cumberlandmaine.com. Pam Bosarge is the administrative assistant to me and the Planning Board. Please contact her if I am not available and she will assist you.

I look forward to working with you.

Sincerely,

Carla Nixon Cumberland Planning Director

# **SUBDIVISION AND SITE PLAN PROCESSES**

NOTE: Planning Board meetings are held on the third Tuesday of each month. All submission materials MUST be delivered to the Planning Office by 5:00 p.m. no later than 21 days prior to the meeting date. Any submission requirements not included in application must either be listed as requested waivers with justification or else the application will not be placed on the next meeting agenda.

#### Minor Site Plan Process

- 1. Application Completeness determined by Planner.
- 2. Optional site walk
- 3. Public hearing and reviews for as many months as needed.
- 4. Outside agency permits on file
- 5. Public hearing: Final Approval

#### Major Site Plan Process

- 1. Inventory and Analysis to Planning Board
- 2. Optional site walk
- 3. Application Completeness determined by Planner
- 4. Public hearing and reviews for as many months as needed.
- 5. Outside agency permits on file
- 6. Public hearing: Final Approval

#### Minor Subdivision

- 1. Sketch Plan Review Preferred
- 2. Site walk
- 3. Application Completeness determined by Planner
- 4. Public hearing and reviews for as many months as needed.
- 5. Outside Agency permits on file.
- 6. Public hearing: Final Approval

#### Major Subdivision

- 1. Sketch Plan Review
- 2. Site walk
- 3. Application Completeness determined by Planner
- 4. Public hearing and reviews for as many months as needed.
- 5. Preliminary Approval with Findings of Fact
- 6. Outside Agency permits on file.
- 7. Public hearing: Final Approval

# COMPLETION CHECKLIST

# BASED ON APPENDIX C

# MINOR SUBDIVISION SUBMISSION REQUIREMENTS

	YES/NO	NOTES/COMMENTS
15 copies of plans		
Scale 1"=40'		
Proposed name of town & subdivision		
Date of submission, north point, graphic map scale		
Names & address of record owner and subdivider		
Names of adjoining property owners		
Names of existing/proposed streets, easements & bldg. lines		
Boundaries & designations of zoning districts, parks, public spaces		
Field survey with bearings and distances certified by LLS. Monuments shown.		
Dimensions & areas of each proposed lot		
Location, dimension, bearing of every lot line.		
Survey to an accuracy of 1' to 5,000'.		
2' contours		
Surface drainage patterns, channels and watershed areas.		
Soils report w/boundaries superimposed on the plan		
Plan submitted to CCSWCS		
On-site public sewer and water shown horiz and vert (Hydro-geol study?)		
Surface drainage plan or stormwater mgmt plan		
Electrical facilities		
Covenents or deed restrictions		

# Town of Cumberland Major Subdivision Submission Checklist

# BASED ON APPENDIX D MAJOR SUBDIVISION SUBMISSION REQUIREMENTS

Subdivision Name			
Applicant's Name		Da	te
Per Section 4.1 General Profirst determine if the project Classification will determine	t will be class ne submission	sified as a major or mi requirements.	nor subdivision.
YOU MUST REVIEW TH ENFORCEMENT OFFIC APPLICATION TO RECE	ER AND TO	WN PLANNER PRIC	OR SUBMITTING
Major subdivision	M	linor Subdivision	
THE TOWN PLANNER COMPLETE OR INCOMPLETE OR I	IPLETE. OF PLANNING eck in the Wang the Subdiv	NLY COMPLETE A G BOARD.  iver Request column frision Ordinance section  Specify below the	preprietations shall or any requested waivers. In number, description, and the location of information,
	Yes or No	i.e., plan #, narra	tive, binder section Waiver
	1 0 01 110	Information?	Requested?
General Submissions:	12		
15 copies of plans and materials. All sheet sized to be 24" x 36"			
1"=100' scale for general plan			
1"=40' scale for construction of required improvements			
Traffic Info?			
Capacity to Serve letters? Financial and Technical			

Capacity (Sec.14)

Sewer user permits	
required? Status?	
Deed restrictions, if any, describe	
dostrido	
Cover Sheet:	
Proposed subd. name & name of municipality	
Name & address of record	
owner, subdivider, and designer of preliminary	
plan	
Location Map:	
Scale 1"=1000'	
• Shows area 1000' from property lines	
<ul> <li>All existing subdivisions</li> </ul>	
Approximate tract lines of adjacent parcels	
Approximate tract lines of parcels directly across street	
Location of existing & proposed streets, easements, lot lines & bldg. lines of proposed subd. & adjacent properties.	
Existing Conditions Plan	
Existing buildings	
Watercourses	
Legend	
Wetlands	
existing physical features (trees 10" diameter or more.Stone walls	
Trail System?	
Subdivision Plan:	
Date of plan submission,	
true north & graphic scale	

Net residential acreage calculations	
The state of the s	
Legend	
Trail (connecting?)	
Widths of existing/proposed streets, easements & bldg. lines	
Names of existing/proposed streets, easements & bldg. lines	
Boundaries &	
designations of zoning districts, parks, public spaces	
Outline of proposed subd. w/ street system	
Future probable street system of remaining portion of tract.	
Opportunities for Connecting Road(s) (13.2D)	
Space & setback of district	
Classification of road	
Width of road(s)	
Drainage type (open, closed, mix)	
Type of byway provided (8.4D)	
Names of adj.	
subdivisions	
Names of owners of record of adjacent acreage	
Any zoning districts boundaries affecting subd.	
Location & size of existing or proposed sewers, water mains, culverts, hydrants and	
drains on property	
Connections w/existing sewer or water systems	
Private water supply shown	
Private septic shown	
Hydro-geologic study	

(option for Board)	
Test pit locations	
Well locations	
Signature & lic. # of site	
evaluator	
Existing streets: location,	
name(s), widths w/in and	
abutting	
Proposed streets: location,	
name(s), widths w/in and	
abutting	
The above for any	
highways, easements,	
bldg. lines, alleys, parks,	
other open spaces w/in	
and abutting	
Grades & street profiles	
of all streets, sidewalks or	
other public ways	
proposed	
2'contour lines	
High intensity soil survey	
by cert. soil scientist	
Soil boundaries & names	
superimposed on plot plan	
Deed reference & map of	
survey of tract boundary	
by reg. land surveyor tied	
to established reference	
points	
Surface drainage or	
stormwater mgmt plan	
w/profiles & cross	
sections by a P.E.	
showing prelim. design	
and conveyances	
Proposed lot lines w/	
dimensions and suggested	
bldg. locations.	
Location of temp. markers	
in field	
All parcels proposed to be	
dedicated to public use	
and conditions of such.	
Location of all natural	
features or site elements	
to be preserved	
Street lighting details	
Landscaping and grading	
plan including natural	
features to be preserved	

Survey stamped by P.E.				4
Soil surveys w/# of soil				
scientist				
Septic plan w/# of prof. site evaluator				
Geological evals w/ reg.				
geologists number				
Architect's seal				
For Rt. One: 75'				
undisturbed buffer				
applicable to all buildings,				
structures, parking areas,				
drainage facilities and				
Uses.				
Open Space?				
Any part of parcel in a shoreland zone?				
Flood Map Number and rating?				
Stormwater Report?		N		
Rivers, ponds, wetlands?				
Historic, archeological				
features?				
Solid waste disposal?				
Required Notes on Plan:			#	
Fire Department notes	P. P.			
Clearing limits note				
Re: approval limit of 90				
days before recording or null p. 10				
Final Plan Submissions:	See Appendix D			
Actual field survey of				
boundary lines w/				
Monumentation shown				
Assessor's approval of street names and				
assignment of lot				
numbers.				
Designation of all open				
spaces w/ notes on			_ + 111	
ownership				
Copies of declarations,				
agreements or other			111	
documents showing the				
manner in which open			0 (1)	
space or easements are to				

be held and maintained.	
Written offer for any conveyance to the Town of open space or easements along with written evidence that the Council is willing to accept such offer	
Evidence of Outside Agency Approvals	

### As per Section 7.2 - REVIEW AND APPROVAL BY OTHER AGENCIES:

A. Where review and approval of any subdivisions or site plan by any other governmental agency is required, such approval shall be submitted to the Planning Board in writing prior to the submission of the Final Plan.

Please list below all outside agency approvals that are required for this subdivision.

Maine Department of Environmental Protection: List type of permit(s) required (e.g., SLODA, NRPA (tier type?), Maine Construction General Permit, etc.)

**US Army Corps of Engineers:** 

Maine Department of Transportation: List type of permit(s) required.

Maine Department of Inland Fisheries and Wildlife:

Other: (List)

				•
,				
				,

DOC:18302 BK:33961 PG:238

# WARRANTY DEED MAINE STATUTORY SHORT FORM

DLN: 1001740013452

KNOW ALL MEN BY THESE PRESENTS, that we, Alexandr Kasianov and Lubov Kasianov, of 959 Highland Avenue, South Portland, ME 04106, for consideration paid, grant to Denise E. Morgan, of 2 Forest Lane, Cumberland, ME 04021, with WARRANTY COVENANTS, the following described real property:

See attached Exhibit A

For title of Grantor, reference is hereby made to a deed from Estate of Cathleen Copp Allen to Alexander Kasianov and Lubov Kasianov dated April 24, 2002 and recorded in the Cumberland County Registry of Deeds in Book 17572, Page 194.

Witness our hands and seals this 21 April, 2017.

Signed, sealed and delivered in the presence of:	Mestano
Witness	Alexandr Kasianov
STATE OF MAINE COUNTY OF Cumberland, ss	Date: April 2 2 2017
Personally appeared the above-named Ale foregoing to be his free act and deed.  Before me,	exandr Kasianov and acknowledged the
Print name: My commiss	Jeffrey R. Vigue

DOC:18302 BK:33961 PG:239

Witness our hands and seals this D April, 2017.

Signed, sealed and delivered in the presence of:

\*\*Lubov Kaşianov\*\*

Undov Kaşianov\*\*

STATE OF Florida Date: April QO, 2017

COUNTY OF Escandia, ss

Personally appeared the above-named Lubov Kasianov and acknowledged the foregoing to be her free act and deed.

Before me, Magar Glover My commission expires: 10/21/18

Notary Public State of Florida Megan Glover My Commission FF 170485

Megan Glover My Commission FF 170485

Notary Public State of Florida Megan Glover My Commission FF 170485

Megan Glover My Commission FF 170485

Notary Public State of Florida Megan Glover My Commission FF 170485

Megan Glover My Commission FF 170485

Notary Public State of Florida Megan Glover My Commission FF 170485

Notary Public State of Florida Megan Glover My Commission FF 170485

Megan Glover My Commission FF 170485

Notary Public State of Florida Megan Glover My Commission FF 170485

Megan Glover My Commission FF 170485

DOC:18302 BK:33961 PG:240

RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS 04/25/2017, 08:33:22A

Register of Deeds Nancy A. Lane E-RECORDED

#### **EXHIBIT A**

A certain lot or parcel of land situated on the Easterly side of Route 100 in the Town of Cumberland, County of Cumberland and State of Maine, being more particularly described as follows:

Beginning at a 5/8" capped rebar to be set on the Easterly sideline of said Route 100 at the Northwesterly corner of land now or formerly of Senence (9098/222); thence N 00° 24′ 51" E along said sideline of Route 100 a distance of 97.82 feet to a 5/8" capped rebar to be set at the Southwesterly corner of land now of formerly of Nielsen (3492/248); thence S 78° 14' 14" E along land of said Nielsen 299.94 feet to a 5/8" capped rebar to be set at the Southeasterly corner of said Nielsen land; thence N 03° 31′ 45″ E continuing along land of said Nielsen 150.74 feet to a 5/8″ capped rebar to be set at the Northeasterly corner of said Nielsen and along the Southerly property line of land now or formerly of Dupuis; thence S 87° 58′ 28" E continuing along said land of Dupuis 238.49 feet to a 5/8" capped rebar set in the ground at the Southeasterly corner of said Dupuis and on the Westerly sideline of the former Portland-Gray-Lewiston Railroad (a/k/a Interurban Railroad); thence continuing S 87° 58' 28" E crossing said Railroad along land now or formerly of Allen 216 feet, more or less, to the approximate center of the West Branch of the Piscataqua River and land now or formerly of Piampiano; thence in a southerly direction following the approximate center of the said River and land of said Piampiano 600 feet, more or less, to a point near the end of a stone wall; thence N 77° 49′ 18" W following said stone wall crossing said Railroad 183 feet, more or less, to a 5/8" capped rebar to be set on the Westerly sideline of said Railroad at the Northeasterly corner of land now or formerly of Smith (3805/1); thence continuing N 77° 49' 18" W following said stone wall and along land of said Smith 320.97 feet to a stonewall corner at the Southeasterly corner of land now or formerly of Michaud (4251/306); thence N 00° 26′ 52" E along land of said Michaud and Senence following a stone wall 225.00 feet to a 5/8" capped rebar to be set at the Northeasterly corner of said Senence; thence N 77° 49' 28" W along land of said Senence 300.33 feet to the point of beginning.

All bearings are referenced to Magnetic North 1992.



August 21, 2017

Fax: 207.510-8900

To Whom It May Concern:

RE: Megan Morgan & Nathan Pelsinski

This letter is to advise that Megan and Nathan have the financial capacity to construct and finance a four unit dwelling on the property located at 251 Gray Road in Cumberland, Maine.

Thank you!

**Corey Scott** 

**Loan Officer** 

NMLS # 369334

Cell: 207.400.7750



SOIL EVALUATION . WETLAND DELINEATIONS . SOIL SURVEYS . WETLAND PERMITTING

4869 April 15, 2017

Mr. Scott Morgan 2 Forest Lane Cumberland, ME 04021

Re: Wetland Delineation, 6.3 acre parcel 251 Gray Road Cumberland, ME

Dear Scott,

Today, I completed a wetland delineation on an 6.3 acre parcel located at 251 Gray road Cumberland, ME. The wetland delineation was completed in accordance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Northcentral and Northeast Regions dated January 2012. These manuals require the presence of three parameters for a wetland to be present, wetland hydrology, hydrophytic vegetation, and hydric soils.

The wetlands I found on the parcel were flagged with yellow flagging. The flagging was labeled in an alphanumeric sequence. The wetland flags were located by gps equipment capable of locating a point to within three feet. The wetland data has been forwarded to your office. The wetlands found onsite are forested wetlands. The wetlands on the parcel are related to drainage moving across the site from west to the east. The wetlands on the parcel located adjacent to the river will meet the definition of wetlands of special significance as defined by Maine Department of Environmental Protection.

If you have any questions or require additional information, please contact me.

Sincerely,

Mark J. Hampton C.S.S., L.S.E.

Certified Soil Scientist #216 Licensed Site Evaluator #263 SOIL EVALUATION . WETLAND DELINEATIONS . SOIL SURVEYS . WETLAND PERMITTING

4869

June 23, 2017

Morgan Family 2 Forest Lane Cumberland, ME 04021

Re: Vernal Pool Assessment, 251 Gray Road Cumberland, ME

Dear Scott,

I have completed a vernal pool assessment during this breeding season, on a 5 acre parcel located at 251 Gray Road Cumberland, ME. The vernal pool assessment was conducted in accordance with Chapter 335 Significant Wildlife Habitat, Section 9 Significant Vernal Pools for the Maine Department of Environmental Protection. This section outlines the definition of a vernal pool as well as the requirements of a vernal pool to meet the definition of significance as related to the number of amphibian egg masses counted during the breeding season.

I made 5 site visits to the property over the course of six weeks beginning the third week in April. During each of these site visits I would evaluate the site of a potential vernal pool. The pool is located in the southeast corner of the property directly abutting the old interurban railroad right of way. I was looking for any amphibian egg masses. I did not find any wood frog or salamander egg masses on the property. As such, based on the observations made this spring, I found no vernal pools on the property. Vernal pools are described as shallow depressions that usually only contain water for part of the year. Vernal pools are also mostly likely to occur in forested or heavily vegetated areas for protection.

I have included a completed Maine State Vernal Pool Assessment Form and a copy of photographs of the assessment site. At your authorization I will submit the form and photograph to Maine Department of Inland Fisheries and Wildlife for processing.

If you have any questions or require additional information, please contact me.

Sincerely,

Mark J. Hampton C.S.S., L.S.E. Certified Soil Scientist #216

Licensed Site Evaluator #263



### **Maine State Vernal Pool Assessment Form**



### **INSTRUCTIONS:**

- Complete all 3 pages of form thoroughly. Most fields are required for pool registration.
- Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are <u>required</u> for all observers.

Observer's Pool ID:	MDIFW Pool ID:
---------------------	----------------

#### 1. PRIMARY OBSERVER INFORMATION

- a. Observer name:
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes

#### 2. PROJECT CONTACT INFORMATION

- a. Contact name: same as observer other
- b. Contact and credentials previously provided? No (submit Addendum 1) Yes
- c. Project Name:

#### 3. LANDOWNER CONTACT INFORMATION

- a. Are you the landowner? Yes No If no, was landowner permission obtained for survey? Yes No
- b. Landowner's contact information (required)

Name: Phone:

Street Address: City: State: Zip:

c. Large Projects: check if separate project landowner data file submitted

### 4. VERNAL POOL LOCATION INFORMATION

a. Location Township:

Brief site directions to the pool (using mapped landmarks):

### b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

### ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: Latitude/Northing:

Coordinate system:

Check one: GIS shapefile

- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

The pool perimeter is delineated by multiple GPS points. (Excellent)

- Include map or spreadsheet with coordinates.

The above GPS point is at the center of the pool. (Good)

The center of the pool is approximately m ft in the compass direction of

degrees from the above GPS point. (Acceptable)



### **Maine State Vernal Pool Assessment Form**



### 5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3):

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

Isolated depression Pool associated with larger wetland complex

Floodplain depression Other:

■ Check all wetland types that best apply to this pool:

Forested swamp Wet meadow Slow stream Dug pond or Shrub swamp Lake or pond cove Floodplain borrow pit

Peatland (fen or bog) Abandoned beaver flowage Mostly unvegetated pool Roadside ditch

Emergent marsh Active beaver flowage ATV or skidder rut Other:

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: Natural Natural-Modified Unnatural Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (required):

ii. Pool Hydrology

■ Select the pool's <u>estimated</u> hydroperiod AND <u>provide rationale</u> in box (**required**):

Permanent Semi-permanent Ephemeral Unknown

(drying partially in all years and (drying out completely

completely in drought years) in most years)

Explain:

■ Maximum depth at survey: 0-12" (0-1 ft.) 12-36" (1-3 ft.) 36-60" (3-5 ft.) >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: m ft Length: m ft

■ Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland Organic matter (peat/muck) shallow or

mosses present) restricted to deepest portion

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap Wet site ferns (e.g. royal fern, marsh fern)

moss, lycopodium spp.)

Dry site ferns (e.g. spinulose wood fern,

Wet site shrubs (e.g. highbush blueberry, maleberry,

lady fern, bracken fern) winterberry, mountain holly)

Moist site ferns (e.g. sensitive fern, cinnamon

Wet site graminoids (e.g. blue-joint grass, tussock

fern, interrupted fern, New York fern)
sedge, cattail, bulrushes)

Moist site vasculars (e.g. skunk cabbage, Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

jewelweed, blue flag iris, swamp candle)

Floating or submerged aquatics (e.g. water lily,

Sphagnum moss (anchored or suspended) water shield, pond weed, bladderwort)

No vegetation in pool

■ Faunal indicators (check all that apply):

Fish Bullfrog or Green Frog tadpoles Other:

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

No inlet or outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)

Intermittent inlet Other or Unknown (explain):

or outlet



### Maine State Vernal Pool Assessment Form



### 6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates:

### b. Indicator abundance criteria and pool survey effort

■ Is pool depression bisected by 2 ownerships (straddler pool)? Yes No

■ Was the entire pool surveyed for egg masses? Yes No; what % of entire pool surveyed?

■ For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES		Egg Masses (or adult Fairy Shrimp)											Tadpoles/Larvae⁴				
	Visit #1	Visit #2	Visit #3	Confi	dence l	_evel <sup>1</sup>	Egg Mass Maturity <sup>2</sup>			Ob	served	Confidence Level <sup>1</sup>					
Wood Frog						7							100				
Spotted Salamander						Œ				ÈΪ							
Blue-spotted Salamander										Ē							
Fairy Shrimp <sup>3</sup>					7	11 11											

<sup>1-</sup>Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

### c. Rarity criteria

■ Note any rare species associated with vernal pools. <u>Observations should be accompanied by photographs</u>.

	Method	of Veri	fication*	CL**		Method	of Veri	fication*	CL**
SPECIES	Р	Н	-   SPECIES		Р	Н	S	OL	
Blanding's Turtle					Wood Turtle				
Spotted Turtle					Ribbon Snake				
Ringed Boghaunter					Other:				

<sup>\*</sup>Method of verification: P = Photographed, H = Handled, S = Seen

### d. Optional observer recommendation:

SVP Potential SVP Non Significant VP Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife

Attn: Vernal Pools

650 State Street, Bangor, ME 04401

NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.

For MDIFW use only Reviewed by MDIFW Date: Initials:

This pool is: Significant Potentially Significant Not Significant due to: does not meet biological criteria.

but lacking critical data does not meet MDEP vernal pool criteria.

Comments:

<sup>2-</sup>Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

<sup>3-</sup>Fairy shrimp: X = present 4-Tadpoles/larvae: X = present

<sup>\*\*</sup>CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%



August 17, 2017

Traffic Assessment

For Proposed

### **Morgan Family Residential Development**

### Cumberland, Maine

### INTRODUCTION

The Morgan Family is proposing to construct two four-unit apartment buildings on a parcel of property located at 251 Gray Road in the Town of Cumberland. The proposed residential project will be accessed through a driveway entrance that intersects Gray Road (SR100/26) just north of the Old Gray Road intersection.

This document determines daily and peak hour trip generation of the proposed project for both peak commuter time periods, examines current roadway safety trends in the general vicinity of the proposed project, and reviews vehicle sight distance.

### SITE TRAFFIC

Site Trip Generation: Daily and peak hour trip generation was determined for the proposed project based upon trip tables presented in the ninth edition of the Institute of Transportation Engineers (ITE) "TRIP GENERATION" handbook. The ITE publication provides numerous land use categories and the average volume of trips generated by each category.

The following trip rate was used to calculate trip generation for the proposed project:

### Land Use #220 - Apartment

Weekday = 6.65 trips per dwelling unit AM Peak Hour = 0.51 trips per dwelling unit PM Peak Hour = 0.62 trips per dwelling unit

Accordingly, the proposed 8 residential apartment units can be expected to generate a total of 53 trips during a typical weekday; 4 trips in the morning peak hour and 5 trips in the evening peak hour.

**Site Trip Distribution**: The Institute of Transportation Engineers handbook also provides the following directional distribution rates for an apartment unit:

AM Peak Hour = 20% enter site and 80% exit site PM Peak Hour = 65% enter site and 35% exit site Based upon the noted directional distribution patterns, 3 trips during the morning peak hour and 2 trips in the evening peak hour will exit the site and the remaining trips (1 AM trip and 3 PM trips) will enter the site.

### **EXISTING SAFETY CONDITIONS**

The Maine Department of Transportation's (MaineDOT) Accident Records Section provided the latest three-year (2014 through 2016) crash data for the 0.55-mile section of Gray Road (SR 100/26) between the Gray town line northerly and Forest Avenue to the south. Their report is presented as follows:

2014 -2016 Traffic Accident Summary

Location	Total Crashes	Critical Rate Factor
1. Gray Road btw. Gray Town Line and Old Gray Road	1	0.20
2. Gray Road btw. Old Gray Road and Forest Avenue	2	0.29

The MaineDOT considers any roadway intersection or segment a high crash location if both of the following criteria are met:

- 8 or more accidents
- A Critical Rate Factor greater than 1.00

As the data presented in the table shows, the incidence of traffic crashes is extremely low; well below MaineDOT's threshold criteria for identification of a high crash location.

### SIGHT DISTANCE

The Maine Department of Transportation has classified State Route 26/100 (Gray Road) a mobility highway, which requires a more stringent sight distance standard than non-mobility corridor requirements. MaineDOT's mobility and non-mobility sight distance standards are presented in the following table:

**Sight Distance Standards** 

Speed Limit	Mobility Highway Sight Distance	Non-Mobility Highway Sight Distance
25 mph	n/a	200
30	n/a	250
35	n/a	305
40	580	360
45	710	425
50	840	495
55	990	570

Gray Road (SR 26/100) is currently posted at 50mph in the roadway section fronting the proposed property. The mobility highway sight distance standard is 840 feet and the non-mobility highway requirement is 495 feet. Field measurements recorded at the proposed driveway entrance intersection with Gray Road exceed 1000-feet northerly (right) and a measurement of 495-feet was measured southerly (left). The sightline "looking" left from the proposed driveway entrance doesn't meet MaineDOT's mobility highway sight distance standard but does satisfy the non-mobility highway standard for the posted speed limit. MaineDOT's Region #1 office issued a conditional driveway entrance permit for the property on April 18, 2006 with an approved waiver of the mobility highway sight distance standard. A copy of the prior driveway entrance permit is attached for reference.

### CONCLUSIONS

- The residential project can be expected to generate 53 daily trips; four (4) trips in the morning peak hour and 5 trips during the afternoon peak commuter hour.
- The Maine Department of Transportation's most recent three-year (2014 to 2016) accident safety audit for the section of Gray Road (SR 26/100) between the Gray town line and Forest Avenue, a distance of 0.49 miles, shows the vehicle crash history within the corridor is below MaineDOT's criteria for identification of a high crash location.
- Vehicle sightlines measured in both directions from the proposed driveway entrance at Gray Road meet the non-mobility highway sight distance standard for a posted speed limit of 50mph. A field measurement in excess of 1000 feet was recorded "looking" north (right) and a distance of 495 feet was measured "looking" left. MaineDOT issued a conditional driveway entrance permit for the proposed property on April 18, 2006 that includes a waiver of their mobility highway sight distance standard and accepts the lower non-mobility sight distance of 495 feet.
- A formal driveway entrance application should be filed with MaineDOT seeking a current driveway entrance permit for the proposed access.



# Maine Department Of Transportation - Traffic Engineering, Crash Records Section Crash Summary Report

		Report Selections and Inj	put Parameters		
REPORT SELECTIONS  Crash Summary I	Section Deta	ail  ☑ Crash Summary II	□1320 Public	☐1320 Private	☐1320 Summary
REPORT DESCRIPTION Rt 26					
REPORT PARAMETERS Year 2014, Start Month 1 thi	ough Year 2016 Er	nd Month: 12			
Route: 0026X	Start Node: 17 End Node: 98		P	☐ Exclude First N ✓ Exclude Last N	7.77

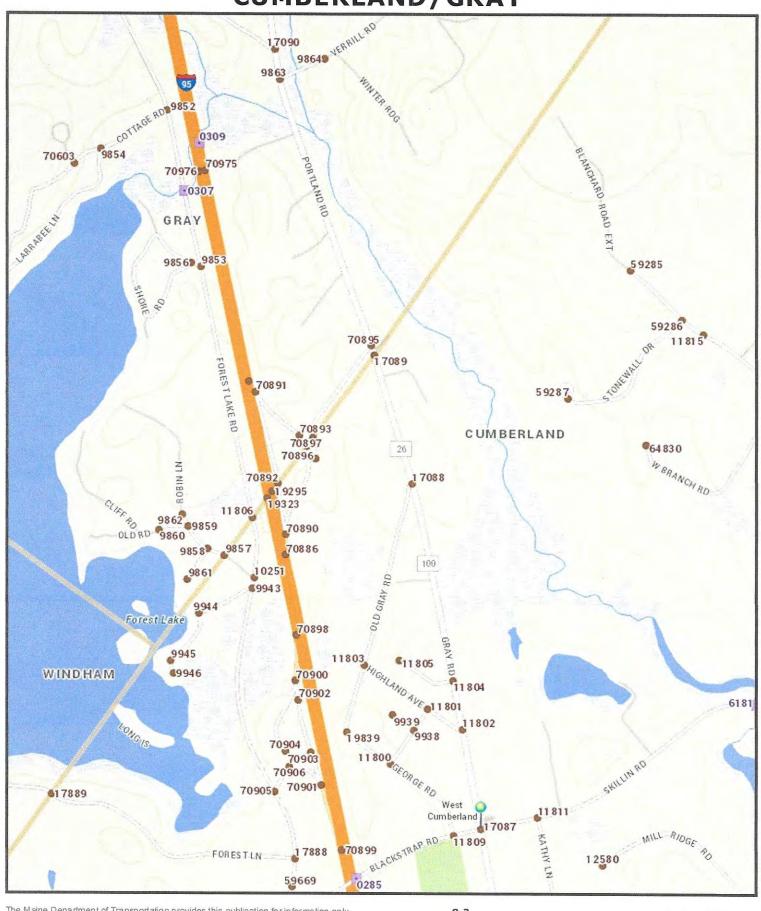
# Maine Department Of Transportation - Traffic Engineering, Crash Records Section Crash Summary I

				Nodes										
Node	Route - MP	Node Description	U/R	Total Crashes			y Cra		-	Percent	Annual M	Crash Rate	Critical	CRF
17087	0026X - 11.48	Int of BLACKSTRAP RD GRAY RD SKILLIN RD		CALDSTOCK	K	Α	В	С	PD	injury	Ellf-A611		Rate	
	2.59.19		1	9	0	1	0	3	5	44.4	3.347 Sta	0.90 stewide Crash Rate	0.35	2.5
	0026X - 11.65	Int of GRAY RD, HIGHLAND AV	1	0	0	0	0	0	0	0.0	2,333 Sta	0.00 stewide Crash Rate	0.39	0.00
	0026X - 11.73	Int of FOREST AV GRAY RD	1	0	0	0	0	0	0	0.0	2.293 Sta	0.00 Itewide Crash Rate	0.39	0.00
	0026X - 12.06	Int of GRAY RD OLD GRAY RD	1	0	0	0	0	0	0	0.0	2.154 Sta	0.00 Itewide Crash Rate	0.39	0.00
	0026X - 12.28	TL Cumberland Gray	1	0	0	0	0	0	0	0.0	1.049 Sta	0.00 Itewide Crash Rate	0.46	0.00
70895	0026X - 12.30	Int of 195 PARKING PORTLAND RD	1	0	0	0	0	0	0	0.0	1.314 Sta	0.00 tewide Crash Rate	0.44	0.00
Study Y	ears: 3.00	NODE	TOTALS:	9	0	1	0	3	5	44.4	12.490	0.24	0.25	0.95

# Maine Department Of Transportation - Traffic Engineering, Crash Records Section Crash Summary I

							Sect	ions			100				- 4		
Start	End	Element	Offset	Route - MP	Section	U/R	Total		Inju	iry Cr	ashes		Percent	Annual	Crash Rate	Critical	CRF
Node	Node		Begin - End		Length		Crashes	K	Α	В	С	PD	Injury	HMVM		Rate	
11802 Int of GRA	17087 Y RD, HIGH	3119177 HLAND AV	0 - 0.17	0026X - 11.48 ST RTE 26	0.17	1	0	0	0	0	0	0	0.0	0.00379	0.00 Statewide Crash F	373.32 Rate: 135.80	0.00
11802 Int of GRA		3106104 HLAND AV	0 - 0.08	0026X - 11.65 ST RTE 26	0.08	1	0	0	0	0	0	0	0.0	0.00191	0.00 Statewide Crash F	444.87	0.00
11804 Int of FORI	17088 EST AV G	3106105 RAY RD	0 - 0.33	0026X - 11.73 ST RTE 26	0.33	1	2	0	0	0	1	1	50.0	0.00719		317.05	0.00
17088 Int of GRA		3106539 GRAY RD	0 - 0.22	0026X - 12.06 ST RTE 26	0.22	1	1	0	0	0	0	1	0.0	0.00462		354.76	0.00
70895 Int of 195 P		3945006 PORTLAND RD	0 - 0.02	0026X - 12.28 ST RTE 26	0.02	1	0	0	0	0	0	0	0.0	0.00042		584.68	0.00
9863 Int of POR		3945005 VERRILL RD	0 - 0.46	0026X - 12.30 ST RTE 26	0.46	1	5	0	0	0	0	5	0.0	0.00965		294.93	0.00
Study Y	ears: 3	.00		Section Totals:	1.28		8	0	0	0	1	7	12.5	0.02758	96.68	234.11	0.41
				Grand Totals:	1.28		17	0	1	0	4	12	29.4	0.02758	205.43	277.65	0.74

# **CUMBERLAND/GRAY**



The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.2 Miles
1 inch = 0.21 miles

Date: 5/31/2017 Time: 10:35:38 AM



26989 Bk:23929 Pg: 276

# Maine Department of Transportation Driveway/Entrance Permit

Permit Number: 4621

Alexander Kasianov

Address: 959 Highland Ave.

Sc. Portland, ME 04106

Telephone: (207)899-3191

Owner:

Location: Route: 0100X, Gray Rd.

Municipality: Cumberland

County: Cumberland

Tax Map: U21; Lot Number: 18

Culvert Size: \*

Culvert Type: N/R Culvert Length: '

Date of Permit: 13-APR-06

Approved Entrance Width: 20'

In accordance with rules promulgated under 23 M.R.S.A., Chapter 13, Subchapter I, Section 704, the Maine Department of Transportation (MaineDOT) approves a permit and grants permission to perform the necessary grading to construct, in accordance with sketch or attached plan, a Driveway to [a] Multi Family 5 or less at a point 270' N from Old Gray Rd., subject to the Chapter 299 Highway Driveway and Entrance Rules, standard conditions and

### Conditions of Approval:

This permittee acknowledges and agrees to comply with the Standard Conditions of Approval attached hereto and to any Specific Conditions of Approval shown here.

# Approved Waivers(s) and/or Special Condition(s):

(W = Waiver; S = Special Condition)

W -- Spacing Standards for driveway separation distance has been reduced from 350 feet to 69 feet.

W -- Mobility sight distance reduced from 840 feet to 495 feet.

S -- In the town of Cumberland on the easterly side of Rte 100, approx. 270' northerly of Old Gray Rd.

S -- In order to get basic sight distance (495'), driveway must be 17' northerly of CMP utility pole #46.

### The MaineDOT has determined that:

1. The waiver will not significantly detract from public safety,

2. The proposed driveway/entrance meets the standards to the maximum extent practicable, and

A notarized, written waiver determination has been sent to the owner. The owner shall record the waiver determination in the Registry of Deeds in the County in which the property is located within 90 days of the date of the waiver, or the waiver will be null and void & the permit will expire.

Date: April 18, 2006 5

### STANDARD CONDITIONS

- Comply with all design information, plans, and proposals contained in the application.
- Provide, erect and maintain all necessary barricades, lights, warning signs and other devices to safeguard traffic properly while the construction is in progress.
- 3. At no time cause the highway to be closed to traffic.
- 4. Where the driveway is located within a curb, curb and gutter, and/or sidewalk section, completely remove the existing curb, curb and gutter, and/or sidewalk as may be required to create the driveway and restore drainage. All driveways abutting sidewalk sections shall meet the requirements set forth in the Americans with Disabilities Act of 1990, 42 U.S.C. Sec. 12131 et seq.
- 5. Obtain, have delivered to the site and install any culverts and/or drainage structures which may be necessary for drainage, the size, type and length as called for in the permit pursuant to 23 M.R.S.A. Sec. 705. All culverts and/or drainage structures shall be new.
- Permit expires if construction work has not commenced within 24 months of issuance and must be substantially complete within twelve months of commencement of construction.
- Comply with all applicable federal, state and municipal regulations and ordinances.
- Not alter, without the express written consent of the MaineDOT, any culverts or drainage swales within the MaineDOT right of way.
- 9. File a copy of the approved driveway permit with the affected municipality or LURC, as appropriate, within 5 business days of receiving the MaineDOT approval; and mail a copy of the approved driveway permit to the immediate abutter(s) within 5 business days of receiving the MaineDOT approval.
- 10. Shall construct and maintain the entrance side slopes to be no steeper than 3 horizontal to 1 vertical.
- Notify the MaineDOT of a proposed change to use served by driveway/entrance when increase in traffic flow is expected to occur.

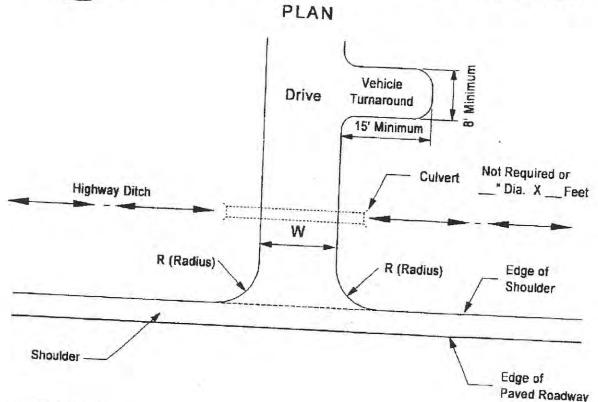
### FURTHER CONDITION OF THE PERMIT:

The owner shall assume the defense of, and pay all damages, fines, and penalties for which he/she shall become liable, and shall indemnify and safe harmless said Department, its representatives, agents and employees from liability, actions against all suits, claims, damages for wrongful death, personal injuries or property damage suffered by any person or association which results from the willful or negligent action or inaction of the cwner/applicant/agent and in proceedings of every kind arising out of the construction and maintenance of said entrance(s), including snow removal. Nothing herein shall, nor is intended to, waive any defense, immunity or limitation of liability which may be available to the MaineDOT, their officers, agents or employees under the Maine Tort Claims Act or any other privileges and/or immunities provided by law. It is a further condition that the owner will agree to keep the right of way inviolate for public highway purposes and no signs (other than traffic signs and signals), posters, billboards, roadside stands, culvert end walls or private installations shall be



# State of Maine Department of Transportation

# **Entrance / Driveway Details**

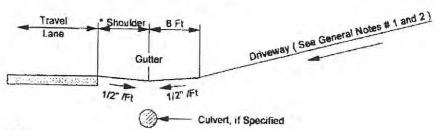


### GENERAL NOTES -

- 1. ALL RESIDENTAL OR COMMERCIAL DRIVES WITH 10% GRADE OR MORE SLOPING DOWN TOWARDS THE HIGHWAY SHALL BE PAVED TO THE RIGHT OF WAY LINE, AS A MINIMUM, INCUDING SHOULDER, IF GRAVEL AND HAVE DITCHES TO CONTROL RUNOFF.
- 2. DRIVES SLOPING TO THE HIGHWAY SHALL BE CROWNED ( 1/2" PER FT. MINIMUM ).
- 3. TO THE MAXIMUM EXTENT PRACTICAL, THE ENTRANCE MUST BE CONSTRUCTED PERPENDICULAR TO THE HIGHWAY AT THE POINT OF ACCESS. EXCEPT WHERE CURBING EXISTS OR IS PROPOSED, THE MINIMUM RADIUS ON THE EDGES OF THE ENTRANCE MUST BE 10 FEET OR AS OTHERWISE REQUIRED AS SHOWN.
- 4. ENTRANCES/DRIVEWAYS WILL BE BUILT WITH AN ADEQUATE TURN-AROUND AREA ON SITE TO ALLOW ALL VEHICLES TO MANUVER AND PARK WITHOUT BACKING ONTO THE HIGHWAY, THIS TURN-AROUND SHALL BE AT LEAST 8 FEET WIDE BY 15 FEET LONG.
- 5. ENTRANCES/DRIVEWAYS AND OTHER ASSOCIATED SITE WORK WHICH DIRECTS WATER (RUNOFF) TOWARD THE HIGHWAY MUST BE CONSTRUCTED, CROWNED STABILIZED AND MAINTAINED WITH MATERIALS AND APPROPRIATE TEMPORARY/PERMANENT EROSION CONTROL MATERIALS IN ACCORDANCE WITH MOOT BEST MANAGEMENT PRACTICES.
- 6. THE PROFILE OF THE ENTRANCES MUST COMPLY WITH THE DETAILS SHOWN ON PAGE 2.

# MDOT Entrance / Driveway Details, Continued

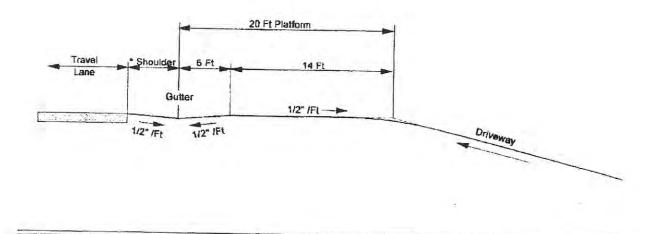
# PROFILE Details



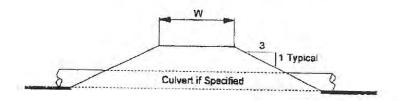
#### NOTE:

Grade of Existing Shoulder Should Be Maintained To Create A Gutter With a Minimum Of Three Inches Below The Edge Of Traveled Way.

\* Distance Of The Gutter From The Edge Of Traveled Way Should Be The Same As Existing Shoulder Or A Minimum Of 4 Feet.



# **Driveway Cross Section**



### Doc+: 26989 Bk:23929 Ps: 280

Maine Department of Transportation

Date: 4/11/06

By: Ronald B. Munger, P.E.

Traffic Engineer, Southern Region

STATE OF MAINE County of County of

Date: 4/11/06

Personally appeared the above named Ronald B. Munger and acknowledged the foregoing instrument to be his/her free act and deed in his/her said capacity.

Notary Public

Print Name: Joyce A. Arnemann

My Commission Expires: //

To Registry of Deeds:
Please return recorded document to:
Maine Department of Transportation
Southern Region
P.O. Hox 358
Scarborough, Maine
04070-0358
Attn:Joyce A. Arnemann

JOYCE A. ARNEMANN
Notary Public, Maine
My Commission Expires November 13, 2012

SEAL

Received Recorded Resister of Deeds Has 05,2006 82:28:17P Cumberland County John B Obrien



SOIL EVALUATION . WETLAND DELINEATIONS . SOIL SURVEYS . WETLAND PERMITTING

4869

June 13, 2017

Mr. David St. Clair St. Clair Associates 34 Forest Lane Cumberland, ME 04021

Re: Preliminary soil evaluation, 5.5 acre parcel, 251 Gray Road Cumberland, ME

Dear David,

I have completed a preliminary soil evaluation on a 5.5 acre parcel located at 251 Gray Road Cumberland, ME The parcel is proposed to be developed into a multi-family project. The soil evaluation was conducted in accordance with the Maine Subsurface Wastewater Disposal Rules dated August 2015, as amended. I evaluated a couple hand excavated soil test pits for each proposed building. The soils found on the parcel are glacial till sandy soils with a limiting factor at approximately 16-18 inches. I was able to find suitable soils and area for a septic system for each proposed building on the parcel.

The soils as evaluated meet the minimum requirements of the state rules and as such are suitable for the location of a septic system. The disposal bed for each 2 bedroom triplex would possibly be a 1800 square feet stone bed, 30 feet wide and 60 feet long or an Eljen system with 40 Eljens for each building with a footprint of 15 feet wide by 40 feet long. In my opinion, there are suitable soils and area on the parcel for a septic systems. A subsurface wastewater disposal design can be prepared at a future date.

If you have any questions or require additional information, please contact me.

Sincerely,

Mark J. Hampton L.S.E., C.S.S. Licensed Site Evaluator #263

Certified Soil Scientist #216

4869 FORM F Rev. 07/11

Pro		OIL PROF	ILE / CLAS		ON INFORMA	NOITA	SUBS	DETAILED SURFACE COND	DESCRIPTION ITIONS AT PR	OF OJECT SITES
[ [	C	wswa	d		licant Name:	vli		Project Locatio	n (municipality)	:
Exp	olora	ation Symbol #	TPI B	-	Boring Probe		tion Symbol #			
_		_ " Organic horiz	zon thickness	Ground surfac	e elev	Explora	" Organic hor	izon thickness	Ground surface	Boring Probe
			Depth of explor	1				" Depth of explor	ration or to refu	sal
	0 -	Texture	Consistency	Color	Redox Features	0 -	Texture	Consistency	Color	Redox Features
		Sarth	Friedle	Dave			Sandy	Fridak	Diston	
(S)	10-	Swoly				(s) 10-				
Depth below mineral soil surface (inches)		lear	Frieble	BARCA		Depth below mineral soil surface (inches)	Sandy	Fachle	Виш	
e (ii	20-					e (i)	10011			
ırfac	20-	Sandy		Alive	Commun	-02 if	Cardy			Corpins
oil su			7100	Ourc	D1804	oil su		Flow	Shu	Dichut
al sc	30 -	Wan			9-11-04	S 30-	160m			973/1A/T
iner						iner				
W 4	10-					¥ 40-				
pelc						pelo				
pth 2	50-					the epth				
ă						0 00				
6	50					00				
ý S	S.E.	Soil Classific	cation Slop	. 6	Groundwater	60 → S.E.	Soil Classifi	-		Of D Groundwater
Soil Details by	**		Condition Perce		Restrictive Layer Bedrock	Details by S.S.	Profile	Condition Perce	10	Restrictive Layer Bedrock
oil De	S.S.	Soil Series/Phase I	Name:	☐ Hydric	Hydrologic	S.S.	Soil Series/Phase		nt Depth	Hydrologic
Š	**			□ Non-h	ydric Soil Group	Soil N			□ Non-h	
Expl	orat	tion Symbol # _	73 B	Test Pit □ Be	oring Probe	Explorat	ion Symbol #	TP4 6	Toot Dit II D	
_		" Organic horiz	on thickness	Ground surface	e elev		" Organic horiz	zon thickness	Ground surface	elev
	1		Depth of explora	ation or to refus			'	Depth of explora	ation or to refus	al
(	0 +	Texture	Consistency	Color	Redox Features	0 +	Texture	Consistency	Color	Redox Features
		Itam	Frable	- 13 isin		-	Santy	Enible	Bush	
(sa	0+	Soundly	Fridale	Bran		S 10	Sandy	- 1/		
(inches)	-	Loans	TIME	- Y500/C		(inches)	loan	5006	Brin	
9 2	0				CONDICTION					
urfa	-	SWOY	Film	SlivE	\$	nrfac	Sandy		* 1	LOWWW.
s lios		lou			DISIM	oil s	team	Fich	Olive	DUDAT
rals						<u>a</u> 30+				
nine	-					nine				
MO 40	0+					× 40				
l be	-					l pel				
Depth below mineral soil surface	0+					Depth below mineral soil surface				
_	-									
60		Soil Olessia	tion I o			60				
A S.		Soil Classifica	Slope 6	Limiting Factor	Groundwater Restrictive Layer	(	Soil Classific	- 1	Limiting Factor	■ Groundwater
eta	*	Profile Co Soil Series/Phase N	ondition Percen		Bedrock	etails •		ondition Percen	t Depth	Restrictive Layer Bedrock
O Ios	S.	- an Concorr Hase N	unio.	☐ Hydric	Hydrologic	= 0.0.	Soil Series/Phase N	Name:	☐ Hydric	Hydrologic
, ,	(			□ Non-hyd	Soil Group	S »			□ Non-hyd	dric Soil Group
Signa	tura		INVESTIG	ATOR INFO	RMATION AND S					
		/way	Hampi	n		Di	ate 6/12/1	7		
Vamo	Pri	nted NA	11	,		10		-		
Title		MAN	16JI Ham	pten		C	ert/Lic/Reg. #	63/21/2		

4869 FORM F Rev. 07/11

	OIL PROF	ILE / CLAS		N INFORMA	TION	SUBS	URFACE COND		OJECT SITES
	251 Gray	RUAS	N	organ Fan	,14		Project Location		
Explora				oring Probe	Explorati	on Symbol #	76 B	Test Pit □ I	Boring □ Probe
			Ground surface			'Organic hori	zon thickness	Ground surface	e elev
		1	ration or to refus				Depth of explor	ation or to refu	sal
0 -	Texture	Consistency	Color	Redox Features	0 +	Texture	Consistency	Color	Redox Features
	Sough	Tilloh	- Xmigor			Sandy	France	Box	
জ 10-	SWAY	- 1/4			S 10	Sandy			
Depth below mineral soil surface (inches)	how	Frank	Burn		Depth below mineral soil surface (inches)	Jan	Friable	Bush	
9 20-				Comm	e (ii				
ırfac	Sayary	7160	Rice	7.	Turtac	Sarrelly	Film	aline	Comm
ns iii	Jan			DISHUN	) Sil	Joan	11/1/		District
S 30-					S 30				
ner					inera				
E 40-					E ≥ 40				
elo					oe e				
ind 50 -					#				
Dec					de 50				
60 − ≥ S.E.	Soil Classific	cation Slop	De Limiting Factor	Groundwater	60	Soil Classifi	cation Slop	e Limiting Factor	
Soil Details by	2	c 2	10	Restrictive Layer	Soil Details by	3	c 2	1 1	Groundwater Restrictive Layer
S.S.	0 11 0 1 1-1	Condition Perco	-	☐ Bedrock  Hydrologic	Detail	Profile Soil Series/Phase	Condition Perce		☐ Bedrock
Soil >>			☐ Hydric ☐ Non-hy	44.	S.S.	our corrowr mass	rumo.	☐ Hydrid	
	ation Symbol # _			Soil Group	( , , (			L Non-ri	Soil Group
0 - 0 10 - 0 20 - 0 20 - 0 20 - 0 20 - 0 20 - 0 20 20 20 20 20 20 20 20 20 20 20 20 2	Texture	Consistency	Color	Redox Features	% (inches)	Texture	Consistency	Color	Redox Features
Sullac					l surfac				
30 40 50					Depth below mineral soil surface				
E 40-					ig				
					3 40				
					h be				
50 -					50 -				
60	C Soil Olassifa	-t I o			60				
S.E.	Soil Classifica	ation Slop	e Limiting Factor	☐ Groundwater ☐ Restrictive Layer	à S.E.	Soil Classific	cation Slope	Limiting Factor	☐ Groundwater
		ondition Perce		☐ Bedrock	Details by	Profile C	Condition Percer	nt Depth	Restrictive Layer Bedrock
3		ame:		Hydrologic	S.S.	oil Series/Phase I		- Dopui	
S.S.	Soil Series/Phase N		☐ Hydric		= 0.0.			☐ Hydric	Hydrologic
S.S.	Our Series/Priase N		☐ Hydric ☐ Non-hyd		Soil 1			☐ Hydric ☐ Non-hy	
		INVESTI	□ Non-hyd	dric Soil Group	Soil N	RE			udric -
Signatur	re Wew	INVESTION OF THE PARTY OF THE P	□ Non-hyd	trio	Soil N	te olilli	7		udric -
	re Wew	INVESTIGATION OF THE PROPERTY	□ Non-hyd	dric Soil Group	SIGNATUR Da	te 6/12/1	7 263/216		udric -



### STATE OF MAINE DEPARTMENT OF INLAND FISHERIES & WILDLIFE 284 STATE STREET 41 STATE HOUSE STATION AUGUSTA ME 04333-0041

CHANDLER E. WOODCOCK

August 4, 2017

Nancy St. Clair St. Clair Associates 34 Forest Lane Cumberland, ME 04021

RE: Information Request - 251 Gray Road Project, Cumberland

### Dear Nancy:

Per your request received July 10, 2017, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and fisheries habitat concerns within the vicinity of the 251 Gray Road Project in Cumberland.

Our Department has not mapped any Essential or Significant Wildlife Habitats that would be directly affected by your project. Based on the letter you submitted, no Significant Vernal Pools were identified during the course of wetland surveys.

### Endangered, Threatened, and Special Concern Species

### **Bats**

Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (*M. lucifugus*, State Endangered); northern long-eared bat (*M. septentrionalis*, State Endangered); and eastern small-footed bat (*M. leibii*, State Threatened). The five remaining bat species are listed as Special Concern: big brown bat (*Eptesicus fuscus*); red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), and tricolored bat (*Perimyotis subflavus*).

While a comprehensive statewide inventory for bats has not been completed, it is likely that several of these species occur within the project area during migration and/or the breeding season. We recommend that you contact the U.S. Fish and Wildlife Service--Maine Fish and Wildlife Complex (Wende Mahaney, 207-902-1569) for further guidance, as the northern long-eared bat is also listed as a Threatened Species under the Federal Endangered Species Act. Otherwise, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.

Letter to Nancy St. Clair Comments RE: 251 Gray Road Project, Cumberland August 4, 2017

### Fisheries Habitat

MDIFW generally recommends that 100-foot undisturbed vegetated buffers be maintained along streams. Buffers should be measured from the edge of stream or associated fringe and floodplain wetlands. Maintaining and enhancing buffers along streams that support coldwater fisheries is critical to the protection of water temperatures, water quality, natural inputs of coarse woody debris, and various forms of aquatic life necessary to support conditions required by many fish species. Based on the project plans, it appears that a 100-foot buffer will be maintained between the project and the Piscataqua River. Therefore, we have no fisheries or fisheries habitats concerns.

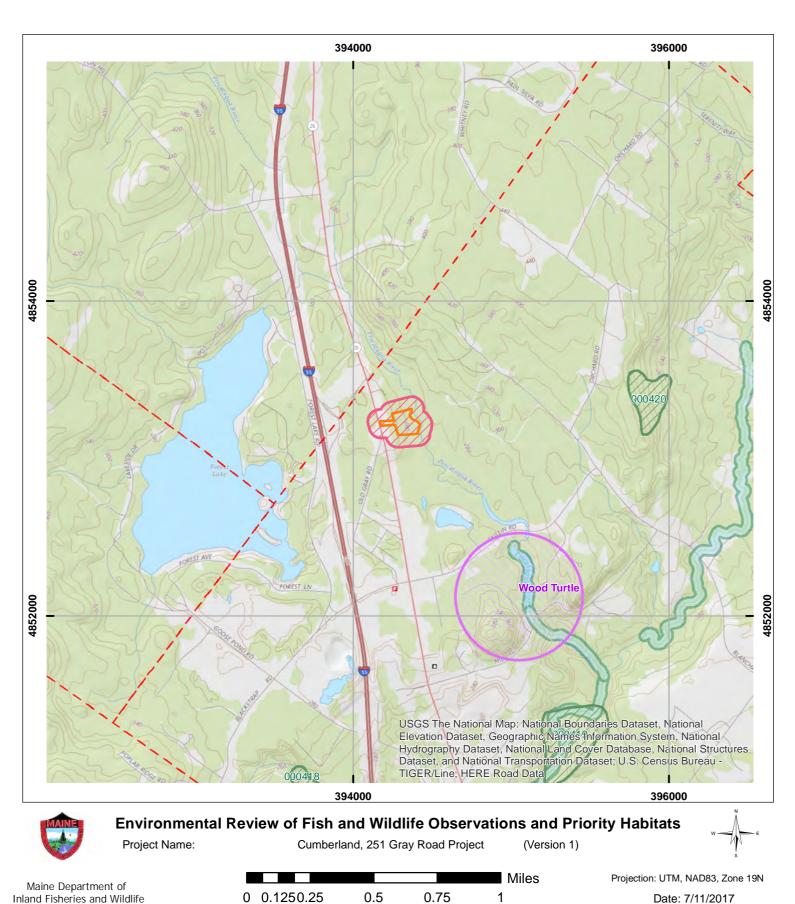
This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

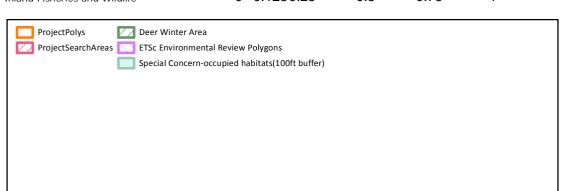
Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

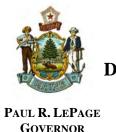
John Perry

**Environmental Review Coordinator** 









# STATE OF MAINE DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY

93 STATE HOUSE STATION AUGUSTA, MAINE 04333

WALTER E. WHITCOMB COMMISSIONER

June 11, 2017

Nancy St. Clair St. Clair Associates 34 Forest Lane Cumberland, ME 04023

Via email: nancy@stclairassociatesmaine.com

Re: Rare and exemplary botanical features in proximity to: Higbee Notch Apartments, Gray Road, Cumberland, Maine

Dear Ms. St. Clair:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received July 5, 2017 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Cumberland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM



PHONE: (207) 287-8044 FAX: (207) 287-8040 WWW.MAINE.GOV/DACF/MNAP Letter to St. Clair Associates. Comments RE: Higbee Notch Apartments, Cumberland July 11, 2017 Page 2 of 2

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

The Natural Areas Program has instituted a fee structure of \$75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for \$150.00 for two hours of our services.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Don Cameron | Ecologist | Maine Natural Areas Program

207-287-8041 | don.s.cameron@maine.gov

D. Con

# Rare and Exemplary Botanical Features within 4 miles of Project: #17014, Higbee Notch Apartments, Gray Road, Cumberland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Broad Beech Fern	L					
	SC	S2	G5	2001-08-28	28	Hardwood to mixed forest (forest, upland)
Engelmann's Spik	erush					
	PE	SH	G4G5Q	1916-08-31	2	Open wetland, not coastal nor rivershore (non-forested, wetland)
Enriched Norther	n Hardwoo	ds Forest				
	<null></null>	S3	GNR	2001-08-28	34	Hardwood to mixed forest (forest, upland)
Fern-leaved False	Foxglove					
	SC	S3	G5	1902-09-02	13	Dry barrens (partly forested, upland), Hardwood to mixed forest (forest, upland)
Great Blue Lobeli	a					
	PE	SX	G5	1905-09	3	Forested wetland, Non-tidal rivershore (non-forested, seasonally wet)
Horned Pondweed	l					
	SC	S2	G5	1913-09-13	9	Tidal wetland (non-forested, wetland)
Marsh Milkwort						
	PE	SH	G5T4	1903-08-18	1	Dry barrens (partly forested, upland), Open wetland, not coastal nor rivershore (non-forested, wetland)
Oak - Hickory For	est					
	<null></null>	S1	G4G5	2014-08-21	5	Hardwood to mixed forest (forest, upland)
Rattlesnake Hawk	weed					
	E	S1	G5T4Q	1909-07	1	Dry barrens (partly forested, upland)
Spotted Pondweed	d					
	Т	S1	G5	1995-10-01	3	Open water (non-forested, wetland)
Spotted Wintergre	een					
	Е	S2	G5	2009-07-26	30	Conifer forest (forest, upland), Hardwood to mixed forest (forest, upland)

Maine Natural Areas Program Page 1 of 2

www.maine.gov/dacf/mnap

# Rare and Exemplary Botanical Features within 4 miles of Project: #17014, Higbee Notch Apartments, Gray Road, Cumberland, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Upper Floodplain	Hardwood	Forest				
	<null></null>	S3	GNR	2010-08-24	18	Forested wetland
Water-plantain Sp	earwort					
	PE	SH	G4	1903-07-29	2	Open water (non-forested, wetland)

Maine Natural Areas Program Page 2 of 2 www.maine.gov/dacf/mnap

### STATE RARITY RANKS

- Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- **S3** Rare in Maine (20-100 occurrences).
- **S4** Apparently secure in Maine.
- S5 Demonstrably secure in Maine.
- SU Under consideration for assigning rarity status; more information needed on threats or distribution.
- **SNR** Not yet ranked.
- **SNA** Rank not applicable.
- S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).
- **Note: State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

### GLOBAL RARITY RANKS

- G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
- G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- G3 Globally rare (20-100 occurrences).
- **G4** Apparently secure globally.
- G5 Demonstrably secure globally.
- **GNR** Not yet ranked.
- **Note:** Global Ranks are determined by NatureServe.

#### STATE LEGAL STATUS

- Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.
- **E** ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
- THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

### **NON-LEGAL STATUS**

- SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
- PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

### **ELEMENT OCCURRENCE RANKS - EO RANKS**

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- <u>Size</u>: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- <u>Condition</u>: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- <u>Landscape context</u>: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

**Note**: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species! http://www.maine.gov/dacf/mnap



# MAINE HISTORIC PRESERVATION COMMISSION 55 CAPITOL STREET 65 STATE HOUSE STATION AUGUSTA, MAINE 04333

KIRK F. MOHNEY DIRECTOR

July 21, 2017

Ms. Nancy J. St. Clair P.E. St. Clair Associates 34 Forest Lane Cumberland, ME 04021

Project: MHPC #0915-17

251 Gray Road

Construction of 3 New Apartment Buildings

Town: Cumberland, ME

Dear Ms. St. Clair:

In response to your recent request, I have reviewed the information received July 10, 2017 to initiate consultation on the above referenced project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

Based on the information provided, I have concluded that the project area may contain one or more prehistoric archaeological sites based on our predictive model of archaeological site location (glacial outwash soils, nearness to stream). Therefore, a Phase I archaeological survey is recommended for this parcel prior to any ground disturbance. A list of qualified prehistoric archaeologists is enclosed along with material explaining the Phase I/II/III approach to archaeological survey. This information can also be found on our website: www.maine.gov/mhpc/project\_review. This office must approve any proposal for archaeological fieldwork.

There will be no architectural or historic archaeological resources affected by this undertaking.

If you have any questions regarding this matter, please contact Dr. Arthur Spiess of this office with questions, if any <u>arthur.spiess@maine.gov</u>

Sincerely,

Kirk F. Mohney

State Historic Preservation Officer

PHONE: (207) 287-2132 FAX: (207) 287-2335

### **David St.Clair Jr**

To:

MM082005@aol.com

Subject:

RE: Single Phase Development CMP Ability to Serve Request

### 6/12/17

Megan Morgan 378 Portland Road Unit 3 Gray, ME 04039

Sent via email to: mm082005@aol.com

RE: CMP Ability to Serve Letter for 251 Gray Road in Cumberland, ME.

Dear Ms. Morgan:

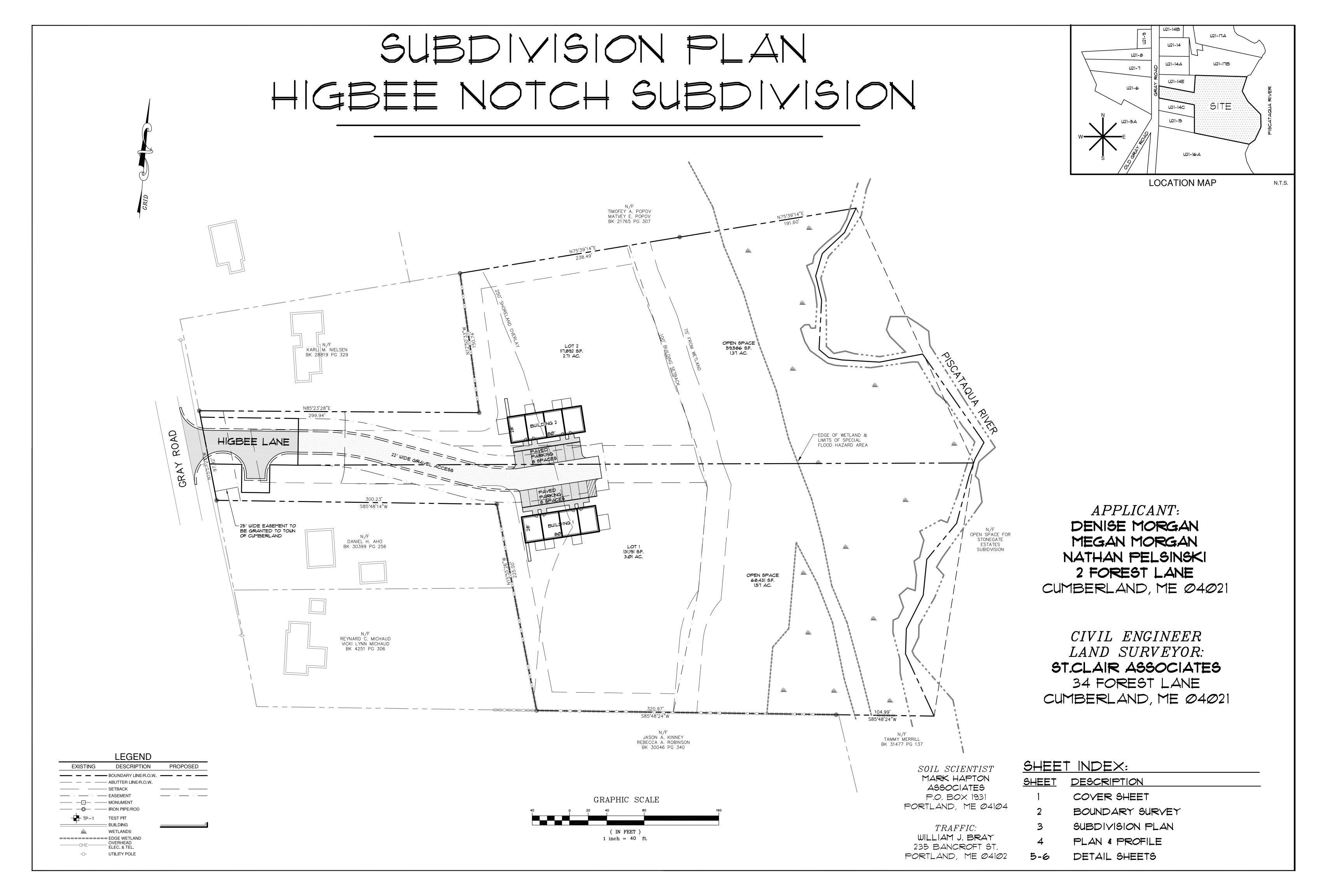
CMP has the ability to serve the proposed project in accordance with our CMP Handbook (web link below). We can provide you the desired pad or pole mounted transformers per your request and city approval, in accordance with our CMP Standards Handbook. If you have any questions on the process, or need help in completion of the documents, please feel free to contact CMP at 800-565-3181.

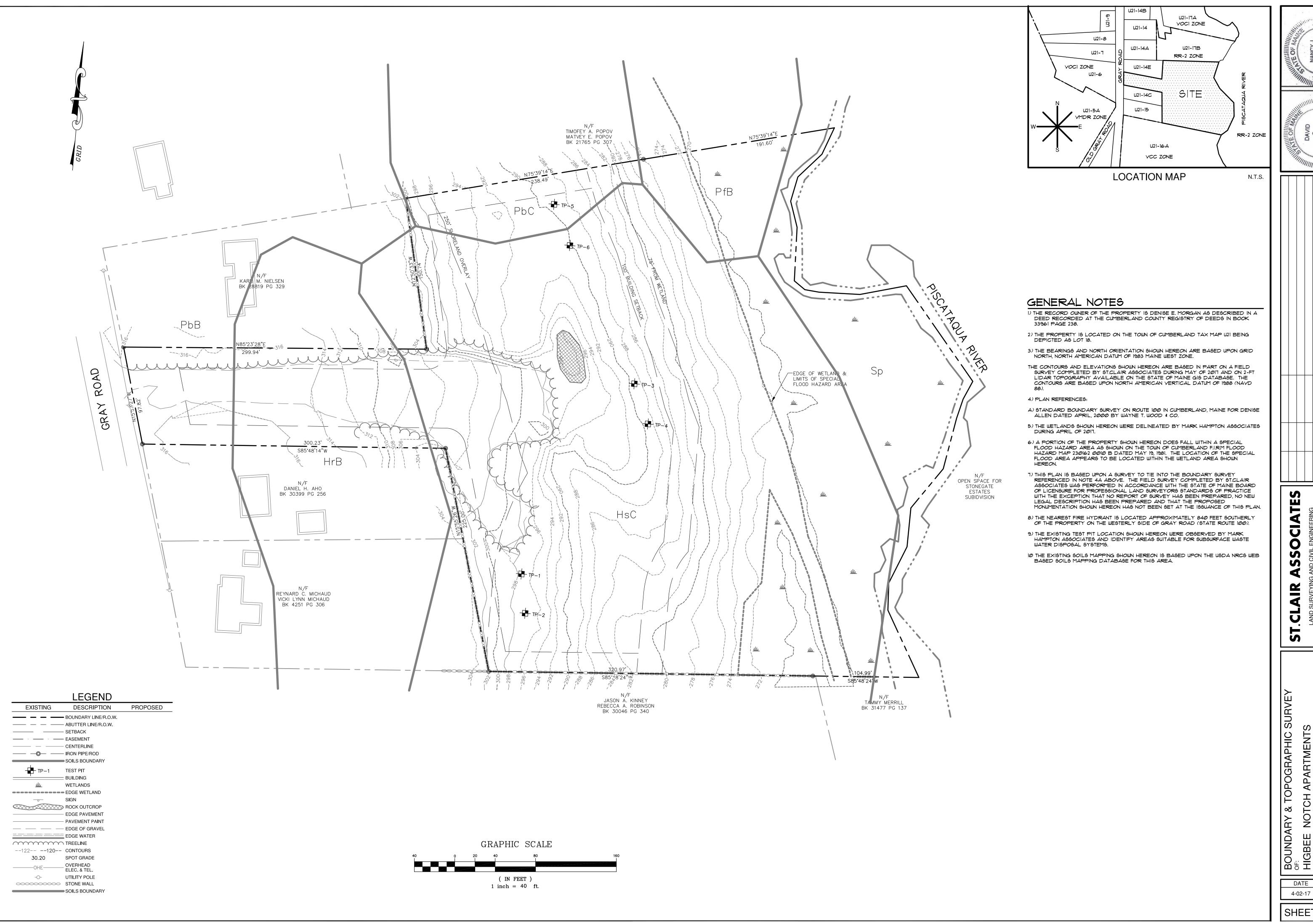
If you have any questions, please contact CMP at 800-565-3181.

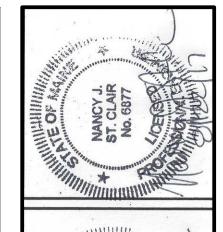
Regards,

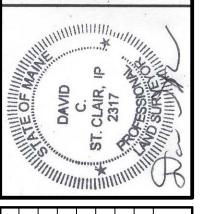
Jamie

Jamie Cough
Energy Services Advisor
Central Maine Power Company
162 Canco Road
Portland, ME 04103
207-842-2367 office
207-458-0382 cell
207-626-4082 fax









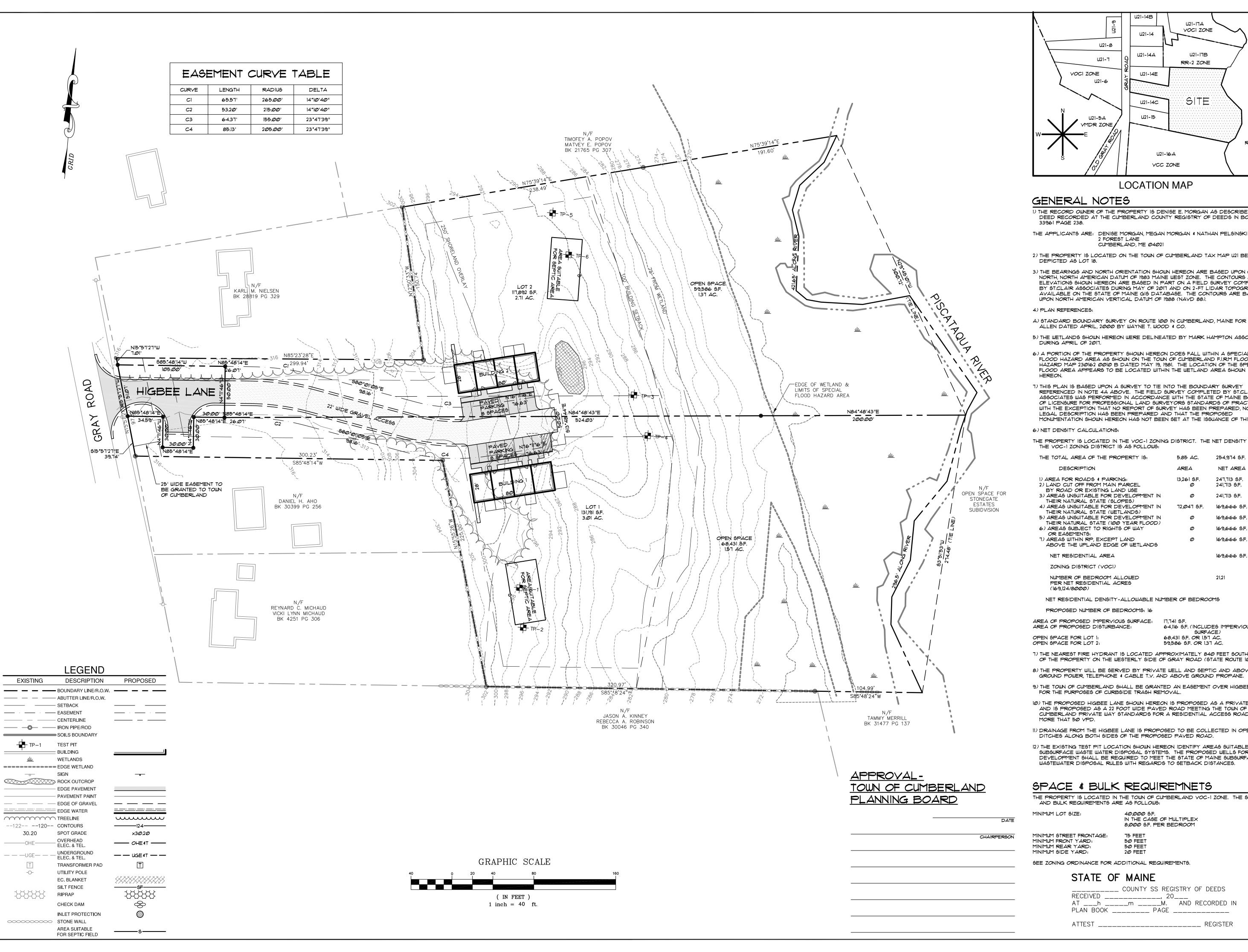
OF NA	DAVID	ST. CLAIR, IP	2317	S ESSOLO	Samuel B	
					s, TES	

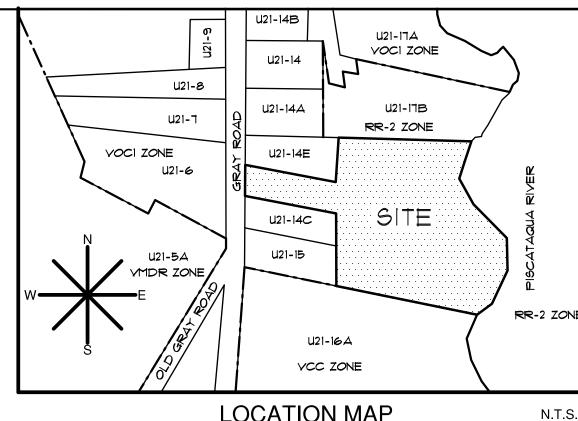
	17 SUBMITTED FOR REVIEW	STATUS:	NDIFIED WITHOUT WRITTEN PERMISSION FROM ST.CLAIR ASSOCIATES ANY ASHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ST.CLAI
	21-17		DIFIC AAA

SCALE

1"-40'

SHEET 2







1) THE RECORD OWNER OF THE PROPERTY IS DENISE E. MORGAN AS DESCRIBED IN A DEED RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK

THE APPLICANTS ARE: DENISE MORGAN, MEGAN MORGAN & NATHAN PELSINSKI 2 FOREST LANE CUMBERLAND, ME 04021

2) THE PROPERTY IS LOCATED ON THE TOWN OF CUMBERLAND TAX MAP U21 BEING

3) THE BEARINGS AND NORTH ORIENTATION SHOWN HEREON ARE BASED UPON GRID NORTH, NORTH AMERICAN DATUM OF 1983 MAINE WEST ZONE. THE CONTOURS AND ELEVATIONS SHOWN HEREON ARE BASED IN PART ON A FIELD SURVEY COMPLETED BY ST.CLAIR ASSOCIATES DURING MAY OF 2017 AND ON 2-FT LIDAR TOPOGRAPHY AVAILABLE ON THE STATE OF MAINE GIS DATABASE. THE CONTOURS ARE BASED UPON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

A) STANDARD BOUNDARY SURVEY ON ROUTE 100 IN CUMBERLAND, MAINE FOR DENISE ALLEN DATED APRIL, 2000 BY WAYNE T. WOOD & CO.

5) THE WETLANDS SHOWN HEREON WERE DELINEATED BY MARK HAMPTON ASSOCIATES DURING APRIL OF 2017.

6) A PORTION OF THE PROPERTY SHOWN HEREON DOES FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON THE TOWN OF CUMBERLAND F.I.RM FLOOD HAZARD MAP 230162 0010 B DATED MAY 19, 1981. THE LOCATION OF THE SPECIAL FLOOD AREA APPEARS TO BE LOCATED WITHIN THE WETLAND AREA SHOWN

1) THIS PLAN IS BASED UPON A SURVEY TO TIE INTO THE BOUNDARY SURVEY REFERENCED IN NOTE 4A ABOVE. THE FIELD SURVEY COMPLETED BY ST.CLAIR ASSOCIATES WAS PERFORMED IN ACCORDANCE WITH THE STATE OF MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS STANDARDS OF PRACTICE WITH THE EXCEPTION THAT NO REPORT OF SURVEY HAS BEEN PREPARED, NO NEW LEGAL DESCRIPTION HAS BEEN PREPARED AND THAT THE PROPOSED MONUMENTATION SHOWN HEREON HAS NOT BEEN SET AT THE ISSUANCE OF THIS PLAN.

6) NET DENSITY CALCULATIONS:

THE PROPERTY IS LOCATED IN THE VOC-1 ZONING DISTRICT. THE NET DENSITY FOR THE VOC-1 ZONING DISTRICT IS AS FOLLOWS:

THE TOTAL AREA OF THE PROPERTY IS:	5.85 AC.	254,974 S.F.
DESCRIPTION	AREA	NET AREA
1) AREA FOR ROADS & PARKING: 2) LAND CUT OFF FROM MAIN PARCEL BY ROAD OR EXISTING LAND USE	13,261 S.F. Ø	247,713 S.F. 241,713 S.F.
3) AREAS UNSUITABLE FOR DEVELOPMENT IN THEIR NATURAL STATE (SLOPES)	Ø	241,713 S.F.
4) AREAS UNSUITABLE FOR DEVELOPMENT IN THEIR NATURAL STATE (WETLANDS)	72,047 S.F.	169,666 S.F.
5) AREAS UNSUITABLE FOR DEVELOPMENT IN THEIR NATURAL STATE (100 YEAR FLOOD)	Ø	169,666 S.F.
6) AREAS SUBJECT TO RIGHTS OF WAY OR EASEMENTS:	Ø	169,666 S.F.
1) AREAS WITHIN RP, EXCEPT LAND ABOVE THE UPLAND EDGE OF WETLANDS	Ø	169,666 S.F.
NET RESIDENTIAL AREA		169,666 S.F.
ZONING DISTRICT (YOCI)		
NUMBER OF BEDROOM ALLOWED PER NET RESIDENTIAL ACRES (169,124/8000)		21.21

NET RESIDENTIAL DENSITY-ALLOWABLE NUMBER OF BEDROOMS

PROPOSED NUMBER OF BEDROOMS: 16

AREA OF PROPOSED DISTURBANCE: 64,16 S.F. (INCLUDES IMPERVIOUS SURFACE) 68,431 S.F. OR 1.57 AC. OPEN SPACE FOR LOT 1: OPEN SPACE FOR LOT 2: 59,586 S.F. OR 1.37 AC.

1) THE NEAREST FIRE HYDRANT IS LOCATED APPROXIMATELY 840 FEET SOUTHERLY OF THE PROPERTY ON THE WESTERLY SIDE OF GRAY ROAD (STATE ROUTE 100).

8) THE PROPERTY WILL BE SERVED BY PRIVATE WELL AND SEPTIC AND ABOVE

9) THE TOWN OF CUMBERLAND SHALL BE GRANTED AN EASEMENT OVER HIGBEE LANE FOR THE PURPOSES OF CURBSIDE TRASH REMOVAL.

10) THE PROPOSED HIGBEE LANE SHOWN HEREON IS PROPOSED AS A PRIVATE WAY AND IS PROPOSED AS A 22 FOOT WIDE PAVED ROAD MEETING THE TOWN OF CUMBERLAND PRIVATE WAY STANDARDS FOR A RESIDENTIAL ACCESS ROAD WITH

II) DRAINAGE FROM THE HIGBEE LANE IS PROPOSED TO BE COLLECTED IN OPEN DITCHES ALONG BOTH SIDES OF THE PROPOSED PAVED ROAD.

12) THE EXISTING TEST PIT LOCATION SHOWN HEREON IDENTIFY AREAS SUITABLE FOR SUBSURFACE WASTE WATER DISPOSAL SYSTEMS. THE PROPOSED WELLS FOR THE DEVELOPMENT SHALL BE REQUIRED TO MEET THE STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES WITH REGARDS TO SETBACK DISTANCES.

# SPACE & BULK REQUIREMNETS

THE PROPERTY IS LOCATED IN THE TOWN OF CUMBERLAND VOC-1 ZONE. THE SPACE AND BULK REQUIREMENTS ARE AS FOLLOWS:

IN THE CASE OF MULTIPLEX

8,000 S.F. PER BEDROOM

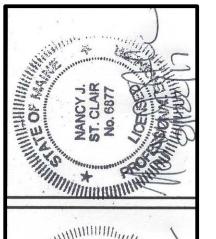
MINIMUM STREET FRONTAGE:

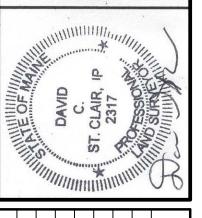
75 FEET 50 FEET 5Ø FEET 20 FEET

SEE ZONING ORDINANCE FOR ADDITIONAL REQUIREMENTS.

### STATE OF MAINE

	1417 /111	· <b>-</b>				
	COUNTY	SS REG	SISTRY	OF	DEEDS	
CEIVED		, 20	)			
h				RE	CORDED	IN
AN BOOK		- PAGE				

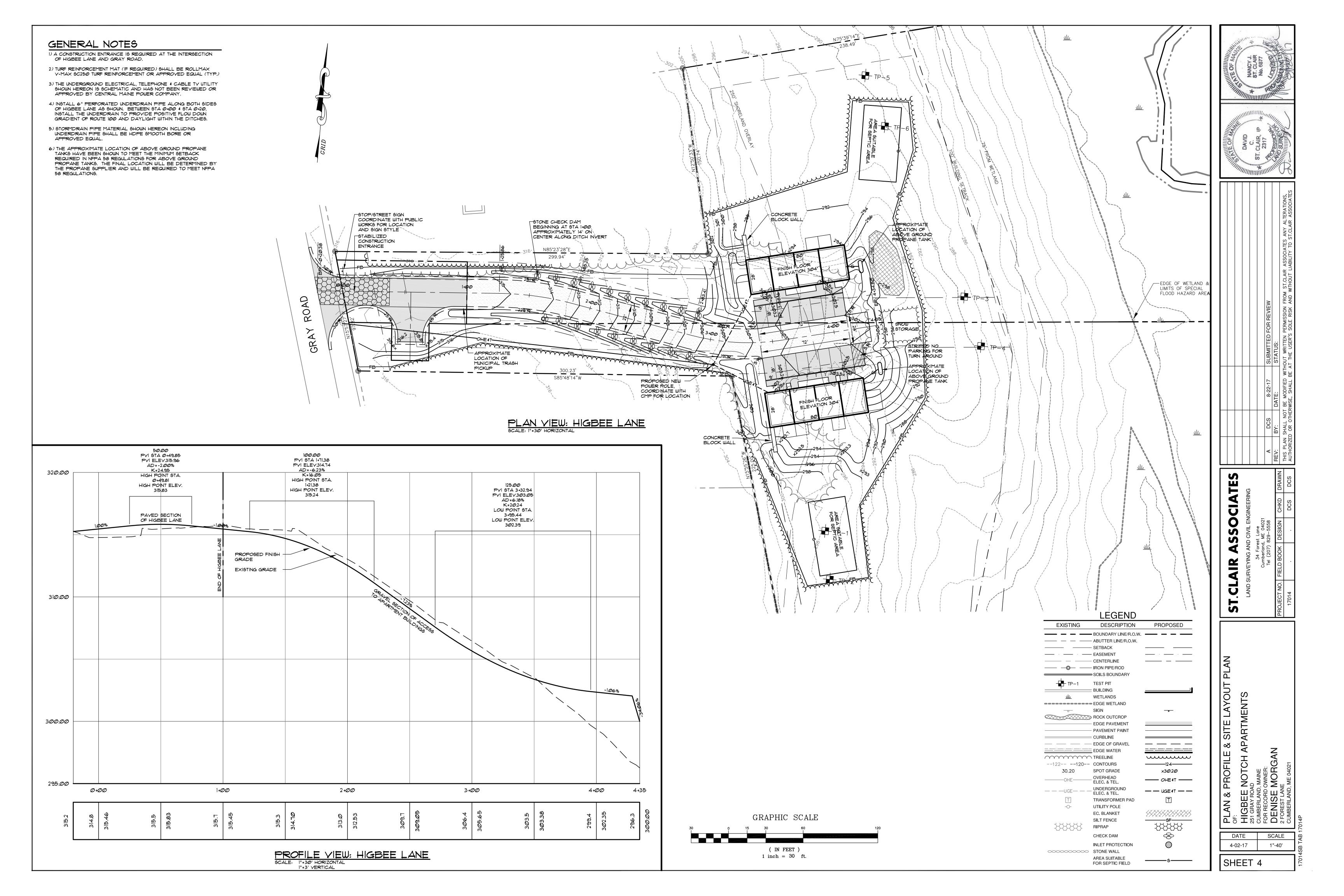




A DCS 8-22-17 SUBMITTED FOR REVIEW REV: BY: DATE: STATUS:
---

SCALE

4-02-17 1"-40' SHEET 3



### A.POLLUTION PREVENTION AND GENERAL HOUSEKEEPING

### I. <u>MINIMIZATION OF EXPOSED SOIL AREAS</u>: IN ORDER TO PROTECT DOWNGRADIENT AREAS AND BUFFERS, AND TO AVOID POTENTIAL EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, OR OTHER NATURAL RESOURCES, THE CONTRACTOR SHALL SEQUENCE AND PHASE EARTHWORKS OPERATIONS TO LIMIT THE AMOUNT OF SITE DISTURBANCE AND/OR EXPOSED SOIL TO ONLY THOSE AREAS NECESSARY TO EFFECTIVELY CONSTRUCT THE PROPOSED IMPROVEMENTS. TO THE EXTENT PRACTICABLE, THE CONTRACTOR SHALL RETAIN NATURAL COVER, AND PERMANENTLY STABILIZE AREAS AS SOON AS EARTHWORKS ARE COMPLETED. LESS EXPOSED SOIL RESULTS IN FEWER EROSION CONTROLS TO INSTALL AND MAINTAIN. IF WORK WITHIN AN AREA IS NOT ANTICIPATED TO BEGIN WITHIN TWO WEEKS TIME, THE CONTRACTOR SHALL CONSIDER LEAVING THE AREA IN ITS NATURALLY EXISTING COVER.

SPILL PREVENTION: CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION. 3.<u>GROUNDWATER PROTECTION</u>: DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA, AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS. 4.<u>FUGITIVE SEDIMENT AND DUST:</u> ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL. FOR OPERATIONS DURING WET MONTHS, THE CONTRACTOR SHALL SWEEP ROADWAYS OR PAVED AREAS AT LEAST ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS TO AVOID TRACKING OF MUD OFF THE SITE, WHERE CHRONIC MUD TRACKING OCCURS, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED. FOR

OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, THE CONTRACTOR SHALL WET DOWN THE ACCESS ROADS WITH JATER ONCE A WEEK OR MORE FREQUENTLY, AS NEEDED. 5. DEBRIS AND OTHER MATERIALS: LITTER, CONSTRUCTION DEBRIS, AND CHEMICALS EXPOSED TO STORMWATER MUST BE PREVENTED FROM 6 NON-STORMWATER DISCHARGES: IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES.

### B. <u>STRUCTURAL AND NON-STRUCTURAL MEASURES</u>

. <u>GEDIMENT BARRIERS:</u> PRIOR TO SOIL DISTURBANCE, THE CONTRACTOR SHALL PROPERLY INSTALL SEDIMENT BARRIERS ACROSS OR AT THE TOE OF A SLOPE AND AT THE DOWNGRADIENT EDGE OF ANY DISTURBED AREA. SEDIMENT BARRIERS SHALL BE INSTALLED IN LOCATIONS WHERE SEDIMENTATION MAY REDUCE THE CAPACITY OF STORMDRAIN SYSTEMS, UPSTREAM OF ADJACENT WETLANDS AND/OR WATERCOURSES, AND OTHER AREAS THAT MAY BE AFFECTED BY SEDIMENT. SEDIMENT BARRIERS SHALL NOT BE USED IN AREAS OF CONCENTRATED FLOWS. SEDIMENT BARRIERS MAY BE SILT FENCE, OR A BERM OF EROSION CONTROL MIX, OR OTHER APPROVED FILTER MATERIALS.

### A SILT FENCE, SILT FENCE IS GENERALLY A BETTER FILTER THAN HAY BALE BARRIERS. SILT FENCES CAN BE USED FOR 60 DAYS OR LONGER DEPENDING ON MANUFACTURER'S RECOMMENDATIONS, PROPER INSTALLATION OF SILT FENCE IS CRITICAL TO ITS FUNCTION (SEE DETAIL). 6. EROSION CONTROL MIX BERMS: EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF THE PROJECT SITE. EROSION CONTROL MIX SHALL

CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. THE MIX COMPOSITION SHALL MEET THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARDS FOR ORGANIC MATTER AND PARTICLE SIZE BY WEIGHT, SOLUBLE SALTS AND PH LEVELS. EROSION CONTROL MIX MUST BE FREE OF REFUSE, CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE EROSION CONTROL MIX BERM MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR OUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING YOIDS AND BRIDGES THAT WOULD ENABLE FINES TO WASH UNDER THE BARRIER. C.CONTINUOUS CONTAINED BERMS (FILTER SOCK): A FILTER SOCK CAN BE INSTALLED. IN AREAS WHERE TRENCHING IS NOT FEASIBLE SUCH AS OVER FROZEN GROUND OR OVER PAVEMENT. A VEHICLE CAN EVEN PASS OVER IT.

### JUNSPECTION AND MAINTENANCE OF SEDIMENT BARRIERS: SEDIMENT BARRIERS ARE EFFECTIVE ONLY IF INSTALLED AND MAINTAINED PROPERLY. IF THERE IS EVIDENCE OF END FLOW ON PROPERLY INSTALLED BARRIERS, THE CONTRACTOR SHALL EXTEND BARRIERS UPHILL OR REPLACE THEM WITH TEMPORARY CHECK DAMS. THE CONTRACTOR SHALL INSPECT SEDIMENT BARRIERS IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THEY SHALL BE REPAIRED BY THE CONTRACTOR 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 SHALL BE REPLACED WITH A TEMPORARY CHECK DAM. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER FILTER BERMS SHOULD BE RESHAPED AS NEEDED. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED. THE CONTRACTOR SHALL MAINTAIN THE SEDIMENT BARRIERS UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. SEDIMENT BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED

2. <u>TEMPORARY CHECK DAMS</u>: MAY BE CONSTRUCTED OF EITHER STONE OR CONTAINED BERMS OF EROSION CONTROL MIX. TEMPORARY CHECK DAMS ALSO MAY TRAP SMALL AMOUNTS OF SEDIMENT BUT SHALL NOT BE USED IN PLACE OF SEDIMENT BARRIERS. THE DAM SHALL BE LEFT IN PLACE PERMANENTLY TO AVOID UNNECESSARY DISTURBANCE OF THE SOIL DURING REMOVAL. IF IT IS NECESSARY TO REMOVE A STONE CHECK DAM FROM A GRASS-LINED CHANNEL, WHICH WILL BE MOWED, THE CONTRACTOR SHALL ENSURE THAT ALL STONES ARE REMOVED, INCLUDING ANY STONES WASHED DOWNSTREAM.

#### a.SIZING AND PLACEMENT: THE MAXIMUM HEIGHT OF THE CHECK DAM SHALL BE 2 FEET. THE CENTER OF THE CHECK DAM MUST BE AT LEAST 6 INCHES LOWER THAN THE OUTER EDGES. THE MAXIMUM SPACING BETWEEN THE DAMS SHALL BE SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM. CHECK DAMS SHALL BE INSTALLED BEFORE RUNOFF IS DIRECTED TO THE SWALE OR DRAINAGE DITCH. STONE CHECK DAMS SHALL BE CONSTRUCTED OF 2 TO 3 INCH STONE, HAND OR MECHANICAL PLACEMENT IS NECESSARY TO PROPERLY INSTALL (SEE DETAIL), THE CONTRACTOR SHALL PROPERLY INSTALL CHECK DAMS TO AVOID UNDERCUTTING AND BYPASS OF THE FLOW AROUND THE ENDS OF THE CHECK DAMS. 6.NSPECTIONS AND MAINTENANCE: THE CONTRACTOR SHALL MAKE REGULAR INSPECTIONS TO ENSURE THAT THE CENTER OF THE DAM IS LOWER

THAN THE EDGES. EROSION CAUSED BY HIGH FLOWS AROUND THE EDGES OF THE DAM SHALL BE CORRECTED IMMEDIATELY. IF EVIDENCE OF SILTATION IN THE WATER IS APPARENT DOWNSTREAM FROM THE CHECK DAM, THE CHECK DAM SHALL BE INSPECTED AND ADJUSTED IMMEDIATELY. CHECK DAMS SHALL BE CHECKED FOR SEDIMENT ACCUMULATION AFTER EACH SIGNIFICANT RAINFALL. SEDIMENT MUST BE REMOVED WHEN IT REACHES ONE HALF OF THE ORIGINAL HEIGHT OR BEFORE. IF IT IS POSSIBLE, LEAVE THE DAM IN PLACE PERMANENTLY. THE STONE MAY BE SPREAD ALONG THE DITCH INVERT TO PROVIDE ADDITIONAL PROTECTION.

3.9TABILIZED CONSTRUCTION ENTRANCE/EXIT: PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL INSTALL A STABILIZED CONSTRUCTION ENTRANCE/EXIT AT ALL POINTS OF ACCESS TO THE EXISTING ROAD. THIS AREA SHALL CONSIST OF A STABILIZED PAD OF AGGREGATE UNDERLAIN WITH FILTER FABRIC. THE CONTRACTOR SHALL MONITOR PAVEMENT EDGES TO FOR CRACKING OR RAVELING OF THE EXISTING PAVEMENT EDGE IN THE AREA OF ANY UNPROTECTED ENTRANCE. IF THE EXISTING PAVEMENT EDGE SHOWS SIGNS OF IMPACT, THEN THE STABILIZED CONSTRUCTION EXIT SHALL BE USED FOR ALL ENTERING AND EXITING CONSTRUCTION VEHICLES. WOVEN OR NONWOVEN GEOTEXTILE FABRIC SHALL BE PLACED OVER THE ENTIRE AREA TO BE COVERED WITH AGGREGATE. THE STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL CONSIST OF A 10' WIDE (MINIMUM) BY 50' LONG (MINIMUM) 6" THICK PAD OF 2"-3" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT THE PAD SHALL EXTEND THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS. THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. WHEN THE STABILIZED PAD BECOMES INEFFECTIVE, THE STONE SHALL BE MOVED ALONG WITH THE COLLECTED SOIL MATERIAL AND REDISTRIBUTED ON SITE IN A STABLE MANNER. A NEW ENTRANCE SHALL E RECONSTRUCTED. THE CONTRACTOR SHALL SWEEP OR WASH PAVEMENT AT EXITS, WHICH HAVE EXPERIENCED MUD-TRACKING ON TO THE PAVEMENT OR TRAVELED WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO . AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

### STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED WITH HAY OR STRAW AT A RATE OF 15 LBS/1/000 S.F. (1.5 TONS PER ACRE) OR WITH A FOUR-INCH LAYER OF EROSION CONTROL MIX. THIS SHALL BE DONE WITHIN 24 HOURS OF STOCKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL. PLACEMENT OF ANY SOIL STOCKPILES WITHIN 100 FEET FROM ANY NATURAL RESOURCES TO BE PRESERVED SHALL BE AVOIDED.

ANY AREAS WITHIN 100 FEET FROM ANY NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 15% MATURE VEGETATION CATCH, SHALL BE

### MULCHED USING TEMPORARY MULCHING WITHIN 1 DAYS OF EXPOSURE OR PRIOR TO ANY STORM EVENT. SEDIMENT BARRIERS SHALL BE PLACED BETWEEN ANY NATURAL RESOURCE AND THE DISTURBED AREA.

<u>5. STORMDRAIN INLET PROTECTION:</u> IS A SEDIMENT FILTER INSTALLED AROUND A STORM DRAIN DROP INLET OR CURB INLET TO PREVENT SEDIMENT FROM ENTERING A STORM DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA. THE INLET PROTECTION DEVICE SHALL BE CONSTRUCTED IN A MANNER THAT WILL FACILITATE CLEAN-OUT AND DISPOSAL OF TRAPPED SEDIMENTS AND MINIMIZE NTERFERENCE WITH CONSTRUCTION ACTIVITIES. ANY RESULTANT PONDING OF STORMWATER MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.

### a.MANUFACTURED SEDIMENT BARRIERS AND FILTERS: INCLUDE VARIOUS TYPES OF SYSTEMS SUCH AS THE "SILT SACK" OR OTHER MANUFACTURED MATERIALS. THESE MEASURES ARE ACCEPTABLE AS LONG AS THEY ARE INSTALLED, USED AND MAINTAINED AS SPECIFIED BY THE VENDOR OR 6. INSPECTION AND MAINTENANCE OF STORMORAIN INLET PROTECTION: THE CONTRACTOR SHALL INSPECT STRUCTURES BEFORE AND AFTER EACH RAIN EVENT AND SHALL REPAIR AS NEEDED. IF THE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE THE CONTRACTOR SHALL CLEAN AND REPLACE THE FILTER, SEDIMENT SHALL BE REMOVED AND THE STORMDRAIN SEDIMEN FILTER RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. SEDIMENT FILTERS SHALL BE REMOVED

AND THE AREA STABILIZED AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED. THE CONTRACTOR SHALL CLEAN ALL

CATCHBASINS AND STORMDRAIN INLETS AT THE END OF CONSTRUCTION AND AFTER THE SITE HAS BEEN FULLY STABILIZED. <u>1. STORMWATER CHANNELS:</u> DITCHES, SWALES, AND OTHER OPEN STORMWATER CHANNELS SHALL BE CONSTRUCTED AND STABILIZED USING MEASURES THAT ACHIEVE LONG-TERM EROSIÓN CONTROL. DITCHES, SWALES, AND OTHER OPEN STORMWATER CHANNELS SHALL BE CONSTRUCTED N SECTIONS SO THAT THE GRADING, SHAPING, AND INSTALLATION OF THE PERMANENT LINING ON EACH SECTION CAN BE COMPLETED THE SAME DAY. IF A CHANNEL'S FINAL GRADING OR LINING INSTALLATION MUST BE DELAYED, THEN EITHER DIVERSION BERMS MUST BE USED TO DIVERT STORMWATER AWAY FROM THE CHANNEL, PROPERLY-SPACED CHECK DAMS MUST BE INSTALLED IN THE CHANNEL TO SLOW THE WATER VELOCITY, OR A TEMPORARY LINING SHALL BE INSTALLED ALONG THE CHANNEL TO PREVENT SCOURING.

#### 8. TRENCH OR FOUNDATION DE-WATERING: ACCUMULATED WATER IN TRENCHES, FOUNDATIONS, PONDS, AND OTHER AREAS THAT RETAIN WATER AFTER EXCAVATION SHALL BE CAREFULLY REMOVED BY THE CONTRACTOR TO AVOID DOWNSTREAM IMPACTS DUE TO THE HEAVILY SILTED WATER. THE COLLECTED WATER SHALL BE REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, AND SHALL BE REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE. LIKE A SEDIMENTATION BASIN OR DEVICE SUCH AS A "DIRT BAG" FILTER OR EQUAL. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. THE CONTRACTOR SHALL USE A NON-WOVEN GEOTEXTILE SEDIMENT CONTROL BAG SUCH AS A "DIRT BAG" OR EQUIVALENT AS A PREFERRED OPTION.

### C. STABILIZATON MEASURES

. <u>TEMPORARY STABILIZATION:</u> THE CONTRACTOR SHALL STABILIZE ANY EXPOSED SOILS THAT WILL NOT BE WORKED FOR MORE THAN 1 DAYS WITH CH OR OTHER NON-ERODABLE COVER. STABILIZE AREAS WITHIN 15 FEET OF A WETLAND OR WATERBODY WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.

2. <u>PERMANENT STABILIZATION</u>: IF THE AREA HAS BEEN BROUGHT TO FINAL GRADE OR WILL NOT BE WORKED FOR MORE THAN ONE YEAR, THE CONTRACTOR SHALL PERMANENTLY STABILIZE THE AREA WITHIN 1 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIPRAP, OR PAVER SUBBASE. IF USING VEGETATION FOR STABILIZATION, AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS'S PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS'S AND SCHEDULE SODDING, PLANTING, AND SEEDING TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED. IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT THE CONTRACTOR SHALL RESEED AND MULCH THE AREAS. ONE OR MORE OF THE FOLLOWING SHALL APPLY TO A PARTICULAR SITE. a. SEEDED AREAS: FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR 6.50DDED AREAS: FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF. C.PERMANENT MULCH: FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE MDEP APPROVED APPLICATION

RATES AND LIMITATIONS. DEPENDENT OF AREAS STABILIZED WITH RIPRAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIPRAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIPRAP. 6. PAVEMENT AREAS: FOR PAVEMENT AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE PAVEMENT IS COMPLETED. f. DITCHES, CHANNELS, AND SWALES: FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH A 90% COVER OF HEALTHY VEGETATION, WITH A WELL-GRADED RIPRAP LINING, OR WITH ANOTHER NON-EROSIVE LINING SUCH AS CONCRETE OR PAVEMENT. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE CHANNEL LINING, UNDERCUTTING OF THE CHANNEL BANKS, OR DOWN-CUTTING OF THE CHANNEL.

# 3. <u>REMOYAL OF STABILIZATION MEASURES</u>: WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED THE CONTRACTOR SHALL REMOVE ANY TEMPORARY SEDIMENT CONTROL MEASURES (SUCH AS SILT FENCE, ETC.), REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE THE AREA. SILT FENCE SHALL BE REMOYED BY CUTTING THE FENCE MATERIALS AT GROUND LEVEL TO AVOID ADDITIONAL SOIL DISTURBANCE.

THE FOLLOWING SHALL APPLY IN AREAS TO RECEIVE TEMPORARY SEEDING: 1. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. INSTALL EROSION CONTROL MEASURES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, SEDIMENT BASINS AND GRASSED

2. APPLY LIMESTONE AND FERTILIZER AT THE RATE OF 600 POUNDS PER ACRE OR 13.8 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 (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). WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF

3. SEEDING RATES AND DEPTHS SHALL BE AS SPECIFIED ON THE PLAN SET, OR AS IDENTIFIED IN THE TABLE BELOW. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10 % WHEN HYDROSEEDING.

4. APPLY MULCH OVER SEEDED AREA.

5.TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED. AT A MINIMUM, 95% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER BARRIERS, CHECK DAMS, ETC.).

### TEMPORARY SEEDING TABLE

E.TEMPORARY MULCHING

SEED	Lb./Ac.	SEEDING	DEPTHSEEDING	DATES	NOTES
WINTER RYE	112	(2 Bu)	1-1.5 IN	8/15-10/1	GOOD FOR FALL SEEDING, SELECT HARDY SPECIES
					SUCH AS AROOSTOOK RYE.
OATS	80	(2.5 Bu)	1-1.5 IN	4/1-7/1 (SPRIN	G) 8/15-9/15 (FALL)
					BEST FOR SPRING SEEDING. FALL SEEDING REQUIRES MULCH
ANNUAL RYEGRASS	400		.25 IN	4/1-7/1	GROWS QUICKLY BUT IS OF SHORT DURATION,
					USE WHERE APPEARANCE IS IMPORTANT. CAN BE USED
					THROUGHOUT GROWING SEASON, IF MULCHED.
SUDANGRASS	40	(1.0 Bu)	0.5-1.0 IN	5/15-8/15	GOOD GROWTH DURING HOT SUMMER
PERENNIAL RYEGRASS	40	(2.0 Bu)	<i>0.</i> 25 IN	8/15-9/15	GOOD COVER, LONGER LASTING THAN ANNUAL RYEGRASS.
					CAN BE USED THROUGHOUT GROWING SEASON, IF MULCHED.
TEMPORARY MULCH				10/1-4/1	REFER TO TEMPORARY MULCHING OR PERMANENT VEGETATIO

APPLY TEMPORARY MULCHING TO PROTECT THE EXPOSED SOIL SURFACE AND AID IN THE GROWTH OF VEGETATION. I. IN SENSITIVE AREAS (WITHIN 100 FT OF STREAMS, WETLANDS AND IN LAKE WATERSHEDS) TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF EXPOSING SOIL OR PRIOR TO ANY STORM EVENT 2. IN OTHER AREAS, THE TIME PERIOD CAN RANGE FROM 14 TO 30 DAYS, DEPENDING ON SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS. 3 ARFAS IIILICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED. SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING. 4. AREAS WHICH CANNOT BE SEEDED WITHIN THE GROWING SEASON SHALL BE MULCHED FOR OVER-WINTER PROTECTION AND THE AREA SHALL BE SEEDED AT THE BEGINNING OF THE GROWING SEASON.

5.MULCH CAN BE USED IN CONJUNCTION WITH TREE, SHRUB, VINE, AND GROUND COVER PLANTINGS. 6.MULCH ANCHORING SHALL BE USED ON SLOPES GREATER THAN 5% IN LATE FALL (PAST SEPTEMBER 15), AND OVER-WINTER (SEPTEMBER 15 -WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON), IT SHALL BE APPLIED TO A DEPTH OF FOUR INCHES (150-200 LBS, OF HAY PER 1000 SQ, FT OR DOUBLE STANDARD APPLICATION RATE), SEEDING CANNOT GENERALLY BE EXPECTED TO GROW UP THROUGH THIS DEPTH OF MULCH AND WILL BE SMOTHERED. IF VEGETATION IS DESIRED, THE MULCH WILL NEED TO BE REMOVED IN THE SPRINGTIME AND THE AREA SEEDED AND MULCHED.

S.ALL MULCHES MUST BE INSPECTED PERIODICALLY BY THE CONTRACTOR, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION, IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, RE-INSTALL THE NETS AS NECESSARY AFTER REPAIRING. DAMAGE TO THE SLOPE. INSPECTIONS SHALL TAKE PLACE UNTIL GRASSES ARE FIRMLY ESTABLISHED (95% SOIL SURFACE COVERED WITH GRASS, WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, THE CONTRACTOR SHALL INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE, REPAIR AS NEEDED. 10. THE CHOICE OF MATERIALS FOR MULCHING SHALL BE BASED ON SOIL, SITE CONDITIONS AND SEASONS. RECOMMENDED MULCHES INCLUDE HAY AND STRAW OR EROSION CONTROL MIX.

a. ORGANIC MULCHES INCLUDING HAY AND STRAW MUST BE AIR-DRIED, FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS. 6.APPLICATION RATE SHALL BE 2 BALES (10-90 POUNDS) PER 1000 SQ FT OR 1.5 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 15 TO 90 % OF THE GROUND SURFACE, HAY MULCH IS SUBJECT TO WIND BLOWING UNLESS KEPT MOIST OR ANCHORED. C. ANCHORING METHODS INCLUDE NETTING OVER HAY WITH JUTE, WOOD FIBER OR PLASTIC NETTING ANCHORED TO THE SOIL SURFACE. STAPLE MATS 3.EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF THE PROJECT SITE. IT MUST CONSIST PRIMARILY OF ORGANIC MATERIAL AND WILL

INCLUDE ANY OF THE FOLLOWING: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK OR OTHER ACCEPTABLE PRODUCTS BASED ON A SIMILAR RAW SOURCE. WOOD OR BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX. 6. EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. C.EROGION CONTROL MIX SHALL BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE MAINE DEP STANDARDS: JUHEN USED AS MULCH, A MINIMUM 4" THICK LAYER OF EROSION CONTROL MIX SHALL BE USED AS A STAND-ALONE REINFORCEMENT: . ON SLOPES 2 HORIZONTAL TO 1 VERTICAL OR LESS.

ON FROZEN GROUND OR FORESTED AREAS. 3.AT THE EDGE OF GRAVEL PARKING AREAS AND AREAS UNDER CONSTRUCTION.

4. OTHER REINFORCEMENT BMPS (I.E. RIPRAP) SHALL BE USED: a.ON STEEPER SLOPES GREATER THAN 2:1 AND

**b.SLOPES WITH GROUNDWATER SEEPAGE AND** C.AT LOW POINTS WITH CONCENTRATED FLOWS AND d.IN GULLIES

### 5.THE MULCH MAY BE PLACED WITH A HYDRAULIC BUCKET, WITH A PNEUMATIC BLOWER OR BY HAND. IT SHALL BE PLACED EVENLY AND MUST PROVIDE 100 % SOIL COVERAGE, WITH THE SOIL TOTALLY INVISIBLE. e. ANY REQUIRED REPAIRS SHALL BE MADE BY THE CONTRACTOR IMMEDIATELY, WITH ADDITIONAL EROSION CONTROL MIX PLACED ON TOP OF THE MULCH TO REACH THE RECOMMENDED THICKNESS, WHEN THE MIX IS DECOMPOSED, CLOGGED WITH SEDIMENT, ERODED OR INEFFECTIVE, IT SHALL BE REPLACED OR REPAIRED. EROSION CONTROL MIX MULCH SHOULD BE LEFT IN PLACE. VEGETATION ADDS STABILITY AND SHOULD BE PROMOTED. IF THE MULCH NEEDS TO BE REMOVED SPREAD IT OUT INTO THE LANDSCAPE.

A.IF USING SYNTHETIC, SPRAY-ON EMULSIONS THAT ARE MIXED WITH WATER TO HOLD WOOD FIBER, HYDRO-MULCHES OR STRAW TO THE SOIL SURFACE, THE CONTRACTOR SHALL CONSULT WITH THE MANUFACTURER TO DETERMINE ADEQUATE APPLICATION RATES, ESPECIALLY FOR STEEP SLOPES AND FALL APPLICATIONS. 6.AYOID APPLICATION DURING WINDY DAYS. A 24-HOUR CURING PERIOD AT A SOIL TEMPERATURE HIGHER THAN 45 DEGREES FAHRENHEIT IS OFTEN S.APPLICATION SHALL GENERALLY BE HEAVIEST AT EDGES OF AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHALL HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR MAY BE SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL, APPLYING STRAW AND BINDER TOGETHER IS RECOMMENDED. dINCREASE SEEDING RATES WHEN USING THIS METHOD.

14. EROSION CONTROL BLANKETS AND MATS: a.MANUFACTURED COMBINATIONS OF MULCH AND NETTING SHALL BE USED AS ADDED PROTECTION IN AREAS PRONE TO EROSION. DURING THE GROWING SEASON (APRIL 15 - SEPTEMBER 15) USE MATS (OR MULCH AND NETTING) ON: THE BASE OF GRASSED WATERWAYS b.STEEP SLOPES (15% OR GREATER)

S.ANY DISTURBED SOIL WITHIN 1000 FEET OF LAKES, STREAMS AND WETLANDS b.DURING THE LATE FALL AND WINTER (SEPTEMBER 15 - APRIL 15) USE HEAVY GRADE MATS ON ALL AREAS NOTED ABOVE PLUS USE LIGHTER GRADE MATS (OR MULCH AND NETTING) ON: A SIDE SLOPES OF GRASSED WATERWAYS b.MODERATE SLOPES (12128%)

THERE MAY BE CASES WHERE MATS WILL BE NEEDED ON SLOPES FLATTER THAN 8%. C.THE MOST CRITICAL ASPECT OF INSTALLING MATS IS OBTAINING FIRM CONTINUOUS CONTACT BETWEEN THE MAT AND THE SOIL, WITHOUT SUCH CONTACT THE MAT 16 USELESS AND EROSION OCCURS, INSTALL MATS AND STAPLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

### F. PERMANENT VEGETATION: THE FOLLOWING SHALL APPLY IN AREAS TO RECEIVE PERMANENT VEGETATION:

1. SEEDBED PREPARATION a.GRADE AS FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND 6.APPLY LIMESTONE AND FERTILIZER AT THE RATE OF 800 POUNDS PER ACRE OR 18.4 POUNDS PER 1,000 SQUARE FEET USING 10-20-20 (N-P2O5-K2O) OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQ. FT) C.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 SHALL BE ON THE GENERAL CONTOUR CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHALL BE ROLLED TO FIRM THE SEEDBED

WHEREVER FEASIBLE. REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION. DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL E.INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA SHALL BE TILLED AND FIRMED AS ABOVE.

A.SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES.

b.PERMANENT SEEDING SHALL BE MADE 45 DAYS PRIOR TO THE FIRST KILLING FROST OR AS A DORMANT SEEDING WITH MULCH AFTER THE FIRST. KILLING FROST AND BEFORE SNOWFALL. WHEN CROWN VETCH IS SEEDED IN LATER SUMMER, AT LEAST 35% OF THE SEED SHALL BE HARD SEED (UNSCARIFIED). C.IF SEEDING CANNOT BE DONE WITHIN THE SEEDING DATES, DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD AND MULCH ACCORDING TO THE TEMPORARY MULCHING REQUIREMENTS AND WINTER STABILIZATION AND CONSTRUCTION METHODS DESCRIBED HEREIN TO PROTECT THE SITE.

a. INLESS OTHERWISE SPECIFIED WITHIN THE PLAN SET, THE CONTRACTOR SHALL SELECT A SEED MIXTURE THAT IS APPROPRIATE FOR THE SOIL TYPE AND MOISTURE CONTENT AS FOUND AT THE SITE, AND FOR THE AMOUNT OF SUN EXPOSURE AND LEVEL OF USE. ALL BUFFER PLANTINGS SHALL USE NATIVE SEED AND PLANTINGS. b.INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE AND AMOUNT OF INOCULANT.

C.APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER. dNORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2INCH. S.HYDROSEEDING WITH MULCH MAY BE LEFT ON SOIL SURFACE.

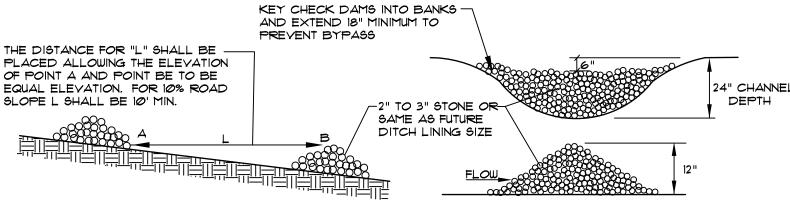
. WHERE FEASIBLE, EXCEPT WHERE EITHER A CULTIPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG. SEEDING OPERATIONS SHOULD BE ON THE CONTOUR. g.APPLY MULCH ACCORDING TO THE TEMPORARY MULCHING REQUIREMENTS DESCRIBED HEREIN. ALL NEWLY SEEDED AREAS WILL NEED MULCHING AND MULCH ANCHORING. 4. <u>HYDROSEEDING:</u>
9. THE CONTRACTOR SHALL PREPARE THE SEEDBED IN THE CONVENTIONAL WAY OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND TO

REMOVE SURFACE STONES LARGER THAN 6 INCHES IN DIAMETER. 6.SLOPES SHALL BE NO STEEPER THAN 2 TO 1 (2 FEET HORIZONTALLY TO 1 FOOT VERTICALLY). C.LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. d.THE CONTRACTOR SHALL USE STRAW MULCH AND HOLD IT WITH ADHESIVE MATERIALS OR 500 POUNDS PER ACRE OF WOOD FIBER MULCH.

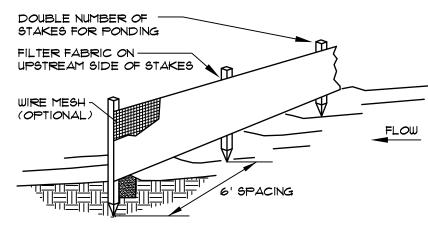
e.SEEDING RATES SHALL BE INCREASED 10% WHEN HYDROSEEDING. DORMANT SEEDING SHALL NOT BE USED SINCE THIS IS A WATERSHED SENSITIVE TO WATER QUALITY IMPACTS. THE SITE SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT SEEDING BY SEPTEMBER 15.

SODDING: SODDING MAY BE USED BETWEEN SEPTEMBER 15TH, AND NOVEMBER15TH WHEN NEW SEEDING CANNOT BE GUARANTEED. GROUND PREPARATION AND PROPER MAINTENANCE ARE AS IMPORTANT WITH SOD AS WITH SEED. LOCATIONS PARTICULARLY SUITED TO STABILIZATION WITH SOD ARE WATERWAYS CARRYING INTERMITTENT FLOW, AREAS AROUND DROP INLETS IN GRASSED SWALES\_AND RESIDENTIAL OR COMMERCIAL LAWNS WHERE AESTHETICS IS A FACTOR.

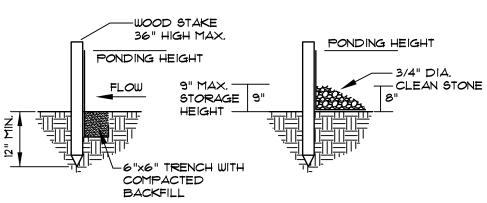
BEFORE LAYING SOD, PROVIDE ADEQUATE DRAINAGE WHERE INTERNAL WATER MOVEMENT, ESPECIALLY AT THE TOE OF SLOPES, MAY CAUSE SEEPS OR SOIL SLIPPAGE. GRADE SLOPES 2:1 OR FLATTER. 2. THE CONTRACTOR SHALL PROVIDE THE BEST POSSIBLE SOIL CONDITIONS FOR SODDING. THE DESIRABLE SOIL TEXTURES INCLUDE SANDY LOAM, FILL AREAS SHALL BE COMPACTED ENOUGH TO PREVENT UNEVEN SETTLING. THE ENTIRE SURFACE TO BE SODDED SHALL BE FREE FROM LARGE CLODS, STONES, OR OTHER DEBRIS. LOOSEN SOIL TO A DEPTH OF I INCH AND THOROUGHLY DAMPENED, IF NOT ALREADY MOIST. INCORPORATE NEEDED LIME AND FERTILIZER UNIFORMLY, SOD SHALL NOT BE LAID ON DRY SOIL 4.LAY STRIPS OF SOD AT RIGHT ANGLES TO DIRECTION OF SLOPE OR FLOW OF WATER STARTING AT THE LOWEST ELEVATION, WEDGE THE EDGES AND ENDS OF THE SOD STRIPS TOGETHER AND TAMP OR ROLL. STAGGER JOINTS, MAKE THE TOP OF THE SOD STRIPS FLUSH WITH THE TOP OF THE 5.USE WIRE STAPLES, FINE MESH WIRE OR WOOD PINS AND BINDER TWINE ON VERY STEEP SLOPES TO HOLD SOD IN PLACE UNTIL SECURED BY



STONE CHECK DAM NOT TO SCALE



PREFABRICATED SILT FENCE MUST BE INSTALLED PER MANUFACTURER SPECIFICATIONS



WITH TRENCHING WITHOUT TRENCHING

SILT FENCE AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

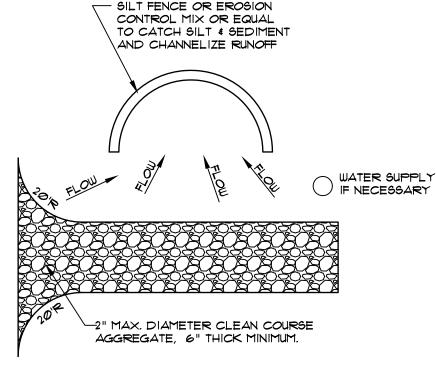
SHOULD THE FABRIC ON A SILT FENCE OF FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY

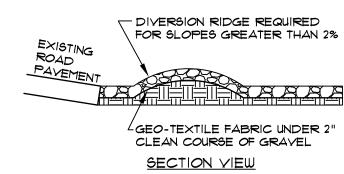
SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.

ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.

SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

# SILT-FENCE DETAIL





1) THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT OF WAY. THIS MAY REQUIRE TOP DRESSING. REPAIR AND/OR CLEANOUT OF ANY MEASURES TO TRAP

2) WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY.

3) WHEN WASHING IS REQUIRED, IT SHALL BE COMPLETED ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

4) ADDITIONAL SWEEPING MAY ALSO BE REQUIRED.

# CONSTRUCTION ENTRANCE DETAIL NOT TO SCALE

IN GRASSED SWALES AND EMBANKMENT AREAS SEEDING MIX SHALL CONSIST OF: LBS/ACRE LBS/1000 S.F CREEPING RED FESCUE REDTOP 0.05

### CONSTRUCTION SCHEDULE THE PROJECT IS PROPOSED IN PHASES. THE SCHEDULE BELOW INDICATES A TYPICAL SCHEDULE FOR EACH PHASE. SITE IMPROVEMENTS FOR PHASE I WILL BEGIN UPON RECEIPT OF ALL PERMITS AND APPROVALS. THE FOLLOWING SCHEDULE IS ANTICIPATED FOR THE CONSTRUCTION OF THE SITE IMPROVEMENTS I AND SUBSEQUENT PHASES.

20

SCHEDULE

TALL FESCUE

1. ESTIMATED CONSTRUCTION TIME: 2. EROSION CONTROL MEASURES PLACED. 3. SITE CLEARING AND GRUBBING 4. CONSTRUCTION OF PROPOSED ROAD: 5. CONSTRUCTION OF RESIDENTIAL HOME:

1. REMOVAL OF EROSION CONTROL DEVICES

6. WINTER CONSTRUCTION-

WEEK 8 - WEEK 52 NOV I THRU APRIL 15 LIPON FINAL PROJECT COMPLETION

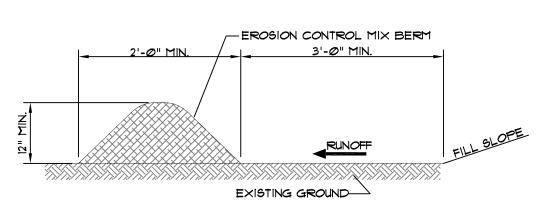
1 YEAR - 5 YEARS

WEEK 1 - WEEK 2

WEEK 2 - WEEK 4

WEEK 4 - WEEK 8

0.46



### WOOD WASTE COMPOST/BARK FILTER BERMS

A) EROSION CONTROL MIX MUST CONSIST PRIMARILY OF ORGANIC MATERIALS, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE AT THE ORGANIC COMPONENT OF THE MIX. THE MIX SHALL CONFORM TO THE FOLLOWING STANDARDS:

B) EROSION CONTROL MIX SHALL CONTAIN A WELL -GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS:

1) THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80%% AND 100%, DRY WEIGHT

2) PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70% MAXIMUM OF 85%, PASSING A 0.75" SCREEN

3) THE ORGANICS PORTION NEEDS TO BE FIBROUS AND ELONGATED.

4) LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX. 5) SOLUBLE SALTS CONTENT SHALL BE LESS THAN 4.0 MMHOS/CM.

6) THE PH SHOULD FALL BETWEEN 5.0 AND 8.0 THE COMPOSTED BERM SHALL BE PLACED, UNCOMPACTED, ALONG A RELATIVELY LEVEL CONTOUR.

NOTE: EROSION CONTROL MIX FILTER BERMS MAY BE USED IN COMBINATION WITH SILT FENCE TO IMPROVE SEDIMENT REMOVAL AND PREVENT CLOGGING OF THE EROSION CONTROL MIX BERM BY LARGER SEDIMENT PARTICLES. (SILT FENCE PLACED TO FILTER RUNOFF BEFORE BERM)

NOTE: EROSION CONTROL MIX FILTER BERM CAN BE USED IN LIEU OF SILT FENCE, CONTRACTOR'S CHOICE.

# WOOD WASTE COMPOST/BARK FILTER BERM

NOT TO SCALE

### DESCRIPTION

THE COMPOSITE TURF REINFORCEMENT MAT (C-TRM) SHALL BE A MACHINE-PRODUCED MAT OF 10% STRAW AND 30% COCONUT FIBER MATRIX INCORPORATED INTO PERMANENT THREE-DIMENSIONAL TURF REINFORCEMENT MATTING. THE MATRIX SHALL BE EVENLY DISTRIBUTED ACROSS THE ENTIRE WIDTH OF THE MATTING AND STITCH BONDED BETWEEN A HEAVY DUTY UV STABILIZED NETTING WITH 0.50x0.50 INCH (1.27x1.27 CM) OPENINGS, AN ULTRA HEAVY UV STABILIZED DRAMATICALLY CORRUGATED (CRIMPED) INTERMEDIATE NETTING WITH 0.5x0.5 INCH (1.27x1.27 CM) OPENINGS, AND COVERED BY AN HEAVY DUTY UV STABILIZED NETTING WITH 0.5×0.5 INCH (1.27×1.27 CM) OPENINGS. THE MIDDLE CORRUGATED NETTING SHALL FORM PROMINENT CLOSELY SPACED RIDGES ACROSS THE ENTIRE WIDTH OF THE MAT. THE THREE NETTINGS SHALL BE STITCHED TOGETHER ON 1.50 INCH (3.81 CM) CENTERS WITH UV STABILIZED POLYPROPYLENE THREAD TO FORM PERMANENT THREE-DIMENSIONSL TURF REINFORCEMENT MATTING. ALL MATS SHALL BE MANUFACTURED WITH A COLORED THREAD STITCHED ALONG BOTH OUTER EDGES AS AN OVERLAP GUIDE FOR ADJACENT MATS.

THE SC250 SHALL MEET TYPE 5A, 5B AND 5C SPECIFICATION REQUIREMENTS ESTABLISHED BY THE EROSION CONTROL TECHNOLOGY COUNCIL (ECTC) AND FEDERAL HIGHWAY ADMINISTRATION' (FFWA) FP-03 SECTION 713.18

### MATERIAL CONTENT

3:1 - 2:1 GREATER THAN 2:1

0.0574

	10% STRAW FIBER	0.35LB/6QYD (0.19 KG/6M)
MATRIX	30% COCONUT FIBER	Ø.15 LBS/SQ YD (Ø.Ø8 KG/SM)
NETTING	TOP AND BOTTOM, UV STABILIZED POLYPROPYLENE	5LB/1000 SQ FT (2.44 KG/100 SM
NETTING	MIDDLE, CORRUGATED UV STABILIZED POLYPROPYLENE	24 LB/1000 SF (11.7 KG/100 SM)

THREAD POLYPROPYLENE, UV STABLE STANDARD ROLL SIZE

6.5 FT (2.0M) LENGTH 55.5 FT (16.9M) WEIGHT±10% 34 LBS (15.42 KG) 40 SQ YD (33.4 SM) AREA

SLOPE LENGTH (L) LESS THAN 3:1

LESS THAN 20FT (6M)

GREATER THAN 2 FT

20-50 FT

### SLOPE DESIGN DATA: C FACTORS SLOPE GRADIENTS

*0.*02*0*9

0.0266

GREATER THAN 50 FT	0.0455	0.05	55	Ø.Ø81
INDEX PROPERTY	TEST METHOD		TYPICAL	
THICKNESS RESILIENCY DENSITY MASS/UNIT AREA UV STABILITY	ASTM D6525 ASTM 6524 ASTM D192 ASTM 6566 ASTM D4355/		0.62 IN. (1 95.2% 0.891 G/c1 16.13 OZ/9 100%	
POROSITY STIFFNESS LIGHT PENETRATION TENSILE STRENGTH-MD ELONGATION-MD TENSILE STRENGTH -TD ELONGATION-TD BIOMASS IMPROVEMENT	ECTC GUIDELI ASTM DI388 ASTM D6567 ASTM D6818 ASTM D6818 ASTM 6818 ASTM D6818 ASTM D1322	NES	4222.65 C 4.1% TØ9 LB/F 23.9%	0Z-IN T (10.56KN/M) T (10.56KN/M)

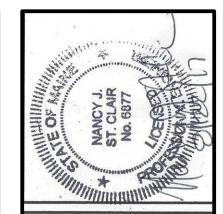
0.0010

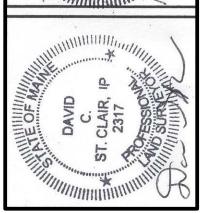
*0.00*81

### DESIGN PERMISSIBLE SHEAR STRESS

UNVEGETATED VELOCITY 9.5FPS (2.9 M/S) VEGETATED VELOCITY 15 FPS (4.6 M/S)  ROUGHNESS COEFFICIENTS - UNVEG.  FLOW DEPTH MANNING'S N LESS THAN 0.5 FT 0.040 0.5-2.0 FT 0.040-0.012	PHASE I: UNVEGETATED PHASE II: PARTIALLY VEG. PHASE III: FULLY VEG.	SHORT DURATION 3.0 PSF (144 PA) 8.0 PSF (383 PA) 10.0 PSF (480 PA)	2.5 PSF (120 PA) 8.0 PSF (383 PA
FLOW DEPTH MANNING'S N LESS THAN 0.5 FT 0.040			
LESS THAN 0.5 FT 0.040	ROUGHNESS COEFFICIENTS -	UNVEG.	
	LESS THAN Ø.5 FT	0.040	

TURF REINFORCEMENT MAT DATA





DCS 8-22-17 SUBMITTED FOR REVIEW	DATE: STATUS:	HALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ST.CLAIR ASSOCIATES ANY ALTEI OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ST.CLAIR AS
		TES ANY ALT TO ST.CLAIR

0

 $\circ$ NOT MAINE

SCALE

4-02-17 NTS

SHEET 5

### CONSTRUCTION NOTES

- I. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
- 2. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND/OR TRADE SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE OR FEDERAL LAWS, AS WELL AS ANY OTHER GOVERNING REQUIREMENTS, WHETHER OR NOT SPECIFIED ON THE DRAWINGS.
- 3. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF
- 4. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.
- 5. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYORS OF VISIBLE STRUCTURES SUCH AS HYDRANTS, VALVES, MANHOLES, AND CATCH BASINS, AND BY INFORMATION PROVIDED BY UTILITY COMPANIES AND OTHER DATABASES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (1-888-DIGSAFE) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.
- 6. CONTRACTOR SHALL BE CAUTIONED THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. OTHER UTILITIES MAYBE PRESENT IN THE WORK AREA. WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE LOCAL WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES.
- 1. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A (PROTECTION OF UNDERGROUND FACILITIES). IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.
- 8. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES" PUBLISHED BY THE CUMBERLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT AND MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2003 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.
- 9. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND INSTALLATION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
- 10. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
- II. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY DURING CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS SHOUN ON THE PLANS.
- 12. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.

# NOTES

- DEWATERING
- A DEWATERING PLAN IS NEEDED TO ADDRESS EXCAVATION DEWATERING FOLLOWING HEAVY RAINFALL EVENTS OR WHERE THE EXCAVATION MAY INTERCEPT THE GROUNDWATER TABLE DURING CONSTRUCTION. THE COLLECTED WATER NEEDS TREATMENT AND A DISCHARGE POINT THAT WILL NOT CAUSE DOWNGRADIENT EROSION AND OFFSITE SEDIMENTATION OR WITHIN A RESOURCE. PLEASE FOLLOW THE DETAILS OF SUCH A PLAN.
- BASIC STANDARDS EROSION CONTROL MEASURES

  MINIMUM EROSION CONTROL MEASURES WILL NEED TO BE
  IMPLEMENTED AND THE APPLICANT WILL BE RESPONSIBLE TO
  MAINTAIN ALL COMPONENTS OF THE EROSION CONTROL PLAN UNTIL
  THE SITE IS FULLY STABILIZED. HOWEVER, BASED ON SITE AND
  WEATHER CONDITIONS DURING CONSTRUCTION, ADDITIONAL
  EROSION CONTROL MEASURES MAY NEED TO BE IMPLEMENTED.
  ALL AREAS OF INSTABILITY AND EROSION MUST BE REPAIRED
  IMMEDIATELY DURING CONSTRUCTION AND NEED TO BE
  MAINTAINED UNTIL THE SITE IS FULLY STABILIZED OR VEGETATION
  IS ESTABLISHED. A CONSTRUCTION LOG MUST BE MAINTAINED FOR
  THE EROSION AND SEDIMENTATION CONTROL INSPECTIONS AND
  MAINTENANCE.

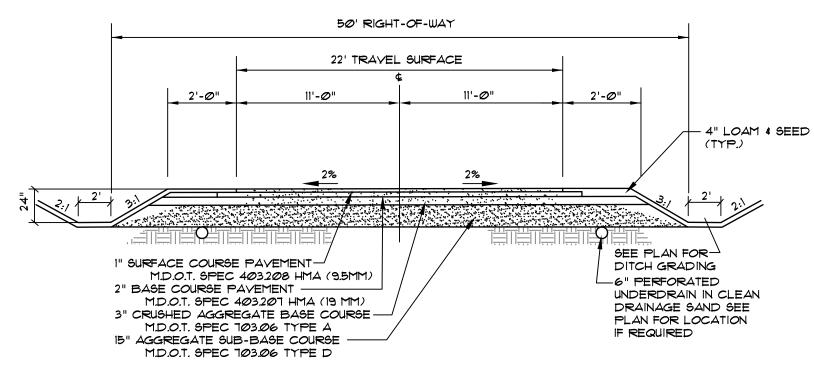
- 12. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.
- 13. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.
- 14. ALL PAVEMENT JOINTS SHALL BE SAUCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
- 15. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.
- 16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL REQUIRE A M.D.O.T. PERMIT AS WELL AS PERMITS FROM THE MUNICIPALITY AS APPLICABLE.
- IT. THE PROPOSED LIMITS OF CLEARING SHOWN HEREON ARE APPROXIMATE BASED UPON THE PROPOSED LIMITS OF SITE GRADING OR OTHER SITE WORK. NO GRUBBING OR STUMP REMOVAL SHALL OCCUR OUTSIDE OF THE CLEARING LIMITS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER IN ORDER TO ADDRESS

EROSION AND SEDIMENT CONTROL OR STORMWATER MANAGEMENT.

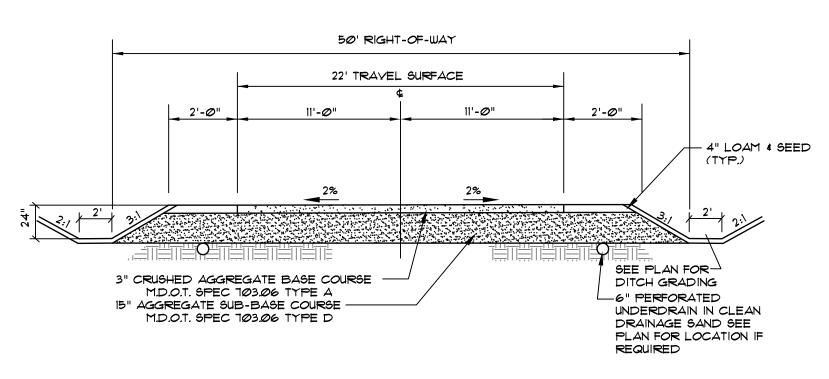
18. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS. ALL ERODED AREAS SHALL BE REPAIRED BY THE CONTRACTOR AND THE SURFACE SHALL BE STABILIZED USING THE MEASURES OUTLINED IN THE EROSION AND SEDIMENT CONTROL PLAN AND

NARRATIVES INCLUDED AS PART OF THIS CONSTRUCTION SET.

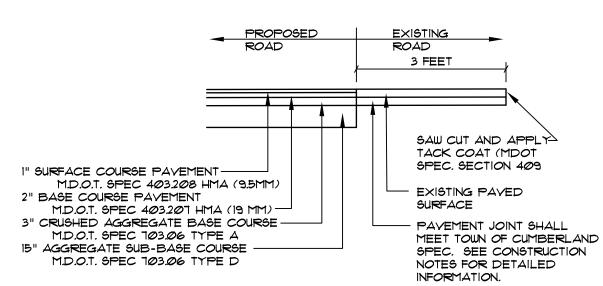
- 19. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL
- 20. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED",
  "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING
  TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT
  REFERENCE IS MADE TO THE RULING AND JUDGEMENT OF ST.C.L.AIR
  ASSOCIATES IN CONJUNCTION WITH THE OWNER.
- 21. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.
- 23. THE CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.
- 23. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ENGINEER AND/OR CLIENT/OWNER.
- 24. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR
- 25. BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.
- 26. DRAIN MANHOLE, CATCHBASIN AND SEWER MANHOLE DIAMETER SIZING SHOWN HEREON REPRESENT CITY/TOWN/SANITARY DEPARTMENT REQUIRED MINIMUM SIZING AND MAY NOT REFLECT ACTUAL FABRICATED SIZE.
- THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE PREFERRED DRAIN MANHOLE, CATCHBASIN AND SEWER MANHOLE FABRICATOR TO CONFIRM STRUCTURE DIAMETER SIZING PRIOR TO PRICING AND ORDERING STRUCTURES.



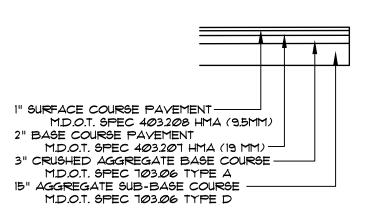
# TYPICAL ROAD SECTION



TYPICAL ACCESS DRIVE SECTION
NOT TO SCALE

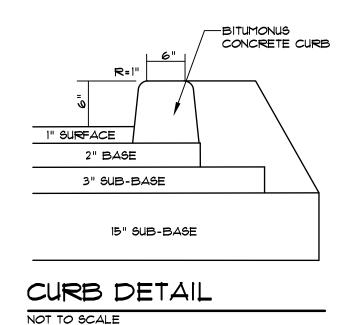


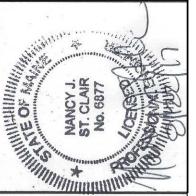
TYPICAL PAVEMENT JOINT

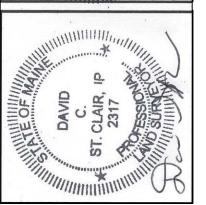


TYPICAL PARKING SECTION

NOT TO SCALE







A DCS 8-22-17 SUBMITTED FOR REVIEW REV: BY: STATUS: THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ST.CLAIR ASSOCIATES ANY ALTERATION	8-22-17 DATE: T BE MODIFIED WIT	DCS BY:	A REV: THIS PLAN S

ST.CLAIR ASSOCIATES

LAND SURVEYING AND CIVIL ENGINEERING

34 Forest Lane
Cumberland, ME 04021
Tel (207) 829-5558

PROJECT NO. FIELD BOOK DESIGN CHKD DRAW

ETAIL SHEET

IGBEE NOTCH APARTMENTS

I GRAY ROAD

IN RECORD OWNER:

ENISE MORGAN

OREST LANE

SCALE STAB 17014[

SHEET 6

4-02-17



