TOWN OF GRAY
PLANNING BOARD
AGENDA • JUNE 9, 2022

Planning Board **Regular Meeting**	**Henry Pennell Municipal Complex** **24 Main Street, Gray**	**7:00 PM**

I. MEETING COMMENCES

Roll Call

II. MINUTES APPROVAL

Regular Planning Board Meeting, May 10, 2022

III. INFORMATION EXCHANGE

- Staff Review Committee Meeting 6-9-22
- CircleK Conditions of Approval update
- CDBG award for Village Area Loop Trail Phase II
- Open Space Committee upcoming discussion
- Lewiston Road (Liberty) Self-Storage Development final plans
- U.S. EPA Brownfields grant award

IV. NEW BUSINESS

a.. Review/approve revised Planning Board application deadlines for 2022-23

V. CONTINUED BUSINESS

a.. Avesta Meadowview II Senior Housing Development

A request by Avesta Housing Development Corporation, Avesta Meadowview II LP and Gray Senior Housing, Inc., represented by Nathaniel Howes of Avesta Housing and Maureen McGlone of Ransom Surveying, for site plan, conditional use and subdivision review of a proposed multi-family 26-unit senior housing development located near 16 Hancock Street, Tax Map 43, Lot 405-39, in the Village Center Zoning District, owned by Gray Senior Housing, Inc. This application is subject to site plan, conditional use and subdivision review as well as multi-family housing standards and village design standards.

b.. Portland Road Self-Storage Development

A request by Beth Cureton, represented by Jeff Amos of Terradyn Consultants, for site plan review for a proposed self-storage facility on 3.85 +/- acres located on properties currently

owned by the Equity Trust Company (Custodian FBO Beth Ann Cureton Roth IRA) at approximately 119 Portland Road, as shown on Tax Map 59, Lot 31-10 & 31-14 in the Commercial Zoning District, with a portion of the property in the Resource Protection Shoreland Zoning District. This project is subject to site plan and conditional use review.

VI. PUBLIC HEARINGS

VII. ADJOURNMENT

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TOWN OF GRAY
GRAY PLANNING BOARD
MINUTES – MAY 10, 2022

Gray Planning Board	**Henry Pennell Municipal Complex**	**7:00 PM**
Regular Meeting	**24 Main Street, Gray, ME 04039**	

I. MEETING COMMENCED AT 7:00 PM

This meeting took place, in-person, at the Town Office.

Roll Call:

Attendee Name	Title	Status
Dan Cobb	Chair	Present
Tamara Lee Pinard	Regular Board Member	Present
Keary Sibole	Regular Board Member	Present
David Phelps	Regular Board Member	Present
Doug Webster	Community Development Director	Present
Kristen Muszynski	Community Planner	Present
Dan Maguire	Council Liaison	Present

II. MINUTES APPROVAL: There were a few edits made, as follows. On Page No. 1, Item IV. Public Hearings, a. Multi-Family Ordinance Change, second paragraph, re-word the second sentence to read, *"Dan Cobb said that this could have been appropriately addressed through the Contract Zoning process."* In the same paragraph, re-word the third sentence to read, *"The road discontinuance could have been wrapped into that."* On Page No. 3, first heading, change to read, *"Good Neighbor Standards."* In the last two motions for this meeting correct the spelling of *"Keary Sibole."* The following motion was made.

MOTION: *by Tamara Lee Pinard, seconded by Keary Sibole, to approve the Planning Board meeting minutes of April 14, 2022, as amended above.*

VOTED: *4-0 (Passed).*

ADJUSTMENTS TO THE AGENDA: Due the request of Wayne Wood, representative for Robert Thayer Jr., the following changes were made in the order of their presentation on the Agenda listing. The Agenda was adjusted to be heard in the following order: V. Public Hearing: A. Gracewoods Subdivision Amendment, IV. New Business: B. Self-Storage Development at 100 and 104 Lewiston Road, and then III. Information Exchange. The remainder of the items were heard in the order of the listing on the Agenda. These meeting minutes, however, reflect the order of the Agenda listing.

III. INFORMATION EXCHANGE:

A. **LD 2003 Update.** As stated in the Staff memorandum prepared by Kristen Muszynski – Community Planner, Governor Janet Mills has signed LD 2003 into law, which will have implications for how the Town applies its Ordinance provisions regarding residential housing, including multi-family. Kristen said there is a copy of the newly signed law in the Board packets for review. There is a correction to the memo, being that this goes into effect July 1, 2022. She said that there isn't much information yet.

Doug Webster stated that this has been amended various times. Even the final version will have substantial effects on multiple municipalities in the State of Maine. He said Gray is not alone in this. He said he is professionally disappointed in the State. The State has been advocating for growth vs. rural as an integral part of the growth management act for many years. He said he is disappointed that this legislation has come forth. He said he agrees with the intentions, but has a bad feeling that it may end up undermining efforts that many municipalities have put forth for decades trying to not adhere to the growth vs. rural. He said the Town of Gray is not alone. There are many municipalities that are wondering how it is going handle this.

Kristen stated that if they have any updates, they will be brought forth to this Board.

B. **Staff Review Committee Meeting of May 10, 2022.** As stated in the Staff memorandum, the Staff Review Committee is made up of the Planning Board Chairperson/Designee, the Community Planner, and Code

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Enforcement Officer. There was a Staff Review Committee meeting earlier this evening at 6:00 pm. Kristen provided the following update. She stated that the property to have a medical facility use at the Gray Family Vision Center building at 6 Turnpike Acres Road was approved. Tamara Lee Pinard said it was previously used as a physical therapist office. The approval was to change the use from its listing as a professional office building to a medical facility.

There were a couple of other items, as follows:

- The Town Manager wanted to make sure to remind this Board that there is a Build ME Summit Conference coming up for June 8, 2022 and June 9, 2022. The Town is a sponsor of this. There are a number of registrations included. He would very much like to see the Planning Board attend on one of those days. Kristen said the formal part of the conference is June 9, 2022. Doug Webster added that the Town Manager is trying to maximize attendance from the Town of Gray, particularly on Thursday. The Thursday, June 9, 2022 conference ends at 4:00 pm and there is a scheduled regular Planning Board meeting that evening.
- Kristen said the Cambell Acres/Jenny Drive Subdivision Plan approved at the Planning Board meeting of April 14, 2022 is here this evening to be signed by Board Members.
- Kristen spoke to Board Members on submittal deadlines and how it is handled. Right now, she said the deadline is set for a minimum of 21 days prior to a meeting. This is in the Ordinance. She said this gives her no time at all to determine if an application is complete before advertising. She said because they use a weekly paper, the ad has to be in the paper the Monday prior to publication. Subdivisions require two notifications – a Public Hearing and Notice to Abutters. This current process backs Planning Staff up a lot. There is not enough time for the back-and-forth coordination. She said she has no time to review the applications at all. The ads can go to the daily paper, but the ads would be a lot more expensive and it would be a process to get this to go before the Town Council. She said the preference is to stick to weekly. She would like to propose 30 days prior to the meeting. That would give her two weeks to determine if the applications are complete before putting out the Public Notice and the Notice to Abutters and time to correspond to the applicants. She is looking for the Planning Board's support on this. She said that this has been a challenge for her. The Board was in support of a 30-day submittal deadline.

Doug Webster commented that the Planning Board formally adopts the meeting schedule. If the Planning Board is receptive to this change, there would be an amended Planning Board schedule brought back before this Board for a formal vote at a subsequent meeting. The Board was in favor of preparing a plan to make this happen more efficiently.

Dan Maguire said the weekly vs. daily is definitely something to look into.

IV. NEW BUSINESS:

A. **<u>Remote Meeting Policy</u>.** This was placed on the agenda for the Board's consideration to set a Public Hearing/adoption of a policy at the next regular meeting.

Dan Maguire said the Town Council is looking to make a flexible policy for all the committees. The Town Council, Planning Board, and Zoning Board of Appeals are all in that category. Recording and documenting is much more important than some of the other committees. They are trying to come up with a policy that meets those requirements. One suggestion is that the hybrid is the most flexible. It allows people to either be in-person or remote. However, it is more complicated to run. With both the Planning Board and Zoning Board of Appeals, the Council liaison would be the person to monitor the *"Zoom"* link, in which the liaison could funnel that information to the Chair. Dan said this is one thought the Town Council had.

Dan Cobb would like to see people in-person. He said the hybrid is his least desirable. He would like to see approval, if the hybrid is needed.

Dan Maguire said the Town Council plans to simplify the process to eliminate the Town Manager's involvement. The Planning Board meetings are more effective on-line than in-person, especially when it comes to sharing plans and graphics. He commented that for Town Council, more people attend when the *"Zoom"* option is available. He agrees that his preference is also in-person.

Board Members thoughts included the following: Keary Sibole agreed that running a meeting in a hybrid way is pretty challenging. She mentioned laptops being provided to Board Members to view items. She said she is ready to see people in-person. Tamara Lee Pinard said the Town needs to be thoughtful and accommodate those people who need accommodations. She also prefers in-person. David Phelps likes a more flexible policy.

Kristen stated that full-size plans are not required for the Board. Doug Webster said for a period, it one full-size set with supporting documents being smaller. In closing, this Board will wait to hear back from the Town Council regarding a policy.

B. **<u>Self-Storage Development at 100 and 104 Lewiston Road</u>.** ***A request by Scott Liberty, dba Odessa Properties LLC, represented by JP Connolly of DM ROMA Consulting Engineers, for PB review of a proposal to***

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create two additional lots on his property at 100 and 104 Lewiston Road, Map 28, Lots 26-02 and 26-02-01 in the Commercial Zoning District and Light Manufacturing Overlay District. One lot is proposed for commercial development of self-storage units, while a second would be for a single-family residential use. This proposal is subject to conditional use, minor subdivision, and site plan amendment reviews.

Provided in the Board Members packets was the Staff Memorandum from Kristen Muszynski – Community Planner that included an overview/background of this request, requested waivers, updates since the last Board meeting, comments per the Town's Consulting Engineer, comments per Town Staff, discussion points, and draft motions for the Conditional Use, Waivers, and Site Plan and Subdivision Approval.

Present at this meeting was J.P. Connolly, from DM ROMA Consulting Engineers. He presented the background to this request. The property is located at 100 and 104 Lewiston Road. They are looking to subdivide the lot, which is a 4.35-acre parcel. They are looking to create a third lot. There are slight property alignment changes. One of the existing uses is a commercial facility. The other two uses are proposed uses – one is a self-storage site and the other is a residential structure.

He generally described changes they have made. A big part of the discussion, at the last meeting, was buffering. The frontage of the Lewiston Road buffering was satisfied. There were still concerns, in particular with the Lots 2 and 3 divide. They met with Staff and they have widened the planter to ten feet wide. They are putting trees in them and some ornamental grasses. The openings have been reduced significantly. He showed, on his mapping, where the openings are. There will be three openings. This will provide a landscaped planter in the front of the whole building line for the existing structure.

They did a lot of technical responses to the peer review comments. A lot of them are relating to stormwater. They re-evaluated their pond. The berm was raised on the pond by half a foot to account for a spillway freeboard. They looked at the 25- and 100-year storm events. They have added areas of supplemental slope stability. Anywhere there is an existing slope, they will uncover whatever treatment on that slope that was there. If there is riprap, it will be uncovered and supplemented or just maintained. A detail has been provided on how they will treat all of the slopes. Anything over 3:1 will be loamed and seeded. Anything steeper than 3:1, but not steeper than 2:1 will have an erosion control blanket. Anything over 2:1 will have a riprap slope treatment.

They have relocated the well to another location. They also provided a provision for a proposed sewer lateral between the frontage of the buildings and the end of the walls of the buildings. A stub will be installed to tie into. The well location is in a down-graded scenario. He said what that does to the septic system is 59 gallons over the 1,000-gallon threshold. He explained, once you get into the 1,000-2,000-galllon, there are different setbacks related to that. Currently, there is a 200-foot setback associated with the design flow. The well location is 150 feet from that well. They will need to go forward with that as a variance application or look at revising the HHE-200 to show a reduced number of seats to make that flow less than the 1,000-gallon per day. These two alternatives are very viable. He does not have a letter from the hydrologist to provide to the Board.

This item was then opened to the Board. The Board had no further questions.

There were a number of Staff comments in the Staff memo. J.P. Connolly said he is confident they have addressed everything in regards to the technical aspect. He said he is in agreement with Staff and the Peer Reviewers comments. He is looking for approval this evening. He said financially they need to move forward for the self-storage facility. He said Site Plan approval would be ideal, but would like Subdivision approval, as well.

Doug Webster commented that the hydrologist letter is needed for the Subdivision. Lot 1 is proposed to be a residential lot and a Town-approved subdivision lot is guaranteed to be buildable. He said without that letter, that is the reason the draft Condition of Approval is worded as strongly at it is. The Subdivision Plan cannot be released for that reason. He said the Town has a large degree of responsibility saying a lot is buildable. This documentation is needed.

Dan Cobb said he wants to move this along, as far as Site Plan approval. Doug Webster said, if the Board is comfortable, it could move forward as both Site Plan and Subdivision approval. Kristen Muszynski stated that the deadlines needed to be met. Materials were submitted last Thursday, May 5, 2022, and again yesterday – Monday, May 9, 2022. She said the big issues with the Town's consultant have been addressed and both Site Plan and Subdivision approval can both be done. Dan Cobb stated that the policy of the Board is that all materials have to be submitted at least 72 hours ahead of time. J.P. Connolly stated that he really appreciated Staff's assistance on this.

At this point, the Board then proceeded through the discussion points. Dan Cobb read each discussion point, as follows.

1. Does this application meet the conditional use criteria of 402.9.3-F? The Board's response was *"Yes."* Tamara Lee Pinard questioned the impact on stormwater systems. J.P. Connolly responded that with the new design, there is an increase of about 5,000 square feet (SF) total and, in reality, the building and driveway are 4,000 SF of it. He said essentially they are feathering in some of the areas and removing some pavement. There is 500-1,000 SF of

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impervious impact. The stormwater will actually work better now. The time of concentration is longer that it is in the existing condition with these catch basins collecting and discharging directly to the swale. With the swales and the edges of the buildings and slopes being supplemented and stabilized to meet current conditions, the site will have less erosion than it does now. In addition to that, the basin, as it stands right now, was not completed to the construction standards of the design initially in 1990 and 1996. He said there will be an improvement there as well. It will function better. There is a net decrease in overall impact. Tamara Lee Pinard stated that she was good with this response.

2. Is the proposed buffering plan adequate along the front and rear of the site, and between Lots 2 and 3? The Board's response was *"Yes."*

3. Does the PB agree with holding off on issuing the Notice of Decision or the signed subdivision plan until sufficient documentation from a duly qualified professional affirms that a well and septic system can be located on Lot 1, meeting applicable standards in conformance with professional accepted practices, as determined by the Gray Code Enforcement Officer with input from the Community Planner? The Board's response was *"Yes, with a Condition of Approval."*

4. Does the PB want to require more specificity regarding the party responsible for the buffer maintenance plan, such as amending the language of Planting Note #21 on the Landscaping Plan to specify that the property owner of Lot #3 is the responsible party to maintain the vegetated buffer between lots 2 and 3, since it is located on Lot 3; and that the property owner of Lot #2 should be responsible for the remaining vegetated buffer areas? The Board's response was *"Yes."*

5. Does the Board wish to require an agreement for the stormwater maintenance, as suggested in the Town Engineer's comment #3? The Board's response was *"Yes."*

6. Does the Board wish to require the applicant to provide copies of the NRPA PBR application, and the MDEP Stormwater Permit to the Town? The Board's response was *"Yes."* Kristen stated that this has been provided.

7. Does the Board agree to waive the high intensity soil survey and hydrogeologic assessment for the property as a whole and require those only for the stormwater infrastructure areas and the area of the proposed well, respectively? The Board's response was *"Yes."*

8. Does the Board agree to waive the 401.13.4 E provision regarding Lot 3's easement for use of the septic system on Lot 2? The Board's response was *"Yes."* Doug Webster said that this is an appropriate waiver for the Board to consider because the septic system has been there for 20+ years.

Conditional Use Approval: The following motion was made for Conditional Use.

MOTION: *by Keary Sibole, seconded by Tamara Lee Pinard, to find the Conditional Use application complete and approve the conditional use for the self-storage development proposal, as submitted by Scott Liberty, dba Odessa Properties LLC, on his property located at 100 and 104 Lewiston Road, Map 28, Lots 26-02 and 26-02-01 in a Commercial Zoning District.*

VOTED: *3-1 (Passed) (David Phelps – Abstained).* David Phelps was not in attendance at previous meetings.

Waiver Approval: Kristen presented an updated waiver (inserted in the Staff memo.) She said that this is an updated waiver for Liberty Storage to include the monuments waiver request. The following motion was made.

MOTION: *by Tamara Lee Pinard, seconded by Keary Sibole, to approve the following waivers for the Lewiston Road Subdivision submitted by Scott Liberty, dba Odessa Properties LLC, for his property located at 100 and 104 Lewiston Road, Map 28, Lots 26-02 and 26-02-01 in a Commercial Zoning District:*

- *high intensity soil survey for the property as a whole, requiring the high intensity soil survey only for the stormwater infrastructure areas;*
- *hydrogeologic assessment for the property as a whole, requiring the hydrogeologic assessment only for the area of the proposed well;*
- *the 401.13.4 E provision regarding septic system siting, to allow Lot 3's easement for use of the septic system on Lot 2; and*
- *the 401.13.1 D requirement for stone or concrete monuments at all property corners, allowing such monuments at the proposed property corner along Lewiston Road, with iron pins/capped rebar at all other proposed corners.*

VOTED: *3-1 (Passed) (David Phelps – Abstained).* David Phelps was not in attendance at previous meetings.

After the above motion, Doug Webster stated that the waiver granted needs to be noted on the Subdivision Plan.

Site Plan and Subdivision Approval: The following motion was made.

MOTION: *by Tamara Lee Pinard, seconded by Keary Sibole, to approve the application by Scott Liberty, dba as Odessa Properties LLC, represented by JP Connolly of DM ROMA Consulting Engineers for an amendment to an*

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approved site plan and minor subdivision approval, to create three lots on his property at 100 and 104 Lewiston Road, Map 28, Lots 26-02 and 26-02-01 in a Commercial Zoning District, with one lot to be used for commercial development of self-storage units, one for the existing medical marijuana caregiver use, and one lot for a single-family residential use, subject to the following conditions:

1. The project shall be constructed, operated, and maintained in accordance with the plans, submissions and testimony presented to the Planning Board by the applicant and its representatives.

2. All prior applicable standards and conditions of approval remain in effect.

3. The applicant shall provide documentation/notation from a hydrogeologic consultant to specify the location of the well and septic field for Lot 1, prior to the town releasing the final Notice of Decision and/or the subdivision plan for recording at the Cumberland County Registry of Deeds.

4. The applicant shall provide copies of the NRPA PBR application, and the MDEP Stormwater Permit to the Town, prior to the Code Enforcement officer issuing building permits.

5. A high intensity soil survey and hydrogeologic assessment will be waived for the property as a whole and required only for the stormwater infrastructure areas and the area of the proposed well, respectively; and those waivers will be noted on the face of the final plan.

6. Provide a signed Agreement outlining the responsible parties, and the required maintenance and inspection, of the stormwater control facilities.

7. Amending the language of Planting Note #21 on the Landscaping Plan to specify that the property owner of Lot 2 is the responsible party for the buffer maintenance, with the exception of the buffer strip between Lots 2 and 3, which is located on Lot 3 and is to be maintained by the owner of Lot 3.

8. Prior to the lot division completion, all easements for access, septic, utility and stormwater drainage, as described in the subdivision narrative submitted to the Board, must be included and reflected in the deeds for all of the affected lots, as necessary, and filed at the Cumberland County Registry of Deeds.

9. A well exclusion zone must be added to Lot 1 to ensure the well is located within appropriate setbacks and distance from the septic and stormwater

10. The Staff Review Committee must review the Lot 1 plan details, to include grading/ well siting/ septic siting for the residential use as a condition of building permit issuance.

11. The location and all aspects of the sign for the self-storage facility on Lot 2 must meet the provisions of the Town of Gray sign ordinance, Chapter 406, and obtain a sign permit from the Code Enforcement Officer prior to installation.

12. A note must be added to the subdivision plan stating that the 10' buffer benefitting lots 2 and 3 shall be subject to the Inspection, Maintenance and Housekeeping 8 Plan, as submitted by the applicant, in accordance with the submitted landscape plan, and shall remain in place unless removal is specifically approved by the Gray Planning Board.

VOTED: 3-1 (Passed) (David Phelps – Abstained). David Phelps was not in attendance at previous meetings.

And

AMENDED MOTION: *by Tamara Lee Pinard, seconded by Keary Sibole that Condition #5 be amended to read that all waivers granted at this meeting will be noted on the final plan.*

VOTED: *3-1 (Passed) (David Phelps – Abstained).* David Phelps was not in attendance at previous meetings.

There was no further discussion.

V. PUBLIC HEARING:

A. <u>Gracewoods Subdivision Amendment</u>. ***A request by Robert Thayer Jr., represented by Wayne Wood, for Planning Board review of an amendment to a minor subdivision. This proposal is to create two additional lots on Mr. Thayer's property in the Gracewoods subdivision, on Gracewoods Road, Map 62, Lots 027-112 and 027-113, in the Rural Residential and Agricultural Zoning District and partly in the Limited Residential Shoreland Zoning District. Both lots are proposed for residential use. This proposal is subject to minor subdivision amendment review.***

Provided in the Board Members packets was the Staff Memorandum from Kristen Muszynski – Community Planner that included an overview/background of this request, comments per Town Staff, and discussion points.

There was a site visit on May 4, 2022. Board members present for the site walk included Dan Cobb, Tamara Lee Pinard, and David Phelps. Also, Community Planner Kristen Muszynski, Robert Thayer Jr., the property owner, and Wayne Wood, the surveyor. There were also three (3) abutters present.

Wayne Wood presented this item, on behalf of the applicant, Robert Thayer Jr. He stated that this is the same subdivision plan. Added to it is the Limited Residential Shoreland Zoning District. There is a Resource Protection Zone on the abutting property. Some of the net residential calculations have changed since the previous one. They went from requiring a 15 percent down to 10 percent for roads. This has been adjusted in the net residential calculation. It comes up with the same number of lots and dwelling units proposed. The issues with the Town on lot size with sub-

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standard lots have been taken care of. He said they are ready to move on.

In the Planners Memo discussed were discussion points, not detail points. Dan Cobb referred to the discussion around a *"no cut buffer."* This was brought up at the site walk. Dan Cobb asked Wayne Wood where does this stand? Wayne responded that if it is something required by the Board, they will entertain it. They are not proposing anything of this nature at this point in time. They have shifted the building down and away from that line for that purpose.

There were no questions or comments from the Board at this time.

There were no requested waivers.

There were a few outstanding items for the Board's consideration, as detailed in the Planner's Memo. Planning Staff does not feel the application is ready for final approval. Kristen said a completeness of the submittal includes groundwater impact, topography, and soil data that needs to be provided. The applicant must provide proof of financial and technical capacity for the development, She said these will be discussed later in this review.

The Public Hearing was opened for Public Comment, as follows:

- **Theresa Grover – 55 Lawrence Road** said that this is one of the biggest impacts on the property line from what is being proposed. She said she did not receive any notice on the proposed amendment on the change. She is an abutting property owner. She wanted to know how that notification was sent out, by whom, and what information it contained. It is re-opening its original plan of his intent. She said after looking through the Town Ordinance, she feels this is a major subdivision plan. Another major concern of hers is the public safety to Gray, in general. This was a big issue in 2005 when there was a bigger plan to start this. In a one-year period there were 88 calls to Gray EMS or the Cumberland County Sheriff's Department to Gracewoods Lane in 2021. She provided a summary sheet with all of those calls. She listed some of the complaints. She said this is a burden to Gray – with excessive use of their EMS. She stated, "Is the Town of Gray ready for this impact of EMS." She continued by saying, is this road ready for this impact of EMS? Is there an exit/entrance point to this? Can both vehicles pass? She said this is a significant impact. She asked, are there any Staff requirements? She has a lot of safety concerns. She is requesting a halt on all progress, since she was not properly notified. She is also requesting guardrails be installed and a stockade security fence on her property line. She would also like a phone number of non-emergency, so as to not burden EMS and taxpayers. At this point, she provided her report to the Board and stated that she wants guidance of where to go from here.
- **John Grover – 55 Lawrence Road** said this is a very concerning situation. It seems like there is no regulation at all. They were not provided any notice. The road was built after his driveway was put in. It is 4-5 feet above his driveway. There were three, 36" culverts put in. Every Spring his driveway gets flooded. Water was re-directed from one side of the road to the other. This causes property damage. The safety issue is a big deal for them. They also do not want to look at the back side of someone's house. They bought the place because it was secluded. It will not be like that anymore. His biggest concern is the safety issue.
- **Nicole Campy – 59 Lawrence Road** showed, on the mapping, her location right next to the Grovers. She spoke also on behalf of safety concerns. She said there is a Group Home at Gracewoods. She said there needs to be better staffing issues at the Group Home. She mentioned an incident that happened at her home, with the Group Home's Staff being present and not interjecting. There is definitely a safety concern that needs to be figured out.
- **John Carter – 45 Lawrence Road** showed his location on the mapping provided. He also did not receive a notification. He would like more time. He did not know this was happening and did not get to go on the site walk. He said there will be implications and impact on his property. He had questions for the Board in regards to area calculations. There wasn't any drainage of the soil taken into account. There are wetlands and streams in this property. He requested a soil survey. He feels the plan is incomplete and needs to be updated. There is a stream that borders his side of the property that feeds the pond. This is not depicted. He is concerned with the slope and drainage. He irrigates from the pond for this food that he grows. This is a big concern of his. He said there has been years of conflict around this. This is very complicated. More time is needed to look at this proposal. The minor vs. major is definitely pretty significant. He mentioned what are the long-term plans for this subdivision. He has questions regarding zoning, such as what is/isn't allowed in rural zoning. This is not a permitted use in zoning. This seems to be close to a multi-family development. There isn't 200 feet of frontage with the original lot on Lawrence Road initially. In his review, he did not find that this was addressed at all. He has questions on frontage. He stated four areas that previously did not pass – the soil erosion and impact on water holding capacity. A lot of these issues will be exasperated with these additional units. Other areas include impact on aesthetic natural coastal areas, conformity with local Ordinance, and impact on surface waters. He re-iterated the safety concerns. He wants more information on what the future development plans are and how it relates to this. He asked is there a plan to develop more. He wants more clarity and time.

There was one e-mailed correspondence from **Mary Bruns – Lawrence Road**, of which she was in

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opposition to this expansion and also stated that she had not been notified. This will be included in the public record.

There were no further public comments. The public comment portion ended at 7:33 pm.

Dan Cobb said this is the most meaningful testimony he has ever heard with what the concerns are. This is important. He then checked with Kristen Muszynski on the issue with notification. Kristen responded that they used the computer program on notification. She said a Public Notice was done as well. Doug Webster commented that the notification goes by the tax records.

Applicant's Response to Concerns. Wayne Wood asked if the Board had received any comments back from Public Safety. Kristen responded that they did not receive that, since this was a previous subdivision. In regards to the Fire Chief's comment was that this is not a problem site yet. Wayne said there are challenged individuals that live there. He said Robert Thayer Jr, the applicant, is amenable to a fence along the property line. This would alleviate some of the concerns of the neighbors. Another issue is the drainage. There is a 2005 MDEP Permit-By-Rule for that stream crossing. The road has been built to the standards that the Town requires for the number of units on it. Minor vs. major – the Town supports this as a minor subdivision. The definition of multi-family is triggered at three or more dwelling units on a single lot. A duplex is not considered multi-family in the zoning the Town has. He referred to the court case that went through the court system and came back. They did receive initial approval. He assumes it was done and handled appropriately. The net residential acreage calculations that are required to be done for a subdivision today are not that different today than in the past, with the exception of the road – 15 percent is now 10 percent. The soils delineations are the same as in 2005. This amendment is adding four dwelling units, two buildings on the existing road and infrastructure that is already there.

Dan Cobb said the discussion points are detail-oriented and very specific to the plan. He said this is not what he expected to hear. He felt this was a routine subdivision without a lot of issues. This is eye-opening. He said he is not comfortable in proceeding until the notifications have all been received by the abutters. There are bigger problems that need to be addressed. He is proposing this be tabled. There were some pretty serious concerns from direct abutters on this. This allows time for the applicant to come back with more information, such as providing a letter from the Fire Chief and the Cumberland County Sheriff's Office on this. He stated that health and safety is one of the Planning Board's roles. Other Board Members thoughts included the following. David Phelps said safety concerns are concerning. More input is needed. The consensus of the Board was to table this request and get more information. Dan Cobb and the Board was fine with everything laid out in the Staff Memo.

Doug Webster stated that they will get some legal input. He asked if the Board had any input as to the buffering, having been on the site walk. Dan Cobb said there are other issues to be dealt with at this time. Buffering will, however, be an element. The consensus of the Board was to wait on this. The following motion was made.

MOTION: *by Dan Cobb, seconded by Tamara Lee Pinard to table this request to the next regular meeting.*
VOTED: *4-0 (Passed).*

After the above motion, Dan Cobb allowed additional public input. Theresa Grover mentioned that Robert Thayer Jr. is currently doing a lot of cutting each day. She asked can this process be halted. She said it was difficult for her to get a FOAA request. She advised the proper request is to ask for Gracewood Lane in order to get the information. She said the system is very specific. In closing, she also stated that she has concerns with soils.

VI. ADJOURNMENT: The following motion was made to adjourn the meeting.
MOTION: *by Tamara Lee Pinard, seconded by Keary Sibole, to adjourn the meeting at 9:00 p.m.*
VOTED: *4-0 (Passed).*

Respectfully submitted,

Doreen M. Christ
Transcriptionist/Minute Taker - Town of Gray

DRAFT

DRAFT

PLANNING BOARD
2022 MEETING & APPLICATION DEADLINE SCHEDULE

Revision to be approved at the 6/9/2022 meeting

MONTH	NEW APPLICATION DEADLINE	SKETCH PLAN & EXISTING APPLICATION DEADLINE	MEETING DATE
January	12/15/2021*	12-17-2021	1-13-2022
February	1-19-2022	1-28-2022	2-10-2022
March	2-16-2022	2-18-2022	3-10-2022
April	3-23-2022	3-23-2022	4-14-2022
May	4-15-2022	4-15-2022	5-12-2022
June	5-18-2022	5-20-2022	6-9-2022
July	6-22-2022	6-24-2022	7-14-2022
August	7-15-2022	7-18-2022	8-11-2022
September	8-12-2022	8-15-2022	9-15-2022*
October	9-16-2022	9-19-2022	10-13-2022
November	10-19-2022	10-21-2022	11-10-2022*
December	11-4-2022*	11-7-2022	12-8-2022

**This deadline date has been adjusted to accommodate Holiday*

ZONING BOARD OF APPEALS
2022 MEETING & APPLICATION DEADLINE SCHEDULE

Approved by the ZBA at the 10/27/2021 meeting

MONTH	APPLICATION DEADLINE	MEETING DATE
January	1-3-2022	1-26-2022
February	1-31-2022	2-23-2022
March	2-28-2022	3-23-2022
April	4-4-2022	4-27-2022
May	5-2-2022	5-25-2022
June	5-27-2022*	6-22-2022
July	7-1-2022	7-27-2022
August	8-1-2021	8-24-2022
September	9-2-2022*	9-28-2022
October	10-3-2021	10-26-2022
November	10-24-2022*	11-16-2022*
December	12-05-2022	12-28-2022*

**These dates have been adjusted to accommodate Holidays*

PLANNING BOARD
2023 MEETING & APPLICATION DEADLINE SCHEDULE

To be approved at the 6/9/2022

MONTH	NEW APPLICATION DEADLINE	SKETCH PLAN & EXISTING APPLICATION DEADLINE	MEETING DATE
January	12/9/2022*	12-12-2022	1-12-2023
February	1-13-2023	1-17-2023*	2-9-2023
March	2-10-2023	2-13-2023	3-9-2023
April	3-17-2023	3-20-2023	4-13-2023
May	4-14-2023	4-17-2023	5-11-2023
June	5-12-2023	5-15-2023	6-8-2023
July	6-16-2023	6-19-2023	7-13-2023
August	7-14-2023	7-17-2023	8-10-2023
September	8-4-2023*	8-7-2023*	9-14-2023*
October	9-15-2023	9-18-2023	10-12-2023
November	10-13-2023	10-16-2023	11-9-2023
December	11-10-2023*	11-13-2023*	12-14-2023

**The deadline date has been adjusted to accommodate Holiday*

ZONING BOARD OF APPEALS
2023 MEETING & APPLICATION DEADLINE SCHEDULE

To be approved by the ZBA at the 6/22/2022 meeting

MONTH	APPLICATION DEADLINE	MEETING DATE
January	12-30-2022	1-25-2023
February	1-27-2023	2-22-2023
March	2-24-2022	3-22-2023
April	3-31-2023	4-26-2023
May	2-21-2023	5-17-2023*
June	6-2-2023	6-28-2023
July	6-30-2023	7-26-2023
August	7-28-2023	8-23-2023
September	9-1-2023*	9-27-2028
October	9-29-2023	10-25-2023
November	10-20-2023*	11-15-2023*
December	11-30-2023	12-27-2023*

**These dates have been adjusted to accommodate Holidays*

400 Commercial Street, Suite 404
Portland, ME 04101
207.772.2891

May 20, 2022

Kristen Schulze Muszynski
Community Planner
Town of Gray
Municipal Complex
24 Main St., Gray, ME 04039

RE: Meadowview II | Application for Site Plan, Final Major Subdivision, Conditional Use and Village Center Design Certificate
16 Hancock Street, Gray, Maine

Dear Kristen:

On behalf of Avesta Housing, we are pleased to submit a response to comments received by the Planning Board, Gorrill Palmer, T.Y. Lin, and the Gray Fire Department based on the applicant's January 28, 2022 application for Major Site Plan review, Preliminary Major Subdivision review, Conditional Use review and Village Center Design review. A check for **$550** is included to cover permitting fees for Final Major Subdivision review.

Although it was not explicitly stated in our previous submittal, we are formally requesting a waiver from meeting the Flooding Standard of DEP Chapter 500 Stormwater Management as the project meets the requirements of Section 401.13.12.G of the Gray Zoning Ordinance. Please review and do not hesitate to contact me if you have any questions or need additional documentation. We look forward to continued collaboration with your office and Town Staff as this transformative project moves forward.

Sincerely,

RANSOM CONSULTING, LLC.

[redacted]

Maureen P. McGlone, P.E.
Project Manager

[redacted]

David J. Vitali, P.E.
Project Engineer

In addition to the Site Plans (at the end of this packet in hardcopy and provided as a separate PDF in the electronic version), this application package includes the following:

1. Completed Application Forms
2. Response to Comments
3. Project Narrative
4. Appendix A – Right, Title, and Interest
5. Appendix B – Gray Water District Letter
6. Appendix C – Soils Report
7. Appendix D – Financial Capacity
8. Appendix E – Hydrogeologic Assessment
9. Appendix F – Stormwater Management Plan
10. Appendix G – Transportation Memo
11. Appendix H – Density Letter
12. Appendix I – E911 Road Name Change Approval
13. Appendix J – Fire Chief Letter
14. Site Plans

PLANNING BOARD/STAFF REVIEW COMMITTEE APPLICATION
TOWN OF GRAY MAINE

PROPERTY TO BE DEVELOPED			
Property Location/Address	16 Hancock Street	Property Map/Lot	043 . 405 . 039 . 000
Zoning District	Village Center (VC)	Lot Acreage	15.5
Owner Name	Gray Senior Housing	Tax Sheet	Book 3676, Page 265 and Book 3605, Page 257
Owner Address	307 Cumberland Avenue	Owner Phone	207-553-7780x3374 (work)
APPLICANT			
Name (IF different than owner)	Avesta Housing Development Corporation	Contact Phone Number	207-553-7780x3374 (work)
Mailing Address	307 Cumberland Avenue	Alternate Phone Number	207-232-1021 (cell)
Mailing City/State/Zip	Portland, ME, 04101	Fax Number	
Email Address	nhowes@avestahousing.org		
AGENT/CONSULTANT			
Name	Maureen P. McGlone, P.E., Ransom Consulting, LLC	Contact Phone Number	207-772-2891 (office)
Mailing Address	400 Commercial Street, Suite 404	Alternate Phone Number	207-229-1503 (cell)
Mailing City/State/Zip	Portland, ME, 04101-4660	Fax Number	207-772-3248
Email Address	maureen.mcglone@ransomenv.com		

PROJECT

The undersigned requests that the Town of Gray Planning Board consider the following application for:

- [X] **Subdivision**
  - Sketch Plan Review
  - Preliminary Plan Review (Major)
  - X Final Plan Review (Major)
  - Minor
- [ ] **Site Plan Review**
  - Pre-Application Conference
  - Minor
  - X Major
- [ ] **Shoreland Zoning Permit**
- [ ] **Other (specify)**
  - X Conditional Use
  - Amendment
  - Extension
  - Workshop
  - Contract Zone Request

Project Description / Comments:

The following lots (Map 44: Lot 405-43, Map 43: Lot 405-39, the Narrow-Gauge Railroad corridor, and a portion of the Hancock Street ROW to be discontinued) will be combined into a single parcel. The entire parcel will be owned by a condominium association. The association will have two units, each with a share of ownership. The proposed new construction would be a two-story building with an elevator containing 26 one-bedroom, affordable housing rental units for tenants age 55+. The proposed building would be located at the southern end of the existing paved access drive.

Applicant Signature [redacted] **Date** 5/19/2022

See Page 2 for Co-Applicant Information and Signatures

Co-Applicant #1			
Name	Avesta Meadowview II LP	**Contact Phone Number**	207-232-1021
Mailing Address	307 Cumberland Ave	**Alternate Phone Number**	
Mailing City/State/Zip	Portland, ME 04101	**Fax Number**	
Email Address	nhowes@avestahousing.org		

Co-Applicant #1 Signature: [redacted] Date: 5/19/2022

Co-Applicant #2			
Name	Gray Senior Housing, Inc.	**Contact Phone Number**	207-232-1021
Mailing Address	Avesta Meadowview II LP	**Alternate Phone Number**	
Mailing City/State/Zip	307 Cumberland Ave	**Fax Number**	
Email Address	nhowes@avestahousing.org		

Co-Applicant #2 Signature: [redacted] Date: 5/19/2022

400 Commercial Street, Suite 404
Portland, ME 04101
207.772.2891

MEADOWVIEW II – RESPONSE TO COMMENTS

On behalf of Avesta Housing Development Corporation (Avesta), Ransom Consulting, LLC (Ransom) submitted a set of permitting plans with supporting documentation to the Town of Gray Planning Board for Site Plan and Subdivision review on January 28th, 2022. Ransom has received comments from Will Haskell of Gorrill Palmer (Third-Party Reviewer for the Town), the Planning Board, the Fire Chief, and from Tom Errico of T.Y. Lin (Third-Party Traffic Reviewer). Comments are listed below along with Ransom's response in **bold**.

Comments from Town's Consulting Engineer, Will Haskell of Gorrill Palmer

1. Show locations and area of wetland impact on plans.

   Response: The location and area of wetland impact has been added to sheet C1.3.

2. There is proposed grading shown adjacent to the generator pad that appears to extend into the 75-foot stream setback. If the grading cannot be revised, a NRPA PBR application may be required for disturbance adjacent to a protected resource.

   Response: Grading has been revised such that no disturbance is proposed within the 75-foot stream setback.

3. The reserve subsurface disposal field location is located across the stream and is about 500 feet away from the proposed disposal field. Is this location feasible for a replacement system?

   Response: Yes, it is still a feasible location. A pump would be required to convey flows to the reserve subsurface disposal field. The reserve location is accessible via the access path off the dead end of Hancock Street. Should the reserve location be used, the disturbed area would be rehabilitated as necessary with loam and seed.

4. Stormwater buffer signage shall be set around the perimeter of the stormwater buffer in accordance with recommended Maine DEP guidelines.

   Response: A note has been added to sheet C1.5 indicating that the buffer shall be staked prior to start of construction and marked permanently with signage post-construction. Northing and Eastings have been added to the buffer.

5. A catch basin is proposed to be connected to the existing storm drain at the westerly edge of the site. Does the existing storm drain outlet have adequate outlet protection?

   Response: A note has been added to sheet C1.3 to add outlet protection if necessary.

6. Add a spot grade or revise the elevation 72 contour at the northerly end of the level lip spreader to ensure runoff is directed through the stone berm versus bypassing around the end of the berm.

   Response: 272 contours and spot grades have been added to the northerly end of the level lip spreader on sheet C1.3.

7. Add the length of the stormwater level lip spreader to the plans.

   Response: Length of the stormwater level lip spreader has been added to sheet C1.5.

8. Add the gradation of the stone for the level lip spreader to the detail.

   Response: Gradation of the stone for the level lip spreader has been added to sheet C2.4

9. Revise the stone berm detail to show a height of 1.5 feet above the level lip elevation which is at the downstream edge in this detail.

   Response: The downstream edge of the detail has been revised to reflect the design intent of the level lip spreader.

10. The plan calls out for a plunge pool and level spreader at storm drain outlets. The detail sheet has an outlet plunge pool detail and an energy dissipater/plunge pool detail. Is the energy dissipater the 3 feet of stone shown beyond the plunge pool on the outlet plunge pool detail? Revise detail titles as necessary to avoid confusion about which detail applies. The energy dissipater/plunge pool detail calls out for riprap that is rounded. What is the reason for specifying rounded stone versus angular riprap? We would generally recommend angular riprap to avoid displacement of the stone during high velocities.

    Response: The "Energy Dissipator/Plunge Pool" detail on sheet C2.4 has been revised to call out angular stone as opposed to rounded.

11. Call out size of roof drain.

    Response: Roof drain size has been called out on sheet C1.3.

12. Provide sizing calculations for all storm drain pipe.

    Response: Sizing calculations for the storm drain pipes downstream of MH-1 have been performed and accompany this response. Pipes have been resized as necessary to adequately handle the 25-year storm event while maintaining cover over the pipes to the maximum practicable extent. The HydroCAD report showing the pipe sizing is included with the Stormwater Management Report in Appendix F.

13. Add spot grades at accessible spaces and along the accessible routes to ensure they are designed in conformance with ADA requirements.

    Response: Spot grades have been added at the accessible spaces and route in the grading inset on sheet C1.3 to ensure they comply with ADA requirements.

14. Provide a photometric plan for proposed lighting.

    Response: A photometric plan has been added to the plan set.

15. Provide permanent seeding plan for disturbed areas.

Response: "Hydroseeding Notes for Lawn" have been added to sheet L-1 in the plans.

16. Call out and provide detail for temporary sediment barriers at catch basins.

Response: Inlet Protection is called out for each proposed catch basin on sheet C1.5.

17. We recommend that the hydrogeologic report be sealed by the responsible professional.

Response: The hydrogeologic report has been sealed by the responsible professional. The sealed hydrogeologic report is included with this submittal as Appendix E.

18. We recommend that the 10 mg/l nitrate-nitrogen line be shown on the plans.

Response: A note has been added to the site plan on sheet C1.4 under Utility Notes.

19. The Utility Inset shown on Sheet C1.4 is unclear. We have the following comments, several of which, may require further discussion with the Town:

Response: We agree that this area needs additional design detail for construction-level drawings. The applicant will coordinate the items below on-site with input from public works and the water district.

a. What is the gray line with arrow from the CB in the road to the CB located outside the ROW? If this is a storm drain pipe, label the pipe size, slope and length and provide appropriate callouts for modifying the existing catch basins.
b. Who is responsible for maintaining the CB that is located outside the ROW? During a prior site visit this CB was essentially completely covered with accumulated sediment, indicating that it had not been maintained in some time.
c. We have concerns about the proximity of the drainage structures/piping and the existing and proposed water infrastructure. The proposed configuration could make for challenging maintenance in the future, if/when required.
d. Given that it appears that municipal drainage ties into the CB that is located outside the ROW, we would recommend that an easement to the Town of Gray be provided for the CB. Additionally, it would seem that an easement would be required to the Gray Water District for the existing and proposed meter pits (GWD should weigh in on this).

Recommended Changes from Planning Board

1. Requiring that open space and forested wetlands are delineated on the plan, with notation as areas "not for development."

Response: A note has been added to sheet C1.0 to this point.

2. Requiring the locations and area of wetland impact to be shown on the plan, as noted by the town's consulting engineer.

   Response: The location and area of wetland impact has been added to sheet C1.3

3. Requiring stormwater buffer signage in accordance with Maine DEP guidelines, as noted by the town's consulting engineer.

   Response: A note has been added to sheet C1.5 indicating that the buffer shall be staked prior to start of construction and marked permanently with signage post-construction. Northing and Eastings have been added to the buffer.

4. Requiring the installation of bollards or boulders to delineate the underground propane tanks and prevent any vehicle from going over that part of the lawn.

   Response: Boulders have been added to the Site Plan on sheet C1.2 and a detail for the boulder is shown on sheet C2.2.

5. Requiring additional signage to delineate the access road on the side of the new building as "no parking – emergency vehicle use only."

   Response: Signage has been added as shown on sheet C1.2.

6. Requiring receipt of the MeDEP stormwater permit as a condition of approval.

   Response: Noted.

7. Requiring widening of the proposed footpath behind the new building to 4', extending it around the building to connect with the sidewalk and requiring that it be winter maintained to provide fire ladder access, per Public Safety request.

   Response: The footpath has been widened and extends around the new building. Additionally, the grading on the southeasterly corner of the building has been revised to make the path traversable/accessible.

8. Adding bollard/ boulder protection to the south side of the transformer if it remains in proposed location.

   Response: Two bollards are shown in front of the proposed transformer pad.

9. Requiring that the existing unpaved drainage area, shown at the intersection of the interior crosswalks with the drainage cover, will be vegetated/landscaped to serve as the parking island per 402.10.13 I.

   Response: This area has been called out as a "Vegetated Island" on sheet C1.2.

Comments from Fire Chief

1. Regarding the addition of buffer trees near the proposed storage shed, [the fire chief] is advising that we need to make sure their width at full growth does not impede access to the rear of those buildings: "As the trees mature, we will be looking to make sure they still comply with NFPA 18.2.3.5.1.2."

   Response: Trees planted in this area are not anticipated to impede access to the rear of the existing buildings and will be trimmed as needed. Please refer to the Landscape Plan on sheet L-1 for tree size information.

2. "Other items I want to make sure they don't forget about is proper signage on the road they added for our approach. I am concerned about meeting traffic head-on when responding to an alarm at the new facility. If it does get to be a problem, I will probably ask them to either change the traffic flow to one way in instead of out or make it gated at both ends with a motorized gate similar to what the turnpike has for their plow access roads. The NFPA standard for this begins at 18.2.3.6 Marking of Fire Apparatus Access Road and goes through 8.2.4.2.2. If they want to assure us that these potential issues won't become a problem, I'd like them to put in writing that they understand that we will require these changes if we encounter problems with access."

   Response: The circulation through the access road has been changed from clockwise to counterclockwise, eliminating the potential for conflicting traffic patterns.

Comments from Tom Errico of T.Y. Lin, Town's Traffic Reviewer

1. Review Comment: I have reviewed the plans and the proposed crosswalks are acceptable. I would recommend that standard MUTCD warning signs be installed for the crosswalk leading to the Gray Trail.

   Response: MUTCD warning signs have been added to the plans at the crosswalk leading to the Gray Trail on sheet C1.2.

2. Review Comment: The applicant should confirm that all crosswalks will be ADA compliant (provide design details) and note if detectible warning panels are required and if so, depict those on the plans.

   Response: Design details have been provided for ADA ramps and detectable warning surfaces on sheet C2.2. The locations of detectable warning surfaces are shown on sheet C1.2.

3. Review Comment: I find this traffic calming strategy to be acceptable.

   Response: Noted.

4. Review Comment: I find the sidewalk design details to be acceptable. Although final review of sidewalk design details between the site and Hancock Street are pending.

Response: Noted.

5. Review Comment: There are some sidewalk segments where a buffer does not provide separation (e.g. in front of the new building). Additionally, the details for the new sidewalk to Hancock Street are not provided. The applicant likely has a winter maintenance program and should note that this includes timely plowing of sidewalks. I would suggest that the applicant be responsible for plowing the new sidewalk to Hancock Street.

   Response: The applicant has a winter maintenance program that includes timely maintenance of sidewalks. Snow will not be pushed onto the sidewalk in front of the proposed building.

6. Review Comment: I find the snow storage areas to be reasonable.

   Response: Noted.

7. Review Comment: The suggested traffic circulation plan is acceptable.

   Response: Noted.

8. Review Comment: The proposed circulation plan addresses this issue.

   Response: Noted.

9. Review Comment: As noted the traffic circulation plan is acceptable.

   Response: Noted.

10. Review Comment: The proposed parking lot islands are acceptable. It should be noted that plantings shall not obstruct sight lines to and from the crosswalk for pedestrians.

    Response: The plantings in the vegetated island will not obstruct sight lines to and from the crosswalk for pedestrians.

11. Review Comment: The vehicle turning template indicates the vehicle will track off the pavement at the entry to the 12-foot one-way drive. Adjustments should be incorporated.

    Response: The tire tracking path of the firetruck will remain on the pavement. The body of the firetruck will have some overhang over the edge of pavement. For clarity, the line types of the firetruck body overhang are shown as a lighter dashed line and tire tracking path is shown as a bold continuous line on sheet C1.2.

12. Review Comment: Similar to #11, the vehicle template depicts the vehicle tracking off the pavement.

    Response: See response above.

13. Review Comment: I find the proposed aisle widths to be acceptable.

Response: Noted.

14. Review Comment: The applicant has provided a plan at the Avesta Drive and Hancock Street intersection which documents acceptable sight distance is provided. It also included the installation of a STOP sign and removal of the existing YIELD sign. I find the plan to be acceptable and thus find access to and from the site to be acceptable.

Response: Noted.

400 Commercial Street, Suite 404
Portland, ME 04101
207.772.2891

MEADOWVIEW II PROJECT NARRATIVE

EXISTING CONDITIONS

The site contains three buildings that currently supports 20-units of affordable housing for seniors ("Meadowview I"). Meadowview I is USDA Rural Development assisted housing owned by Gray Senior Housing. Access throughout the site is provided off a dead end on Hancock Street via a paved drive with 28 parking spaces. The site is served by public water off the existing water main in Hancock Street with a 2" service that goes to a water meter pit and is then distributed to the individual dwelling units. Sanitary sewage is directed via gravity to a pump station located off the southern end of the parking area where it is conveyed via a force main to a disposal field located off the west side off Hancock Street near the site entrance. Electrical power and communication services run underground from a utility pole located on Hancock Street near the turnaround area at the dead end. Existing overhead electric lines on Hancock Street are single phase. Stormwater is discharged generally on the southern end of the site via overland flow. The eastern portion of the site is tributary to an unnamed stream and the western portion of the site drains to wetlands. No catch basins or drainage manholes are located on site.

The site is significantly underutilized with a large portion of the land lying vacant. The existing parking layout and terrain make the remaining vacant land on the site ideal for multifamily development and facilitate additional housing units with a minimum of additional impervious area.

PROPOSED DEVELOPMENT

The proposed new construction ("Meadowview II") would be 26 affordable (60% AMI) rental units, all one-bedroom, in a two-story elevator building. The building would maintain the existing elderly demographic by being set aside for households 55+. We believe that the addition of the new housing with a large community room, porch, gazebo, and community garden will foster a sense of community through extensive social interaction. The garden, community building, porch, and gazebo will be open to residents of both properties and the shared use of these amenities should inspire a sense of community and create a campus feel. Below is a description of the proposed infrastructure related to the development.

Utilities

Water

The proposed development will be served from the existing 6" water main in Hancock Street with a 2" domestic line and 6" fire suppression line. The domestic line will be fed through a meter pit after branching off the water main.

Sewer

The sewage generated from the proposed development will be directed to an engineered septic system, due to the anticipated flows exceeding 2,000 gpd in accordance with Section 10 of Maine Subsurface Wastewater Disposal Rules, CMR241. As required by the subsurface plumbing rules, the system will be reviewed by the Maine Department of Health and Human Services, as well as the Maine Department of Environmental Protection. The applicant will secure a permit for the septic system prior to applying to the Town for a building permit.

Electric/Communications

Underground power and communication services will drop off a proposed utility pole on the abutting Gray Plaza parcel. Services will be underground. The owner of the Gray Plaza has agreed to provide an easement for these utilities, see attached letter from the property owner in Appendix A

Common Areas

The garden, community building, porch, and gazebo will be open to residents of both properties and the shared use of these amenities should inspire a sense of community and create a campus feel.

OWNERSHIP STRUCTURE

Meadowview I is currently owned by Gray Senior Housing, Inc (GSH). Gray Senior Housing, Inc. has an identical board to Avesta Housing Development Corporation (AHDC). It is wholly controlled by the leadership of AHDC. GSH has fee ownership over half of the site.

The other half of the site (to the East of the unnamed stream) was owned by Lloyd Dunn until February 2022, as called out on the Existing Conditions Survey. AHDC has since purchased the land. AHDC and GSH therefore have full control over the site via Fee Simple interest.

Meadowview II will be developed by Avesta Meadowview II LP. Avesta housing will have a controlling interest in the limited partnership via control of the general partner by AHDC.

Ultimately, the combined parcels will be a two land-unit condominium association as shown on the Subdivision Plan. The first unit will remain controlled by Gray Senior Housing, Inc. This condo unit will include all three existing buildings. The second land condo unit will be the new building, which will be owned by Avesta Meadowview II LP, which is controlled by AHDC. The entire site then is owned and controlled by AHDC.

The applicable deeds, purchase and sale agreement, and documentation GHS and AHDC boards is included as *Appendix A Right Title and Interest.*

COMPLIANCE WITH TOWN REQUIREMENTS

The following is providing to document that the proposed development meets the Town's standards for Subdivision, Site Plan, Conditional Use, Multi-Family Housing, and the Village Center Design Standards.

401.13 Subdivision Performance & Design Standards

401.13.1 – Basic Subdivision Layout

1. Blocks.

   Where street lengths exceed one thousand (1,000) feet between intersections with other streets, the Board may require a utility/pedestrian easement, at least twenty (20) feet in

width, to provide for underground utility crossings and/or a pedestrian pathway of at least five feet in width constructed in accordance with design standards for sidewalks below. Maintenance obligations of the easement shall be included in the written description of the easement.

Response: NA, no new streets or blocks are proposed

2. Lots.

Response: NA, no new lots are proposed.

3. Utilities.

Utilities serving lots with a street frontage of one hundred and fifty (150 ft.) feet or less shall be installed underground.

Response: All proposed utilities will be underground.

4. Monuments.

Response: NA, no new lots or streets are proposed.

401.13.2 – Sufficient Water

Response: Water will be provided via a public watermain in Hancock via a 2" domestic service and a 6" fire service. The buildings will be sprinkled, and a hydrant will be provided in the location requested by the Gray Fire Department. Please refer to the letter from the Gray Water District in Appendix B, and the Utility Plan.

401.13.3 – Erosion and Sedimentation and Impact on Water Bodies

Response: The proposed development will comply with the Maine Department of Environmental Protection's standards and recommended best practices for controlling Erosion and Sedimentation. Please refer to the attached Site Plans and the Erosion and Sedimentation Control Notes and Details.

401.13.4 – Sewage Disposal

The applicant shall submit evidence of site suitability for subsurface sewage disposal prepared by a Maine Licensed Site Evaluator in full compliance with the requirements of the State of Maine Subsurface Wastewater Disposal Rules.

Response: Please see attached soils reports from Albert Frick Associates, Inc. in Appendix C for documentation that the proposed septic system is in compliance and attached Utility Plan for location and configuration. An alternative location for the septic field is shown on the Overall Site Plan. The Applicant will provide an easement over this area that prohibits building.

401.13.5 – Solid Waste

If the additional solid waste from the proposed subdivision exceeds the capacity of the municipal solid waste facility, causes the municipal facility to no longer be in compliance with its license from the Department of Environmental Protection, or causes the municipality to exceed its contract with a non-municipal facility, the applicant shall make alternate arrangements for the disposal of solid waste. The alternate arrangements shall be at a disposal facility which is in compliance with its license. The Board may not require the alternate arrangement to exceed a period of five years.

Response: The applicant will contract with a private hauler for pickup of trash and recyclables.

401.13.6 – Impact on Natural Beauty, Aesthetics, Historic Sites, Wildlife Habitat, Rare Natural Areas or Public Access to the Shoreline

Response: The majority of the site will be preserved as woodlands providing habitat and scenic beauty. The applicant will provide the Town with public assessments for pedestrian use of trails and pathways.

401.13.7 – Conformance with Zoning Ordinance and Other Land Use Ordinances

All lots, other than those found within cluster developments approved pursuant to section 401.13.13, shall meet the minimum dimensional requirements of the Zoning Ordinance for the zoning district in which they are located. The proposed subdivision shall meet all applicable performance standards or design criteria from the Zoning Ordinance and other land use ordinances.

Response: No new lots are proposed for this subdivision. This application meets the applicable Ordinances as described herein.

401.13.8 – Financial and Technical Capacity

Response: Please refer to attached financial and technical capacity letter from Bangor Savings Bank dated January 13, 2022, in Appendix D.

401.13.9 – Impact on Groundwater Quality or Quantity

Response: Please refer to the Applicant's Hydrogeologic Assessment in Appendix E .

401.13.10 – Floodplain Management

When any part of a subdivision is located in a special flood hazard area as identified by the Federal Emergency Management Agency.

Response: The proposed subdivision is not in a FEMA Flood Zone.

401.13.11 – Identification of Freshwater Wetlands, River, Streams or Brooks

Freshwater wetlands within the proposed subdivision shall be identified in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, published by the United States Army Corps of Engineers. Any rivers, streams, or brooks within or abutting the proposed subdivision shall be identified.

Response: Freshwater wetlands and the unnamed stream within the proposed subdivision were identified and flagged by C.C. Dorion Geological Services, LLC, and are shown on the existing conditions survey. The wetland investigation fieldwork was based on wetland identification methods described in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0.

401.13.12 – Stormwater Management

Response: Please refer to the Applicants Stormwater Management Report in Appendix F

401.13.13 – Residential Open Space Subdivisions

Response: Not applicable to multi-family developments.

401.13.14 – Compliance with Timber Harvesting Rules

Response: Not applicable

401.13.15 – Traffic Conditions and Streets

Response: Please refer to the Applicant's Transportation Memorandum in Appendix G.

401.13.16 – Specific Access and Street Design Standards (Adopted Dec 7, 2010)

Response: Please refer to the Applicant's Transportation Memorandum in Appendix G

401.13.17 – Driveway Design Standards (Adopted May 18, 2010)

Response: Please refer to the Applicant's Transportation Memorandum in Appendix G.

401.13.18 – Net Residential Area and Density

Response: Please refer to the attached density letter, calculation spreadsheet and supporting plan in Appendix H as well as the soils reports in Appendix C.

402.9.3.F Standards Applicable to Conditional Permitted Uses

It shall be the responsibility of the applicant to demonstrate that the proposed use meets all of the following criteria. The Board shall approve the application unless it makes written findings that one or more of these criteria have not been met:

1. Will be compatible with the general character of the neighborhood with regard to design, scale, and bulk of proposed structures.

   Response: The proposed senior housing units will be located within an existing senior housing development/campus. The proposed building will be located towards the back of the site away from the public way and nearby residences, while still being close enough to the village to facilitate residents walking to town, the library and the adjacent shopping plaza.

2. Will not have a significant detrimental effect on the use and peaceful enjoyment of abutting property as a result of noise, vibrations, fumes, odor, dust, light or glare.

   Response: The addition of senior housing to an existing senior housing development will not result in any of the detrimental effects described above. The proposed building will be located towards the back of the site, away from the public way and nearby residences, and surrounded by woodlands.

3. Will not have a significant adverse effect on adjacent or nearby property values.

   Response: The proposed addition of senior housing to an existing senior housing development will not negatively impact adjacent or nearby property values. The proposed building will be located towards the back of the site, away from the public way and nearby residences, and surrounded by woodlands.

4. Will not result in significant hazards to pedestrian or vehicular traffic or significant traffic congestion.

   Response: The proposed development will not result in significant hazards to pedestrian or vehicular traffic or significant traffic congestion. Please refer to the Applicant's Transportation Memorandum in Appendix G

5. Will not result in significant fire danger.

   Response: The proposed development will not result in significant fire danger. The proposed building will be sprinkled for fire protection and a fire hydrant will be installed between the proposed building and the existing buildings.

6. Will not result in significant flood hazards or flood damage, drainage problems, ground or surface water contamination, or soil erosion.

   Response: The proposed development will not result in significant flood hazards or flood damage, drainage problems, ground or surface water contamination, or soil erosion.

Please refer to the Applicant's Stormwater Management Plan in Appendix F and the Hydrogeologic Assessment in Appendix E.

7. Will be served adequately by, but will not overburden, existing public services and facilities, including fire protection services, roads, water and storm drainage systems.

   Response: The proposed development will not existing public services and facilities, including fire protection services, roads, water and storm drainage systems. Please refer to the capacity to serve determination from the Gray Water District in Appendix B, the Transportation Memorandum in Appendix G, and the Applicant's Stormwater Management Plan in Appendix F.

402.10.14 Standards for Multi-Family Housing

A. Perimeter Buffer Strip

A buffer strip of at least fifty (50) feet in width shall be required around the perimeter of the land area for which the multi-family project is proposed. The required buffer strip shall consist of undisturbed vegetation provided that the existing vegetation consists of mature trees and acts as an effective screen. If existing vegetation provides a poor visual screen, a mix of new landscaping including trees, shrubs and grasses shall be planted.

Response: The required vegetated buffer strip will be provided as shown on the site plans. Portions of the buffer along the western property boundary will be provided on the adjacent Gray Plaza Property via a permanent easement recorded by the owner of the Gray Plaza property. Please refer to the Site and Subdivision plans for proposed easement locations and geometry, and to the letter from the property owner in Appendix A.

B. Driveways and Parking

The scale and surface area of parking areas, driveways and paved areas shall be compatible with adjacent structures, must be properly screened and must provide for parking in accordance with the requirements of Section 402.10.11. B.

Response: As shown on the Site Plans, the proposed surface area of parking area, driveways and paved areas are compatible with adjacent structures and well screened. Parking calculations are provided in the Transportation Memorandum in Appendix G.

C. Internal Road Access to all Units

Access to all housing units within the multi-family development shall be located on the new interior road system constructed as part of the development.

Response: Access to all housing units within the multi-family development will be provided via an internal access drive (parking aisle) which will be extended to provide parking for and access to the new building.

D. Orientation and Scale of Buildings

Buildings shall be oriented with respect to scenic vistas, natural landscape features, topography and natural drainage areas, in accordance with an overall plan for site development. Buildings shall be compatible in terms of physical size, visual impact, intensity of use, proximity to other structures and density of development with other permitted uses within the District.

Response: The building will be located within an existing campus of senior housing buildings set well away from adjacent residences. The building will be surrounded on three sides by woodlands, with the fourth side adjacent to the existing senior housing apartment buildings.

E. Number of Units per Building and Minimum Separation

1. In the Village Center zoning district, the maximum number of attached dwelling units per structure shall be thirty (30) for multi-family developments sited on lots of 14 acres or larger provided that the footprint of the multi-family development structure is less than 15,000 square feet.

Response: The applicant is proposing to construct a multi-family structure in the Village Center zoning district on a 15.5 acre parcel containing 26 dwelling units with a building footprint of less than 15,000 square feet.

2. For multi-family developments in all other zoning districts and in the Village Center zoning district on lots less than 14 acres, the maximum number of attached dwelling units per structure shall be six (6) and the average number or attached dwelling units shall be four (4).

Response: Not applicable.

3. For all multi-family developments, the distance between the foundations of any two principal structures shall be no less than the height of the taller of the two buildings, but in no event shall a building separation of less than thirty (30) feet be permitted.

Response: The distance between structures well exceeds the anticipated height of the proposed building and is greater than 30 feet.

E. Utilities

All dwelling units in the development shall be connected to a common water supply and distribution system (either public or private) in accordance with any policies of the Gray Water District, unless the developer shall clearly demonstrate to the Planning Board that such a system is not feasible and, in addition:

Response: The proposed development will be serviced by the Gray Water District.

Village Center Design Standards

Site Planning

1. Site Character

   Response: The proposed senior housing units will be located within an existing senior housing development/campus. The proposed building will be located towards the back of the site away from the public way and nearby residences, while still being close enough to the village to facilitate residents walking to town, the library and the adjacent shopping plaza.

2. Land Use Buffering

   Response: A 50' wide vegetated buffer strip will be provided as shown on the site plans. Portions of the buffer along the western property boundary will be provided on the adjacent Gray Plaza Property via a permanent easement recorded by the owner of the Gray Plaza property. Please refer to the Site and Subdivision plans for proposed easement locations and geometry, and to the letter from the property owner in Appendix A.

3. Building Placement

   Response: The building will be located within an existing campus of senior housing buildings. The building will face the three existing buildings and all four buildings will share the same open space areas including, pathways, gazebo, and community gardens.

4. Color Standards

   Response: Colors will be compatible with colors of the surrounding area.

5. Trash Loading/Storage Areas

   Response: The trash and recyclables for the new building will be stored in totes in a trash room in the new building. Trash and recyclables for the existing buildings will be stored in a trash shed shown on the site plans. The applicant will contract with a private hauler for pickup. This arrangement will allow the applicant to remove the existing dumpster and enclosure.

Part 2 - Landscaping Standards

1. Standard Design Concepts

   Response: Please see attached Landscape and Lighting Plan

2. Landscaping Requirements for Parking Lots Greater than 50 Spaces

Response: Not Applicable

Part 3 - Lighting Standards

Response: Please see attached Landscape and Lighting Plan

Part 4 – Residential Design Standards

Response: Not Applicable

TOWN OF GRAY MAINE

FINAL SUBDIVISION PLAN APPLICATION SUBMISSION CHECKLIST

Subdivision Name Meadowview II Date 05/20/2022

This checklist has been prepared to assist applicants in developing their applications. It should be used as a guide in assembling the information necessary for a complete application. The checklist, however, does not substitute for the requirements of **Article 8** of the Subdivision Ordinance. The Planning Board will also use the checklist to ensure your application is complete. Indicate if the information has been submitted or if a waiver is requested. If you feel that information is not applicable to your project, please indicate in the second column. The perimeter survey, subdivision plan and engineering plans may be contained on the same drawing. Detailed engineering drawings such as road profiles, drainage swales and erosion/sedimentation plans, however, may best be presented on a separate sheet or sheets.

Note that this checklist only covers the submission requirements for a *final* plan. There is an additional checklist for *preliminary* plan submission, which should have been completed previously. Neither checklist addresses the standards that the subdivision plan must meet. For review standards refer to **Article 13**. You should have completed Checklist F-1D at preliminary plan.

FINAL SUBDIVISION PLAN SUBMISSION REQUIREMENTS	**Submitted by Applicant**	**Not Applicable**	**Applicant Requests to be Waived**	**Review by Planner/ Engineer**	**Waived by Planning Board**
401.8.1 PROCEDURE					
A. Submittal of draft Final Plan within 6 months of approval of the Preliminary Plan OR submittal of request for an extension to the filing deadline	x				
B. Filing of appropriate Final Plan application fee & peer review escrows	x				
C. Prior to submittal of Final Plan application, the following approvals shall be obtained where applicable: 1. Maine DEP permit(s) 2. Maine DHS permit(s) if public water system 3. Maine DHS permit(s) if engineered subsurface wastewater disposal system 4. Army Corps of Engineers if Section 404 permit required 5. Maine DOT Traffic Movement Permit and/or Highway Entrance/Driveway Access Permit (The Board may require a letter from the various agencies verifying if their regulations do or do not apply)	x				
D. If applicable per Section 401.7.2.C.23, confirmation that Maine Historic Preservation Office received a copy of the proposed plan and mitigation measures		x			
E. Written Approval of Town E911 Officer	App I				
K. Performance Guarantee requirements specified in Article 11	TBD				

Gray Final Subdivision Submissions Checklist—Project Name Meadowview II Date 05/20/2022

FINAL SUBDIVISION PLAN SUBMISSION REQUIREMENTS	Submitted by Applicant	Not Applicable	Applicant Requests to be Waived	Review by Planner/ Engineer	Waived by Planning Board
401.8.2.A SUBMISSIONS					
One or more maps or drawings at scale of not more than 1"=100'; subdivision more than 100 acres, not larger than 1"=200'	x				
Plans not larger than 24" x 36" with 2" border on binding side; 1" for borders elsewhere	x				
Block for Planning Board signatures	x				
One reproducible, stable based transparency of the recording plan to be recorded at the Registry of Deeds, and 14 full sized paper copies of all the final plan sheets and any supporting documents	x				
401.8.2.B FINAL PLAN INFORMATION					
B.1 Final Plan Application and Submission Check-list	x				
B.2 Name of Subdivision, Name of Town and Assessor's Map and Lot Number(s)	C1.2				
B.3 Total acres in subdivision; location of property lines, existing building(s), vegetative cover type and other essential physical features	C1.2				
B.4 Type of sewage disposal proposed	C1.4				
B.5 Type of Water Supply	C1.4				
B.5.a Gray Water District approval of water system design	App B				
B.5.b Fire Chief letter on hydrants or other fire protection measures	App J				
B.5.c Well driller or hydrologist letter on ground water supply and quality		x			
B.6 Date plan prepared, north point, graphic map scale	x				
B.7 Names and addresses of record owner, applicant, plan preparer(s) and adjoining property owners	C1.1				
B.8 Location of any zoning boundaries affecting the property	C1.2				
B.9 If different than Preliminary Plan submittal, any deed restrictions on proposed new lots or dwellings		x			

Gray Final Subdivision Submissions Checklist—Project Name Meadowview II Date 5/20/2022

FINAL SUBDIVISION PLAN SUBMISSION REQUIREMENTS	Submitted by Applicant	Not Applicable	Applicant Requests to be Waived	Review by Planner/ Engineer	Waived by Planning Board
B.10 Location and size of existing and proposed sewers, water mains, culverts and drainage ways on and adjacent to proposed subdivision	x				
B.11 Location, name and widths of existing and proposed streets, easements, building lines, parks and open spaces on or adjacent to subdivision tied to survey points and certified by a registered land surveyor	Sheet 1&2				
B.12 Street design plans		x			
B.13 Location and dimensions of streets, public improvements and open space in subdivision from Official Map, Comprehensive Plan or Capital Improvements Program		x			
B.14 Parcels proposed for dedication to public use; condition(s) of dedication; written documentation of management of subdivider-retained parcels; legal sufficiency to convey title(s) to Town	C1.1				
B.15 100-year flood elevations		x			
B.16 Location and method of construction debris disposal	TBD				
B.17 Copies of all plans & studies contained in preliminary plan approval	x				
B.18 Copies of all outside agency reviews & permits	x				
PRELIMINARY SUBDIVISION PLAN CONDITIONS OF APPROVAL MET	**Submitted by Applicant**	**Not Applicable**	**Applicant Requests to be Waived**	**Received by Planning Board**	**Waived by Planning Board**
Date of Preliminary Approval 02/10/2022					

APPENDIX A

Right, Title and Interest

Meadowview II
Site Plan and Final Major Subdivision Review Submission
16 Hancock Street
Gray, Maine

7658

Know All Men by These Presents.

That GRAY PLAZA, INC.

a Corporation organized and existing under the laws of the State of Maine and located at Gray in the County of Cumberland and State of Maine in consideration of One dollar and other valuable considerations

paid by GRAY SENIOR HOUSING, INC., a Maine Corporation with a principal place of business at said Gray,

the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey unto the said

GRAY SENIOR HOUSING, INC., its successors,

~~heirs~~ and assigns forever, a certain lot or parcel of land located off Skillings Street in Gray and more particularly described as follows:

Beginning at an iron pipe found where the Southwesterly corner of the Bonney property meets the Northerly line of land of Gray Plaza, Inc. and proceeding S 7°54'-28" W for a distance of 70.63' to an iron pipe set; then S 37°-09'-32" E for a distance of 867.47' to an iron pipe set; then S 9°-17'-00" W for a distance of 86.66' to an iron pipe set; then N 86°-32'-10" W for a distance of 570.76' to a monument; then N 14°-32'-10" W for a distance of 500' to a monument; then N 3°-27'-50" E for a distance of 400' to a monument; then S 67°-27'-08" E for a distanceoof 185.00' to point of beginning.

Meaning and intending to convey 7.8 acres, more or less, of the property described in the Deed from HANSEN FARMS, INC. to GRAY PLAZA, INC., dated May 27, 1969 and recorded in the Cumberland County Registry of Deeds in Book 3087, Page 141.

STATE OF MAINE
REAL ESTATE TRANSFER TAX
MAY-7'75
Bureau of Taxation
= 1.00
RE-10852

the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said

GRAY SENIOR HOUSING, INC., its successors and assigns, to it and their use and behoof forever.

And the said Grantor Corporation does hereby covenant with the said Grantee, its successors and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances:

that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors, shall and will Warrant and Defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said

GRAY PLAZA, INC.

has caused this instrument to be sealed with its corporate seal and signed in its corporate name by

PHILIP A. COOK, its president,

thereunto duly authorized, this seventh day of May

in the year one thousand nine hundred and seventy-five.

Signed, Sealed and Delivered
in presence of

[redacted]

GRAY PLAZA, INC.

By [redacted]

(CORPORATE SEAL)

State of Maine. Cumberland ss. May 7, 1975.

Personally appeared the above named

PHILIP A. COOK, president

of said Grantor Corporation

as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me,

[redacted]

Justice of the Peace
Notary Public

SUSAN C. STANLEY, Notary Public
STATE OF MAINE
MY COMMISSION EXPIRES NOV. 27, 1980

MAY 7 1975
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 1 H 14 M PM, and [redacted]
BOOK 3476 PAGE 265.

Acting Register

This FINANCING STATEMENT is presented to a filing officer for filing pursuant to the Uniform Commercial Code.

1 Debtor(s) (Last Name First) and address(es)
[illegible] Elwood F. and Tessie L.
[illegible] Box 52
[illegible] Gloucester, Maine

2 Secured Party(ies) and address(es) 20303
Greyhound Emp. Credit Union
571 E. First St.
S. Boston, Mass. 02127

3 Maturity date (if any): 179

For Filing Officer (Date, Time, Number, and Filing Office)
REGISTRY OF DEEDS CUMBERLAND ss, MAINE
FILED AUG 13 1973
AT 9 H — M 8 M
FILE # 3179 BK 3442 PG. 319

4 This financing statement covers the following types (or items) of property:

Permanent improvements to real estate owned by debtors, recorded at
Book 312, Page 17:
Finish Cellar, Drive Way, Game Room

REGISTRY OF DEEDS CUMBERLAND ss, MAINE
FILED AUG 23 1976
AT 8 H 30 M A M
FILE # 3179 BK. 3896 PG. 179

No. of additional sheets presented: 0

Filed with

TERMINATION STATEMENT

This statement of termination of financing is presented to a filing officer for filing pursuant to the Uniform Commercial Code.
The Secured Party certifies that the Secured Party no longer claims a security interest under the financing statement bearing the file number shown above.

Dated: August 17, 1976 GR[redacted]
By: [redacted] Treasurer

Filing Officer Copy — Acknowledgment — Filing officer is requested to note file number, date and hour of filing on this copy and return it to the person filing, as an acknowledgment.

20320

Known All Men by These Presents,

That GRAY SENIOR HOUSING, INC., (Title 13, Chapter 81)

a Corporation organized and existing under the laws of the State of Maine and located at Gray in the County of Cumberland and State of Maine in consideration of

One dollar and other valuable considerations

paid by the Town of Gray in Cumberland County and State of Maine

the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey unto the said

Town of Gray, its successors and assigns forever, a certain lot or parcel of land: the road leading from Skillings Street to the development of Gray Senior Housing, Inc., and more precisely described, with exact measurements, in Plan Book 110, Page 9, in the Cumberland County Registry of Deeds. This conveyance is made pursuant to an agreement between the Grantor and Grantee herein, who agreed to accept said parcel as a Town road.

The Grantor derives its ownership and title by:

1. Deed of Trustee from Paul L. Powers, Trustee under will of Gertrude M. Libby to Gray Senior Housing, Inc., dated September 5, 1974 and recorded in Cumberland County Registry of Deeds, Book 3605, Page 257; and

2. From a Warranty Deed from Gray Plaza, Inc. to Gray Senior Housing, Inc., dated May 7, 1975, and recorded in Cumberland County Registry of Deeds, Book 3676, Page 265.

130

To have and to hold the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said

Town of Gray, its

successors
heirs and assigns, to its and their use and behoof forever.

And the said Grantor Corporation does hereby covenant with the said

successors
Grantee , its heirs and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances; except for a mortgage held by United States of America acting through the Farmer's Home Administration, United States Department of Agriculture, dated May 7, 1975 and duly recorded in the Cumberland County Registry of deeds, which mortgagee has agreed to subject convevance, that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors, shall and will Warrant and Defend the same to the said Grantee , its

successors
heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said

GRAY SENIOR HOUSING, INC.

has caused this instrument to be sealed with its corporate seal and signed in its corporate name by

George L. Freeman, Jr. , its President

thereunto duly authorized, this twelfth day of January

in the year one thousand nine hundred and seventy-six.

Signed, Sealed and Delivered
in presence of

[redacted]

GRAY SENIOR HOUSING, INC.

By [redacted]
George L. Freeman, Jr.

(CORPORATE SEAL)

State of Maine, Cumberland ss. January 12, 1976.

Personally appeared the above named

George L. Freeman, Jr. of said Grantor Corporation

as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me,

[redacted]

Justice of the Peace
~~Notary Public~~

AUG 23 1976

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 8 H 30 M, and recorded in
BOOK 3896 PAGE 179.

[redacted]

Acting Register

21011

D E E D O F T R U S T E E.

Know all men by these presents, that I, Paul L. Powers, of Freeport, in the County of Cumberland and State of Maine, sole acting Trustee under the Last Will and Testament of Gertrude M. Libby, late of Gray, in said County of Cumberland and State of Maine, whose estate is of record under Docket # 61715, in the Cumberland County Probate Court, by virtue of the authority given by the said Gertrude M. Libby, in her Last Will and Testament, in my capacity as Trustee as aforesaid, and in consideration of One Dollar to me paid by Gray Senior Housing, Inc. of Gray, in the County of Cumberland and State of Maine, the receipt whereof is hereby acknowledged, do hereby sell and convey unto Gray Senior Housing, Inc., its successors and assigns, the folowing described real estate, which was the property of the said Gertrude M. Libby, situated in the Town of Gray, in the County of Cumberland and State of Maine, and bounded and described as follows:

A parcel of land of the approximate dimensions of thirty-three (33) feet by sixty-five (65) feet; being the land between the Southerly end of Skillings Street, so-called, in said Gray, in a Southerly direction to land of Hans Hansen, now or formerly; and being the same lot or parcel in and through which Linwood F. Libby conveyed a certain easement grant or privilege, by his deed of quit-claim dated August 4, 1950 and recorded on May 22, 1959 in Cumberland County Registry of Deeds, in Book 2473, Page 395, to Gray Water District, the possession and use of the said premises being therein stated to be and remain in said Grantor, his heirs, executors, administrators and assigns, subject however to the grant therein made, as fully as if the conveyance had not been executed;

To have and to hold the above granted premises unto the said Gray Senior Housing, Inc., its successors and assigns, forever.

And I, the said Paul L. Powers, in my said capacity, do hereby covenant to and with the said Gray Senior Housing, Inc., its successors and assigns; that I am the sole acting Trustee under the Last Will and Testament of the said Gertrude M. Libby; that I have power under said will to sell as aforesaid; and that in making this conveyance, I have in all respects, acted in pursuance of the authority granted in and by said last will and testament.

In witness whereof I hereunto set my hand and seal in my said capacity, this 5th day of September, in the year of our Lord one thousand nine hundred and seventy-four.

Signed, sealed, and delivered
in presence of

[redacted]

[redacted]
Trustee under Will of
Gertrude M. Libby, late
of Gray, Maine.

State of Maine
Cumberland, ss. September 5, 1974.

Personally appeared the above named Paul L. Powers and acknowledged the foregoing instrument by him signed to be his free act and deed in his capacity of Trustee under the Will of Gertrude M. Libby, late of Gray, Maine. Before me

[redacted]
Notary Public
Justice of the Peace

OCT 1 1974
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE
Received at 1 3 51 M P.M. and rec[redacted]egister
BOOK 3605 PAGE 257

OPTION AGREEMENT

THIS OPTION AGREEMENT (the "Agreement") made and entered into as of the 26th day of February, 2021, by and between JEAN S. DUNN and LLOYD A. DUNN, individuals with a mailing address of PO Box 15, Gray, ME 04039 (collectively the "Grantor") and AVESTA HOUSING DEVELOPMENT CORPORATION, a Maine nonprofit corporation with a place of business and mailing address of 307 Cumberland Avenue, Portland, Maine 04101 ("Grantee")

WITNESSETH:

In consideration of Two Thousand Five Hundred Dollars ($2,500.00) (the "Option Consideration") , the receipt of which is hereby acknowledged by Grantor, Grantor and Grantee hereby agree as follows:

1. Grant of Option. Grantor hereby grants to Grantee, its successors and assigns, the exclusive and irrevocable option to acquire certain parcels of land with the buildings and all fixtures and improvements thereon, located on (i) Hancock Street, Gray, Maine, shown on Town of Gray Tax Map 44, Lot 405-43 (the "Tax Map"), and described in a deed recorded in the Cumberland County Registry of Deeds in Book 16721, Page 339, including approximately 8 acres of land, together with all easements appurtenant thereto (the "Hancock Street Parcel"), and (ii) that strip of land formerly owned by The Maine Narrow Gauge Railroad and Industrial Heritage Trust, d/b/a Maine Narrow Gauge Railroad Company & Museum, together with all easements appurtenant thereto, which bisects the Hancock Street Parcel, as shown on the Tax Map and which is described in a deed to Grantor dated December 10, 2019 and recorded in said Registry of Deeds in Book 36268, Page 178 (the "Railroad Parcel") and the strip of land abutting the above parcels containing 0.757 acres, more or less, as described in the deed to the Grantor recorded in Book 36257, Page 201, and together with the Hancock Street Parcel and Railroad parcel referred to as the "Property"). The Property shall be conveyed reserving to the Grantor and Grantor's successors and invitees an easement over the Property for recreational use providing access to Grantor's adjacent property. The scope of use and provisions of such easement shall be mutually agreed to by the parties within ninety (90) days after the date of this Agreement, subject, however, to the following conditions, which shall be set forth in the deed to the Property in the provisions reserving such easement: (i) The reserved easement shall not have a material adverse effect upon Grantee's proposed development or the approvals process for such development; and (ii) use of the reserved easement shall not cause damage to the Property or Grantee's building to be built on the Property, including, without limitation, damage due to erosion or runoff.

2. Expiration; Extension. This option shall expire on December 31, 2021, at midnight, Maine time unless exercised by that date and time. Grantee may as of right extend the term of this option for an additional six months, by written notice to Grantor. Grantee may with the written approval of Grantor, which shall not be unreasonably withheld, extend the term of this option for a second six month period, by written notice to Grantor.

3. Notice of Exercise; Failure to Exercise. This option may be exercised only by Grantee giving written notice of election to exercise to Grantor by first class mail, postage prepaid, registered or certified, return receipt requested, addressed to Grantor at the address set forth at the beginning of this Agreement, or to such other address as Grantor may designate to Grantee in writing. Said notice shall be deemed to have been duly given if postmarked prior to the expiration date and time specified herein. In the event that Grantee fails to exercise the option granted in this Agreement within the time specified in Section 2 above, the Option Consideration shall be retained by Grantor, and thereafter neither Grantor nor Grantee shall have any further rights or claims against the other.

4. Exercise. In the event that Grantee exercises the option granted in this Agreement to purchase the Property as provided herein, the following provisions shall be applicable:

a. Purchase Price. Subject to any adjustments and prorations hereinafter described, the total purchase price for the Property shall be the lesser of $250,000 or $10,000 per dwelling unit that is permitted to be constructed on the Property by the Planning Board of the Town of Gray (the "Purchase Price"), payable at closing by certified or bank cashiers' check or by wire transfer. Provided, however, that the minimum purchase price shall be $150,000 in the event less than 15 dwelling units are permitted.The Option Consideration shall be credited against the Purchase Price at closing.

b. Title to the Property. At closing, Grantor shall convey to Grantee good and marketable title to the Property in fee simple, free and clear of all liens, claims and encumbrances except standard utility easements that do not materially and adversely affect the use and enjoyment of the Property. In the event that title to the Property is not as set forth in the previous sentence, Grantor shall be given a reasonable period of time, not to exceed thirty (30) days, after receipt of notice from Grantee in which to remedy any title defects. Grantor shall use reasonable efforts to remedy any title defects, but shall not be obligated to expend any funds to do so. In the event that any title defects cannot be corrected or remedied within said time period, then this Agreement shall terminate, whereupon Grantor shall fully refund to Grantee the Option Consideration. Grantee may elect to close notwithstanding such defects as may exist.

c. Closing. The closing under this Agreement shall take place not later than sixty (60) days after this option is exercised (the "Closing Date") at 10:00 AM, local time, at Grantee's counsel's office, or at such other time and place as Grantor and Grantee shall mutually agree upon in writing. At the closing, Grantor shall execute a Warranty Deed to the Property and such other documents and instruments as Grantee shall reasonably request and that are customary in commercial real estate transactions in Maine.

d. Risk of Loss. At all times during the term of this Agreement, all risk of loss to the Property prior to the closing shall be on Grantor.

e. Adjustments. Real property taxes shall be prorated as of the Closing Date based on the latest available tax bill. Grantee shall pay the cost to record the deed and any financing documents executed by Grantee. The parties shall share equally the Maine transfer tax according to law..

f. Default; Remedies. In the event that Grantee exercises its option but fails to close hereunder for a reason other than the default of Grantor, Grantor's sole remedy shall be to retain the Option Consideration as full and complete liquidated damages in lieu of any other legal or equitable remedy, whereupon this Agreement will terminate and neither party will be under any further obligation hereunder. In the event Grantor defaults under this Agreement, Grantee shall have available all remedies at law and in equity, including, without limitation, the right of specific performance or, in the alternative, the right to seek a complete refund of the Option Consideration.

g. Possession. Grantor shall deliver the Property to Grantee at closing free and clear of all leases, tenancies and occupancies by any person.

h. Condition Precedent. Grantee's obligation to acquire the Property under this Agreement is conditioned upon there having occurred no material adverse change in or to the Property between the date of Grantee's inspections and the Closing Date If this condition is not satisfied as of the Closing Date, Grantee may terminate this Agreement and receive a full and complete refund of the Option Consideration.

i. Brokers. The parties represent to each other that neither has had any dealings with any real estate broker in connection with this transaction.

5. Inspection. At all times during the term of this Agreement, upon reasonable prior notice, Grantee and any prospective lender or investor of Grantee's shall have the right to enter the Property and perform, at Grantee's expense, any and all inspections, tests, surveys or other due diligence inquiries with respect to the Property as Grantee deems necessary or appropriate. Grantee agrees to return the Property as nearly as possible to its original condition after any of such tests and inspections. In the event Grantee is not satisfied for any reason by the results of such due diligence inspections, Grantee shall have the option of terminating this Agreement by written notice to Grantor. Without limiting the generality of the foregoing, this Agreement is subject to a determination by Maine State Housing Authority as to the desirability of the Property for Grantee's intended use as a result of the completion of the environmental review process required by the United States Department of Housing and Urban Development, and if such determination is unsatisfactory, Grantee may terminate this Agreement.

6. Notices. Except as provided in Section 3 above, all notices, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given on the date of service if served personally on the party to whom notice is to be given, or on the first business day after mailing if mailed to the party to whom notice is to be given by first class mail, postage prepaid, registered or certified, return receipt requested, addressed to the recipient at the addresses set forth at the beginning of this Agreement. Either party may change its address for purposes of this Section by giving the other party notice of the new address in the manner described herein.

7. Assignment. Upon written notice to Grantor, Grantee may assign this Agreement and all its rights and obligations hereunder to an entity affiliated with Grantee. Upon notice of

such assignment, Grantor agrees to look solely to such affiliate for performance of the obligations of the Grantee hereunder.

8. Miscellaneous. Time is of the essence hereof. This Option Agreement constitutes the entire agreement between Grantor and Grantee, there are no agreements or understandings between the parties except as set forth herein, and all prior agreements and understandings are superseded by this Agreement. This Option Agreement will inure to the benefit of and bind the respective successors and assigns of Grantor and Grantee. As used in this Option Agreement, the singular number shall include the plural, the plural the singular, and the use of one gender shall be deemed applicable to all genders. This Agreement shall be governed by and construed in accordance with the laws of Maine. If any provision of this Agreement is determined to be invalid or unenforceable, it shall not affect the validity or enforcement of the remaining provisions hereof.

IN WITNESS WHEREOF, Grantor and Grantee have executed this Option Agreement as of the date first above written.

WITNESS:

[redacted]

[redacted] POA For Jean S Dunn

Jean S. Dunn, Grantor

[redacted]

[redacted]

Lloyd A. Dunn, Grantor

[remainder of page left blank intentionally—signatures continue on next page]

IN WITNESS WHEREOF, Grantor and Grantee have executed this Option Agreement as of the date first above written.

WITNESS:

[redacted]

AVESTA HOUSING DEVELOPMENT CORPORATION, Grantee

By: [redacted]
Dana Totman, its President

C:\OneDrive\Documents\CT\Avesta Housing (99475)\Gray Property (505)\Option Agreement_Dunn to AHDC_v4.docx

Law Office of
Robert H. Avaunt, P.A.

Robert H Avaunt, Esq.
Office located at:
31 Main Street Suite 2A
Gray, ME 04039

Mailing Address: P.O. Box 1029
Gray, Maine 04039-1029
ravaunt@gmail.com
Tel 207-657-5077

December 9, 2021

Maurice A. Selinger III
Curtis Thaxter LLC
One Canal Plaza, Ste. 1000
Portland, ME 04101

RE: AVESTA/DUNN

Dear Cito:

Enclosed please find two originals of the Amendment to the Option Agreement extending the expiration date until February 28, 2022. Please return one fully executed Amendment to me with the $10,000 payment. Thank you.

Sincerely,

[redacted]

Robert H. Avaunt

RHA:ljb

Enc.

DunnL\342-05\12-9-21Salinger.ltr

AMENDMENT TO OPTION AGREEMENT

THIS AMENDMENT TO OPTION AGREEMENT made and entered into as of December _____, 2021, by and between LLOYD A. DUNN, an individual with a mailing address of 3 Hancock Street, Gray, ME 04039, for himself and as surviving spouse of Jean S. Dunn (the "Grantor"), and AVESTA HOUSING DEVELOPMENT CORPORATION, a Maine nonprofit corporation with a place of business in Portland, Maine and mailing address of 307 Cumberland Avenue, Portland, Maine 04101 (the "Grantee")

WITNESSETH:

WHEREAS, the parties entered into that certain Option Agreement dated as of February 26, 2021 (the "Agreement") concerning the sale of land to Buyer as more particularly described in the Agreement, and the parties now wish to amend the Agreement as set forth below;

NOW THEREFORE, FOR VALUABLE CONSIDERATION, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. The parties agree the expiration date of the Agreement is hereby extended from December 31, 2021 to February 28, 2022 in consideration of an additional option payment to be made by Grantee contemporaneously with the execution of this Amendment in the amount of $10,000. The definition of "Option Consideration" as set forth in the Agreement is hereby amended to include the original payment of $2,500 previously made, together with the payment made herewith, for a total of $12,500.

2. In the event there occur any changes in federal income tax laws between February 26, 2021 and the Closing Date under the Agreement that result in any increased capital gains tax to Grantor, Grantee shall reimburse Grantor for such increased capital gains tax (the "Increased Taxes"), provided that Grantor furnishes to Grantee a written statement from an independent certified public accountant specifically documenting the amount of Increased Taxes and explaining the changed federal tax law provisions that result in the Increased Taxes.

3. As amended hereby, the Agreement continues in full force and effect and the parties ratify and affirm their obligations to one another thereunder.

IN WITNESS WHEREOF, the parties have executed this Amendment to Option Agreement as of the date written above.

WITNESS:

[redacted]

[redacted]

Lloyd A. Dunn, Grantor

[signatures continue on next page]

IN WITNESS WHEREOF, the parties have executed this Amendment to Option Agreement as of the date written above.

WITNESS:

[redacted]

AVESTA HOUSING DEVELOPMENT CORPORATION, Grantee

By: [redacted]
Dana Totman, its President

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AMENDMENT TO OPTION AGREEMENT

THIS AMENDMENT TO OPTION AGREEMENT made and entered into as of December ____, 2021, by and between LLOYD A. DUNN, an individual with a mailing address of 3 Hancock Street, Gray, ME 04039, for himself and as surviving spouse of Jean S. Dunn (the "Grantor"), and AVESTA HOUSING DEVELOPMENT CORPORATION, a Maine nonprofit corporation with a place of business in Portland, Maine and mailing address of 307 Cumberland Avenue, Portland, Maine 04101 (the "Grantee")

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3. As amended hereby, the Agreement continues in full force and effect and the parties ratify and affirm their obligations to one another thereunder.

IN WITNESS WHEREOF, the parties have executed this Amendment to Option Agreement as of the date written above.

WITNESS:

[redacted]

[redacted]

Lloyd A. Dunn, Grantor

[signatures continue on next page]

IN WITNESS WHEREOF, the parties have executed this Amendment to Option Agreement as of the date written above.

WITNESS:

[redacted]

AVESTA HOUSING DEVELOPMENT CORPORATION, Grantee

By: [redacted]
Dana Totman, its President

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AVESTA HOUSING DEVELOPMENT CORPORATION

SECRETARY'S CERTIFICATE

I, Kimberly Twitchell, hereby certify that I am the duly elected and acting Secretary of Avesta Housing Development Corporation, a Maine corporation (the "Corporation").

I further certify that attached hereto as Exhibit A is a true and correct list of all board members of the Corporation currently serving as of the date of this Certificate.

I further certify that the following individuals were duly elected to and now hold the following offices in the Corporation:

Jonathan Culley:	Chair of the Board
Dana Totman:	President and Chief Executive Officer
Tim Agnew:	Treasurer
Kimberly Twitchell:	Secretary

Dated: January 19, 2022.

[redacted]

Kimberly Twitchell, Secretary
Avesta Housing Development Corporation

EXHIBIT A

Timothy Agnew
Peter Bass
Tony Cipollone
Jonathan Culley
Janice de Lima
Jim Elkins
Dr. Renee Fay-LeBlanc
Katherine Griffin
Chomba Kaluba
Raissa Kaze
Lori Parham
Andrea Patstone
Peter Pitegoff
Nathan Poore
Jeffrey Shaw
Amy Smith
Doug Stockbridge
Kimberly Twitchell

JAN 27 2022

January 24, 2022

Nate Howes
Development Officer
Avesta Housing Development Corporation
307 Cumberland Ave
Portland, ME 04101

Dear Nate:

[redacted] as owners of the Gray Plaza Property (more particularly described in Book 28459, Page 343 of the Cumberland County Registry of Deeds) plan to convey to Avesta Housing Development Corporation the wooded buffer and utility easements as generally depicted on Avesta's Subdivision Plan (dated January 21, 2022) for the Meadowview senor housing development on 16 Hancock Street.

It is our understanding that the utility easement is intended for underground power and communications utilities from existing lines at the Gray Plaza to service the proposed 27-unit apartment building. The wooded buffer easements are intended to provide visual buffering and stormwater treatment; and that tree removal/clearing will not be permitted in the buffer areas. Both the wooded buffering easements and the utility easement will be granted in perpetuity.

The easements are generally depicted on the above referenced plan and are subject to specific meets and bounds.

Sincerely: [redacted]

Printed: [illegible]
Title: Director Operations

GRAY SENIOR HOUSING, INC.

SECRETARY'S CERTIFICATE

I, Kimberly Twitchell, hereby certify that I am the duly elected and acting Secretary of Gray Senior Housing, Inc., a Maine corporation (the "Corporation").

I further certify that attached hereto as Exhibit A is a true and correct list of all board members of the Corporation currently serving as of the date of this Certificate.

I further certify that the following individuals were duly elected to and now hold the following offices in the Corporation:

Jonathan Culley:	Chair of the Board
Dana Totman:	President and Chief Executive Officer
Tim Agnew:	Treasurer
Kimberly Twitchell:	Secretary

Dated: January 19, 2022.

[redacted]

Kimberly Twitchell, Secretary
Gray Senior Housing, Inc.

EXHIBIT A

Timothy Agnew
Peter Bass
Tony Cipollone
Jonathan Culley
Janice de Lima
Jim Elkins
Dr. Renee Fay-LeBlanc
Katherine Griffin
Chomba Kaluba
Raissa Kaze
Lori Parham
Andrea Patstone
Peter Pitegoff
Nathan Poore
Jeffrey Shaw
Amy Smith
Doug Stockbridge
Kimberly Twitchell

APPENDIX B

Gray Water District Letter

Meadowview II
Site Plan and Final Major Subdivision Review Submission
16 Hancock Street
Gray, Maine

Gray Water District

P.O. BOX 196 80 SHAKER RD. GRAY, ME 04039-0196 (207) 657-3500

January 26, 2022

Doug Webster
Town of Gray
24 Main St
Gray, ME 04039

Re: Letter of Ability to Serve
Meadowview II
Hancock St.
Gray, ME 04039

Dear: Doug

Based on the approximate usage of 3420 gallons of water per day (GPD) reported to us by John Mahoney, P.E. on January 24, 2021 for the proposed 27-unit development it is my opinion that the Gray Water District does have the ability to serve the project for domestic service. A fire flow test was conducted on November 10, 2020 that showed available water flow at residual hydrant to be 1549 gallons per minute (GPM) at 20 PSI.

Sincerely,

[redacted]

Bill Gardner
GWD Superintendent

APPENDIX C

Soils Report

Meadowview II
Site Plan and Final Major Subdivision Review Submission
16 Hancock Street
Gray, Maine

Albert Frick Associates, Inc
Environmental Consultants
731 Foss Road Limerick, ME 04048
(207) 839-5563 FAX (207) 839-5564
www.albertfrick.com info@albertfrick.com

January 26, 2022

John Mahoney, P.E.
Project Manager / Design Engineer
Ransom Consulting, Inc
400 Commercial St. Suite 404
Portland, Maine 04101

Re: Preliminary Soils Testing- Avesta Gray Meadowview II, 16 Hancock Road

Dear John:

I performed preliminary soil testing at the above-referenced property on March 1, 2021. The purpose of the investigation was to determine the suitability of the property for on-site subsurface wastewater disposal. Enclosed is Ransom Consulting's Utility Plan, which illustrates the location of the test pits excavated. Also attached is the Soil Narrative Report that has soil profile descriptions.

The soil is suitable in the area of TP-6 & TP-7, as defined by the State of Maine Subsurface Wastewater Disposal Rules. The soils were observed to be "5 - D" which requires a medium size rating for design purposes. The tested area is sufficient to support (27) 1-bedroom units with the use of advanced wastewater treatment.

A complete engineered subsurface wastewater disposal system design (HHE-200 form) is needed for a permit to install the system once the overall site development is conceptualized.

Please contact me if you have any questions or additional matters for discussion.

Respectfully,

[redacted]

Brady A. Frick, LSE

Enc: Soil Narrative Report/Utility Plan

Albert Frick Associates, Inc
Environmental Consultants
731 Foss Road Limerick, ME 04048
(207) 839-5563 FAX (207) 839-5564
www.albertfrick.com info@albertfrick.com

AVESTA HOUSING SOIL NARRATIVE REPORT

LOCATION: 16 Hancock Street, Gray

DATE: Soil profiles observed March 1st, 2021.

BASE MAP: Contour map 1 foot intervals, scaled 1"=60', provided by Ransom Consulting Inc.

GROUND CONTROL: Test pits located by GeoXT sub meter GPS unit .

THE SOIL MAPPING CONFORMS WITH HIGH-INTENSITY CLASS "A" SURVEY STANDARDS AND THE TOWN OF GRAY'S SOIL MAPPING SUBDIVSION STANDARDS PER SECTION 401.13.18.C.

Class A - Soil Survey

1. Mapping units of 1/8 acre or greater.
2. Scale of 1" = 100' or larger.
3. Up to 25% inclusions in mapping units of which no more than 15% may be dissimilar soils.
4. Ground control - base line and test pits located by land surveyor.
5. Base map with 2' contour lines.

Subdivsion Standards per Section C.3.B - Soil Survey

Three (3) acre maximum inclusion size for soils of the following drainage classifications: Excessively Drained, Somewhat Excessively Drained, Well Drained and Moderately Well Drained.
(ii) One-half (1/2) acre maximum inclusion size for soils of the following drainage classifications: Somewhat Poorly Drained, Poorly Drained, and Very Poorly Drained.

Subdivsion Standards per Section C.3.C - Soil Survey

(i) Requisite portions of the Natural Resources Conservation Service (NRCS) published soil survey with field verification of soil type boundaries for the following drainage classifications: Excessively Drained, Somewhat Excessively Drained, Well Drained, and Moderately Well Drained. The submitted soils documentation from the CSS must be adjusted to reflect the information obtained from field verification.
(ii) Two (2) acre maximum inclusion size for Poorly Drained and Very Poorly Drained soils which may be combined.
(iii) Two (2) acre maximum inclusion size for Somewhat Poorly Drained soils.

This was prepared for a commercial housing development on private septic and public water.

The accompanying soil profile descriptions, soil map and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists.

[redacted] _____ C.S.S. #66, S.E. ___4_/__16_/__2021__

Albert Frick Date



BRAYTON
(Aeric Haplaquepts)

SETTING

Parent Material: Compact loamy glacial till.

Landform: Depressions and toeslopes of glaciated uplands.

Position in Landscape: Lowest positions on landform.

Slope Gradient Ranges: **(A)** 0-3% **(B)** 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Poorly drained, with a perched water table 0 to 1.0 feet beneath the soil surface from November through May or during periods of excessive precipitation.

Typical Profile Description:

Surface layer:	Very dark grayish brown sandy loam, 0-5"
Subsurface layer:	Grayish brown sandy loam, 5-15"
Subsoil layer:	Olive gray fine sandy loam, 15-24"
Substratum:	Olive sandy loam, 24-65"

Hydrologic Group: Group D

Surface Run Off: Moderate to moderately rapid.

Permeability: Moderate in solum, moderately slow or slow in dense substratum.

Depth to Bedrock: Deep, greater than 40 inches.

Hazard to Flooding: None

Erosion Factors: K: .24 - .32

INCLUSIONS
(Within Mapping Unit)

Similar: Colonel, Westbury,

Dissimilar: Naskeag, Peacham

USE AND MANAGEMENT

Soil limitations for Proposed Use: Soil limiting factor is high groundwater table. Brayton is hydric (wetland) soil. Areas within the Brayton soil series mapping unit may be jurisdictional wetland, if hydrology and wetland vegetation co-exist, and subjected to wetland impact regulations. Roadway and associated development will need to avoid these areas which are designated wetlands, or properly addressed with the wetland impact requirements.

CROGHAN
(Aquic Haplorthods)

SETTING

Parent Material: Derived from outwash or deltaic sand.

Landform: Occupy outwash terraces and sand plains.

Position in Landscape: Usually are found in intermediate or upper positions in the landscape.

Slope Gradient Ranges: **(B)** 3-8% **(C)** 8-20%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Moderately well-drained, with an apparent water table 1.5 to 2.0 feet below the soil surface from November through May. The water table fluctuates from approximately 1.5 feet during prolonged wet periods to depths greater than 4 feet in dry seasons.

Typical Profile Description:

Surface layer:	Dark brown sand, 0-7"
Subsurface layer:	Strong brown/yellowish brown, brown & pale brown sand with mottles below 13", 7-52"
Substratum:	Grayish brown loose sand, 52-60"

Hydrologic Group: Group B

Surface Run Off: Slow to medium

Permeability: Rapid to very rapid in the lower horizons.

Depth to Bedrock: Deep, greater than 40".

Hazard to Flooding: None

INCLUSIONS
(Within Mapping Unit)

Similar: Adams

Dissimilar: Nicholville, Naumburg, Lyman,

USE AND MANAGEMENT

.**Stormwater Design:** The Croghan soil is moderately well drained. The groundwater table is typically greater than 15 inches, but less than 40 inches in the spring and/or periods of heavy precipitation.The expected soil permeability is 6 to 20 inches/hr in the top 0-12 inches, and 20 inches/hr below 12 inch.

MADE LAND

SETTING

Parent Material: Variable

Landform: Variable

Position in Landscape: Variable

Slope Gradient Ranges: **(A)** 0-3% **(B)** 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: None assigned

Typical Profile Description:

Surface layer:) Typically this map unit
Subsurface layer:) consists of areas
Subsoil layer:) excavated and reworked
Substratum:) by man, then smoothed.

Hydrologic Group: None assigned

Surface Run Off: Variable

Permeability: Variable

Depth to Bedrock: Variable

Hazard to Flooding: None

INCLUSIONS
(Within Mapping Unit)

Similar: Filled Land, Croghan

Dissimilar: Small 'made' depressions that contain standing water or have other drainage implications. These may be caused by compaction by vehicular traffic, which is not synonymous with seasonal water tables.

USE AND MANAGEMENT

This map unit consists of areas reworked by man, so that the soils are no longer taxonomically classifiable. Limiting factor for development is soil drainage, though somewhat difficult to determine in these map units. This map unit usually has sandy soil material over the underlying finer textured original soils (silty and silty clay).

USE AND MANAGMENT

For stormwater management: The limiting factor for building site development is wetness due to the presence of a groundwater table. Naumburg (poorly drained) may be classified as wetlands, based on the combined consideration of hydric conditions hydrology, and vegetation. Expected permeabilities are expected to be 2-6 inches per hour in the upper 6", and 6-20 inches per hour at depths of 6"-60".

NAUMBURG
(Aeric Haplaquods)

SETTING

Parent Material: Derived from outwash, stratified drift and deltaic sediments.

Landform: Usually occupies low sand plains and terraces.

Position in Landscape: Naumburg soil is found in the lower positions of landscape.

Slope Gradient Ranges: **(A)** 0-3% **(B)** 3-8% **(C)** 8-20%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Somewhat poorly to poorly drained, with an apparent water table 0 to 1.5 feet below the soil surface from November through May. The water table fluctuates from 0 feet during prolonged wet periods to depths greater than 1.5" in dry seasons.

Typical Profile Description:

Surface layer:	Black organic, 6" thick
Subsurface layer:	Reddish gray loamy sand, 0-6"
Subsoil layer:	Mottled dark reddish brown, dark brown, and yellowish brown sand, fine sand or loamy sand, 6-30"
Substratum:	Light brownish gray sand, 30-60"

Hydrologic Group: Group D

Surface Run Off: Very slow

Permeability: Rapid

Depth to Bedrock: Deep, greater than 40".

INCLUSIONS
(Within Mapping Unit)

Similar: Au Gres, Finch (with cementation), Enosburg (Swanton), Roundabout

Dissimilar: Searsport (in microdepressions)

USE AND MANAGEMENT

Development with subsurface wastewater disposal: The limiting factor for building site development is wetness due to the presence of a groundwater table. Proper foundation drainage or site modification is recommended. Portions of this map may be suitable for subsurface wastewater disposal, where the depth to limiting factor is greater than 12" from the existing soil surface outside shoreland zone areas. Naumburg (poorly drained) may be classified as wetlands, based on the combined consideration of hydric conditions hydrology, and vegetation.

NICHOLVILLE (S.W.P.)

SETTING

Parent Material: Lacustrine material having a high content of silt and fine sand.

Landform: Commonly found on lake plains and upland till plains that have a mantle of water-deposited silt or very fine sand.

Position in Landscape: Intermediate portion of landscape feature.

Slope Gradient Ranges: **(B)** 3-8% **(C)** 8-20% **(D)** 20%+

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Nicholville (S.W.P.) is somewhat poorly drained, with a perched water table 0.5 to 1.5 feet below the soil surface from November through May and during periods of heavy precipitation.

Typical Profile Description:

Surface layer:	Very dark grayish brown silt loam, 0-10"
Subsurface layer:	Dark yellowish brown silt loam, 10-13"
Subsoil layer:	Yellowish brown and grayish brown very fine sandy loam, 13-18"
Substratum:	Grayish brown loamy very fine sand, 18-70"

Hydrologic Group: Group D

Surface Run Off: Medium

Permeability: Moderate throughout profiles.

Depth to Bedrock: Very deep, greater than 60".

Hazard to Flooding: None

INCLUSIONS
(Within Mapping Unit)

Similar: Nicholville, Naumburg (S.W.P.), Lamoine

Dissimilar: Roundabout, Scantic,

USE AND MANAGEMENT

Development with stormwater: Nicholville (SWP) is a somewhat poorly drained soil exhibiting a seasonal high groundwater table 1.0 to 1.5 feet beneath the soil surface in the spring and during periods of heavy precipitation. Nicholville (SWP) soils exhibit permeabilities of 0.6-2.0 inches/hr throughout the profile.

NICHOLVILLE
(Aquic Haplorthods)

SETTING

Parent Material: Lacustrine material having a high content of silt and fine sand.

Landform: Commonly found on lake plains and upland till plains that have a mantle of water-deposited silt or very fine sand.

Position in Landscape: Intermediate and upper portions of landscape feature.

Slope Gradient Ranges: **(B)** 3-8% **(C)** 8-20% **(D)** 20+%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Moderately well drained, with a perched water table 1.5 to 2.0 feet below the soil surface from November through May.

Typical Profile Description:

Surface layer:	Very dark grayish brown silt loam, 0-10"
Subsurface layer:	Dark yellowish brown silt loam, 10-13"
Subsoil layer:	Yellowish brown and grayish brown very fine sandy loam, 13-18"
Substratum:	Grayish brown loamy very fine sand, 18-70"

Hydrologic Group: Group C

Surface Run Off: Medium

Permeability: Moderate throughout the profile.

Depth to Bedrock: Very deep, greater than 60".

Hazard to Flooding: None

INCLUSIONS
(Within Mapping Unit)

Similar: Croghan, Elmwood

Dissimilar: Nicholville (S.W.P.), Buxton, Lamoine, Made Land

USE AND MANAGEMENT

Stormwater design: Nicholville is a moderately well drained soil, exhibiting a seasonal high groundwater table 1.5-2.0 feet beneath the soil surface in the spring and during periods of high precipitation. Nicholville soils exhibit permeabilities of 0.6-2.0 inches/hour, through the profile.

SKERRY
(Aquic Haplorthods)

SETTING

Parent Material: Loamy glacial till underlain by sandy textured denser till.

Landform: Drumlins and glaciated uplands.

Position in Landscape: Usually occupies upper components of landform.

Slope Gradient Ranges: **(B)** 3-8% **(C)** 8-20%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Moderately well-drained, with a perched water table 1.5 to 3.5 feet below the soil surface from November through May.

Typical Profile Description:

Surface layer: Light gray fine sandy loam, 0-4"
Subsurface layer: Dark reddish brown fine sandy loam, 4-20"
Subsoil layer: Yellowish brown fine sandy loam, 20-25"
Substratum: Mixed brown and light olive brown fine sandy loam and sand, 25-65"

Hydrologic Group: Group C

Surface Run Off: Moderate

Permeability: Moderate in solum and slow or moderately slow in the compact substratum.

Depth to Bedrock: Deep, greater than 40".

Hazard to Flooding: None

INCLUSIONS
(Within Mapping Unit)

Similar: Dixfield, Herman

Dissimilar: Tunbridge, Lyman (less than 40" to bedrock), Colonel, Westbury

USE AND MANAGEMENT

Stormwater design: Skerry soils are moderately well drained. Soil permeabilities are expected to be 0.6 – 2.0 inches/hour in the upper portions of soil profile, and 0.06 – 0.6 inches/hour in the compact substratum, generally 25" – 65" beneath the soil surface.

Town, City, Plantation	Street, Road Subdivision	Owner's Name
GRAY	16 HANCOCK STREET	AVESTA HOUSING

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 1 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Depth	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND	FRIABLE	BROWN	
10–20	SAND	LOOSE	LIGHT YELLOWISH BROWN	COMMON, DISTINCT
20–30		SOMEWHAT FIRM (PARTIALLY CEMENTED)		
30–40				
40–50				

Soil Classification	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
Profile / Condition	____ %	15"	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
CROGHAN (VARIANT)	MODERATELY WELL DRAINED	A

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 2 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Depth	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND	FRIABLE	BROWN	
10–20	MEDIUM SAND	LOOSE	LIGHT YELLOWISH BROWN	COMMON, DSTINCT
20–30	FINE SAND	SOMEWHAT FIRM (PARTIALLY CEMENTED)	OLIVE BROWN	
30–40				
40–50				

Soil Classification	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
Profile / Condition	____ %	20"	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
CROGHAN (VARIANT)	MODERATELY WELL DRAINED	A

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 3 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Depth	Texture	Consistency	Color	Mottling
0–10	VERY FINE SANDY LOAM (FILL)	FRIABLE	BROWN	
10–20	VERY FINE SANDY LOAM			
20–30	SILTY CLAY LOAM		YELLOWISH BROWN / OLIVE BROWN	FEW, DISTINCT
30–40		FIRM	GRAY	
40–50		LIMIT OF EXCAVATION		

Soil Classification	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
Profile / Condition	____ %	32"	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
MADE LAND	MODERATELY WELL DRAINED	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 4 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Depth	Texture	Consistency	Color	Mottling
0–10	VERY FINE SANDY LOAM		DARK BROWN	
10–20		FRIABLE	PALE OLIVE GRAY	COMMON, DISTINCT/ FREE WATER
20–30	VERY FINE SANDY LOAM & SILT	FIRM	GRAY	
30–40	SILTY CLAY			
40–50		LIMIT OF EXCAVATION		

Soil Classification	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
Profile / Condition	____ %	12"	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
NICHOLVILLE (VARIANT)	SOMEWHAT POORLY DRAINED	D

[redacted]

66 SE/CSS #

4/16/21 Date

ALBERT FRICK ASSOCIATES – 380-B MAIN STREET GORHAM, MAINE 04038 – (207) 839-5563

Town, City, Plantation	Street, Road Subdivision	Owner's Name
GRAY	16 HANCOCK STREET	AVESTA HOUSING

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 5 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	VERY FINE SANDY LOAM	FRIABLE	DARK BROWN	
10–20	FINE SANDY		YELLOWISH BROWN	FEW, DISTINCT
20–30	VERY FINE SANDY LOAM		OLIVE BROWN	
30–40	SILTY CLAY	FIRM	GRAY	
40–50	LIMIT OF EXCAVATION			

Soil Classification (Profile / Condition)	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
	____ %	15 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING → Soil Series Name:	Drainage Class:	Hydrologic Group:
NICHOLVILLE (VARIANT)	MODERATELY WELL DRAINED	C

Observation Hole TP 6 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	FINE SANDY LOAM		DARK BROWN	
10–20	FINE SAND	FRIABLE	LIGHT YELLOWISH BROWN	FEW, FAINT
20–30			OLIVE BROWN	△△△ FREE WATER
30–40		SOMEWHAT FIRM		
40–50				

Soil Classification (Profile / Condition)	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
	____ %	12 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
NAUMBURG	SOMEWHAT POORLY DRAINED	D

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 7 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND		BROWN	FEW, DISTINCT
10–20	FINE SAND	FRIABLE	STRONG BROWN	
20–30			LIGHT YELLOWISH BROWN	△△△ FREE WATER
30–40	MEDIUM SAND	SOMEWHAT FIRM	OLIVE BROWN	
40–50	LIMIT OF EXCAVATION			

Soil Classification (Profile / Condition)	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
	____ %	10 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING → Soil Series Name:	Drainage Class:	Hydrologic Group:
NAUMBURG	SOMEWHAT POORLY DRAINED	D

Observation Hole TP 8 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND		DARK BROWN	
10–20	SAND	FRIABLE	YELLOWISH BROWN / LIGHT YELLOWISH BROWN	COMMON, DISTINCT
20–30			OLIVE BROWN	△△△ FREE WATER
30–40				
40–50				

Soil Classification (Profile / Condition)	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
	____ %	8 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
NAUMBURG	POORLY DRAINED	D

[redacted] Site

66 SE/CSS #

4/16/21 Date

ALBERT FRICK ASSOCIATES – 380-B MAIN STREET GORHAM, MAINE 04038 – (207) 839-5563

Town, City, Plantation	Street, Road Subdivision	Owner's Name
GRAY	16 HANCOCK STREET	AVESTA HOUSING

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 9 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	MIXED LOAMY SAND (FILL)			
10–20		FRIABLE	OLIVE BROWN	
20–30	LOAMY SAND			COMMON, DISTINCT △△△
30–40			DARK BROWN	FREE WATER
40–50	FINE SAND	FIRM	PALE BROWN	

FOR WASTEWATER DISPOSAL →

Soil Classification	Slope	Limiting Factor	
Profile _____ Condition _____	____ %	30 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
MADE LAND	MODERATELY WELL DRAINED	C

Observation Hole TP 10 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM		DARK BROWN	
10–20	LOAMY SAND	FRIABLE	YELLOWISH BROWN	
20–30				FEW, FAINT
30–40	FINE SAND	SOMEWHAT FIRM	PALE BROWN	
40–50				

Soil Classification	Slope	Limiting Factor	
Profile _____ Condition _____	____ %	24 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
CROGHAN	MODERATELY WELL DRAINED	A

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 11 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND	FRIABLE	DARK BROWN	COMMON, DISTINCT △△△
10–20	SAND		OLIVE GRAY	FREE WATER
20–30				
30–40				
40–50				

FOR WASTEWATER DISPOSAL →

Soil Classification	Slope	Limiting Factor	
Profile _____ Condition _____	____ %	7 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
NAUMBURG	POORLY DRAINED	D

Observation Hole TP 12 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND		DARK BROWN	
10–20	FINE SAND	FRIABLE	YELLOWISH BROWN	
20–30		REFUSAL		
30–40				
40–50				

Soil Classification	Slope	Limiting Factor	
Profile _____ Condition _____	____ %	26"	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
SKERRY (VARIANT)	WELL DRAINED	C

[redacted]

Site E

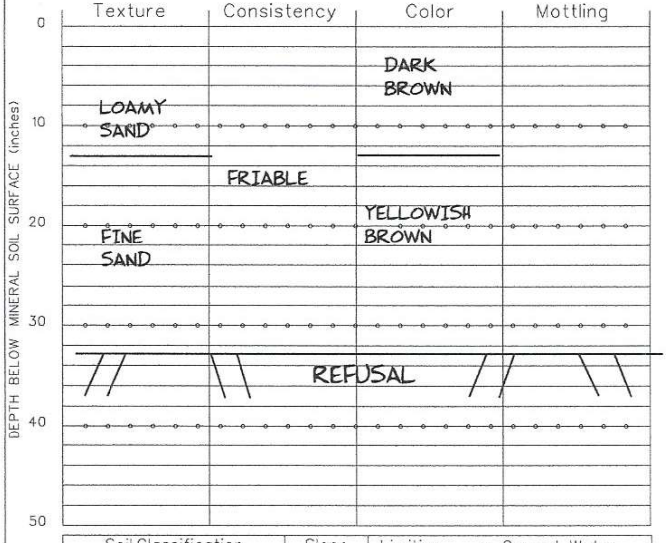
66
SE/CSS #

4/16/21
Date

Town, City, Plantation	Street, Road Subdivision	Owner's Name
GRAY	16 HANCOCK STREET	AVESTA HOUSING

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 13 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

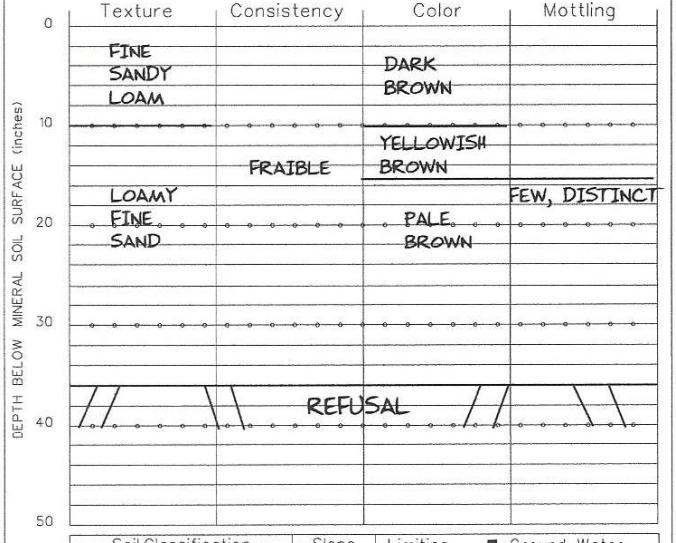


Soil Classification	Slope	Limiting Factor	
Profile / Condition	____ %	32 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING → Soil Series Name:	Drainage Class:	Hydrologic Group:
SKERRY (VARIANT)	WELL DRAINED	C

Observation Hole TP 14 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

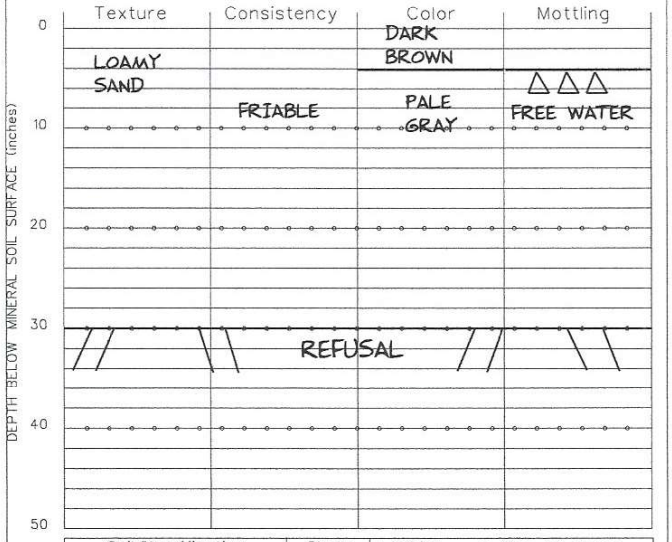


Soil Classification	Slope	Limiting Factor	
Profile / Condition	____ %	15 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
SKERRY (VARIANT)	MODERATLY WELL DRAINED	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 15 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

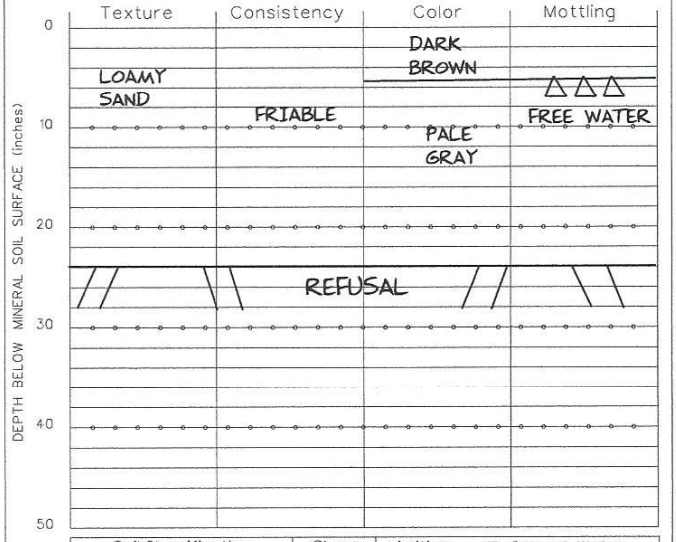


Soil Classification	Slope	Limiting Factor	
Profile / Condition	____ %	4 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING → Soil Series Name:	Drainage Class:	Hydrologic Group:
BRAYTON (VARIANT)	POORLY DRAINED	D

Observation Hole TP 16 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
Profile / Condition	____ %	5 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

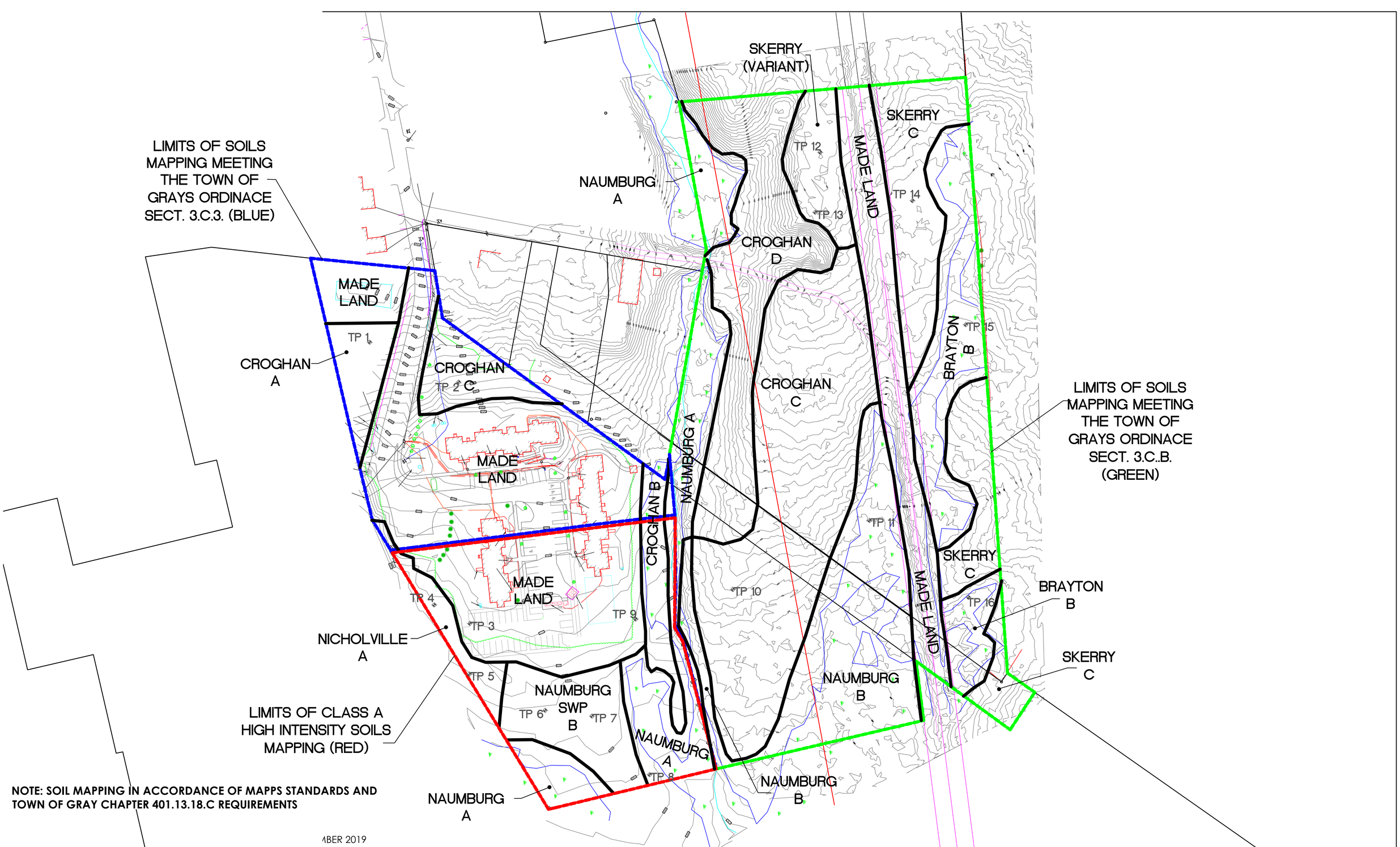
Soil Series Name:	Drainage Class:	Hydrologic Group:
BRAYTON (VARIANT)	POORLY DRAINED	D

[redacted]
Site Evaluator / Soil Scientist Signature

66
SE/CSS #

4/16/21
Date

ALBERT FRICK ASSOCIATES – 380-B MAIN STREET GORHAM, MAINE 04038 – (207) 839-5563



NOTE: SOIL MAPPING IN ACCORDANCE OF MAPPS STANDARDS AND TOWN OF GRAY CHAPTER 401.13.18.C REQUIREMENTS

ABER 2019

SOILS MAP LEGEND:

- SOIL TEST PIT (LOCATED BY SUBMETER GPS)
- SOIL BOUNDARY LINE
- LIMITS OF CLASS A HIGH INTENSITY SOILS MAPPING
- LIMITS OF SOILS MAPPING PER TOWN STANDARDS
- WETLAND AREA (BY OTHERS)
- STREAM / POND

SLOPE DESIGNATION

A	0 - 3%
B	3 - 8%
C	8 - 20%
D	20%+

NOTE: SEE ACCOMPANYING SOIL NARRATIVE REPORT, DATED APRIL, 2021

THE ACCOMPANYING SOILS SURVEY WAS DONE IN ACCORDANCE WITH THE STANDARDS ADOPTED BY THE MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS, FEBRUARY 1995, AS AMENDED.

STATE OF MAINE [redacted] SOIL SCIENTIST

DATE:	REVISIONS:

SOIL MAP
HIGH INTENSITY
PREPARED FOR
AVESTA HOUSING
16 HANCOCK STREET
GRAY, MAINE

Albert Frick Associates, Inc.
Environmental Consultants
Gorham, Maine

Drawn By: B.J. | Checked By: A.F.
Date: 4/7/21 | Scale: 1" = 60'

APPENDIX D

Financial Capacity

Meadowview II
Site Plan and Final Major Subdivision Review Submission
16 Hancock Street
Gray, Maine

Bangor Savings Bank

January 13, 2022

Doug Webster
Town of Gray
24 Main Street
Gray, ME 04039

RE: Meadowview II

Dear Mr. Webster:

On behalf of Bangor Savings Bank I am pleased to provide this letter in support of Avesta Housing for the development of a 27-unit, affordable housing project to be located in Gray, Maine. Bangor Savings Bank has worked with Avesta Housing on multiple projects of a similar nature. Based on our prior experience working with the organization, we believe that the applicant has the ability to finance the projected project costs. In addition, they possess the management skill and development expertise to successfully complete the proposed project on time and on budget.

While this letter of support is not a commitment to lend, Bangor Savings Bank would welcome the opportunity to be a resource for project financing. Please feel free to call me at 541-2707 with any questions.

Sincerely,

[redacted]

Shawn McKenna
Vice President
Commercial Banking

APPENDIX E

Hydrogeologic Assessment

Meadowview II
Site Plan and Final Major Subdivision Review Submission
16 Hancock Street
Gray, Maine

HYDROGEOLOGIC ASSESSMENT
AVESTA GRAY MEADOWVIEW
16 HANCOCK STREET
GRAY, MAINE

Prepared for:

AVESTA Housing
307 Cumberland Avenue
Portland, Maine 04101

Prepared by:

400 Commercial Street
Portland, Maine 04101
(207) 772-2891

Project 191.06051
January 27, 2022

[redacted]

Thomas B. Neilson, L.G.
Primary Author / Project Geologist

John I. Mahoney, P.E.
Project Manager

Nicholas O. Sabatine, P.G.
Principal/Vice President

Aaron Martin, L.G.
Peer Review

EXECUTIVE SUMMARY

This Hydrogeologic Assessment has been prepared to support the Site Plan application for a proposed residential development at 19 Hancock Street in the Town of Gray, Cumberland County, Maine on behalf of AVESTA Housing (AVESTA). The proposed development includes construction of 27 apartment units on a parcel with 20 existing senior housing units. The development will include a construction of a septic system to handle wastewater from the new development with a design flow of 3,240 gallons per day. This assessment is intended to support AVESTA's Site Plan and Subdivision application and generally addresses the requirements of the Town of Gray Subdivision Ordinance Chapter 401 §401.13.9.

The Site is located south of the Gray ice-contact marine delta within an area of marine nearshore deposits, which are generally sandy with lesser components of silt, mud, and gravel, as identified by the Maine Geological Survey (MGS). The Site and surrounding properties are served by municipal water supplied by the Gray Water District, and neither the overburden nor the bedrock aquifers are currently utilized for potable water within the vicinity of the Site.

Ransom completed an analytical fate and transport model to assess the potential worst-case scenario impact of septic discharge on nitrate-nitrogen concentrations in groundwater down gradient from the proposed septic system. The downgradient boundary used in the analysis was the closest property line, approximately 43 feet from the corner of the proposed septic system. Other parameters for the model were based on field data or estimated using common geologic principles to be conservative. The model results indicate that nitrate-nitrogen concentrations at the downgradient property boundary are not likely to exceed the Maine Department of Environmental Protection's (MEDEP's) Maximum Concentration Limit (MCL) of 10 milligrams per liter.

Groundwater mounding beneath the proposed septic system was evaluated using an analytical model to estimate the height of the groundwater mound after 10 years of infiltration. The maximum height of the mound at the center of the proposed septic system would be approximately 1.18 feet above the water table, which would be approximately 10 inches below the septic system discharge chambers. With proper construction, the risk of effluent breakout downslope of the septic system is considered to be low.

Based on the information available for this assessment, the proposed development is not expected to have an unreasonable impact on groundwater resources at the Site or nearby.

This Executive Summary does not contain all the relevant information relating to this assessment. The conclusions and recommendations included herein should only be considered after reading the entirety of this document.

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FIGURES

Figure 1: Nitrate-Nitrogen Model Results

FIGURES

Appendix A: Mounding Analysis Output

1.0 INTRODUCTION

This hydrogeologic assessment has been completed by Ransom Consulting, LLC (Ransom) on behalf of AVESTA Housing (AVESTA) to support their proposed construction of a new residential apartment building and associated infrastructure at 19 Hancock Street in the Town of Gray, Cumberland County, Maine (the "Site" or "proposed development"). The Site encompasses 14.9 acres, much of which will be preserved as woodlands. The proposed development includes building a new building with 27 residential one-bedroom apartment units at an existing apartment complex with 20 one-bedroom apartment units. owned by the Applicants. The development will include construction of a septic leach field to manage septic waste from the new building with a design flow of 3,240 gallons per day (gpd) located to the south of the proposed building. The existing buildings are served by an existing septic system located approximately 600 feet north of the proposed development.

This assessment is intended to address the general requirements of the Town of Gray Chapter 401 Subdivision Ordinance and provide worst-case scenario modeling results, conclusion, and recommendations related to fate and transport of nitrate-nitrogen (NO_3-N) effluent from the proposed septic system and groundwater mounding related to the septic system.

This report is based upon field data, publicly available geologic information, and reasonable estimates of geologic properties using common methods. It makes every effort to be conservative in the modeling approach while accurately representing the real environment to the extent possible.

This report is intended to accompany the Site Plan application package prepared by Ransom. The Site Plan drawings provide visual representations of many of the topics discussed in this report and should be referenced as needed when reviewing this report.

2.0 BACKGROUND

2.1 Site Topography and Drainage

The area of the proposed development is relatively low relief, with an un-named stream located east of the development area and wetlands or low-lying areas located to the south and west. North of the development area is a moderately steep slope that grades up toward to the top of the Gray marine delta, as identified by the Maine Geological Survey (MGS).

Drainage conditions at the Site are in the attached Civil Plan Set prepared by Ransom. The total impervious area at the Site is 58,292 square feet, which is equivalent to approximately 9% of the total Site area. Much of the stormwater generated from the impervious areas of the Site will be handled by the proposed stormwater management system and discharged via level-spreader to the ground surface adjacent to the Site, as shown on Sheet C1.6. The remainder of stormwater will be directed to the ground surface adjacent to the impervious areas. No stormwater will be directed to surface water features or storm drains that convey stormwater away from the Site and prevent infiltration. Based on the proportion of impervious area (or based on the proposed stormwater management plan), groundwater recharge at the Site is not anticipated to be substantially altered from the present condition.

2.2 Site Geology

2.2.1 Overburden Geology

The site is located south of the Gray ice-contact marine delta unit within the marine nearshore deposits immediately flanking the southern terminus of the delta (MGS; Weddle, 1997). The marine nearshore deposits are described as gravel, sand, and mud deposited by wave activity in nearshore or shallow marine environments. The eastern portion of the Site, located east of the un-named brook running through the Site, is mapped as glacial till. To the west the marine nearshore deposits transition into the Presumpscot Formation, typically a clayey silt unit deposited in a deeper marine setting, and to the south the Holocene wetland deposits of the Gray Meadow dominate.

On-Site test pits completed by Albert Frick Associates, Inc (Frick Associates) indicate that Site conditions generally align with the mapped surficial geology. Within the area of proposed development soils were typical of glacial outwash and nearshore marine environments, with varying amount of silt, fine sand, and sand. The eastern portion of the Site parcel, outside of the proposed development area, surficial geology included lesser amount of glacial till and delta/marine nearshore deposits.

Thickness of overburden material was generally greater than the depth of exploration, although bedrock was encountered in several test pits located on the eastern portion of the property, outside of the area of development. Well records from the MGS Water Well Database located nearby (within 2,000 feet) and within somewhat similar geologic conditions indicate thickness of overburden is 30 feet or greater.

Groundwater was observed is several test pits. Depth to the seasonal high-water table ranged from approximately 32 inches below grade to 7 inches below grade, with shallower depths to water in the southern portion of the Site adjacent to and within the delineated wetlands.

The Soil Narrative Report prepared by Frick Associates and accompanying soil map have been included in this Site Plan application package.

2.2.2 Bedrock Geology

The bedrock unit underlying the Site is mapped as be a muscovite-biotite granite with localized areas of pegmatite. No bedrock outcrops have been observed on Site and actual bedrock lithology has not been confirmed with field data.

2.3 Hydrogeologic Setting

Groundwater at the site was encountered in most of the test pits advanced on the property, and the seasonal high-water table was identified as being between 7 and 32 inches below grade in test pits. Groundwater flow in the overburden material at the site is expected to generally follow site topography. On a broader scale, topography suggests groundwater flow would be approximately southerly, although some groundwater may flow easterly toward the un-named stream or westerly toward low-lying wetlands. A groundwater elevation survey was not completed at the Site.

The nearest mapped water supply wells are approximately 1,200 feet away, and the existing units on the property, as well as the developments surrounding the Site, are connected to municipal water supply through the Gray Water District (GWD).

Based on available information, neither the surficial geologic unit(s) or bedrock in the vicinity of the proposed development are currently utilized as a potable water supply.

The surficial geology of the Site indicate that precipitation and stormwater likely infiltrate relatively easily in most areas of the site, as overburden materials generally consist of relatively sandy material with lesser components of fine-grained sediment.

2.4 Current Groundwater Quality

There are no known wells on the Site or neighboring properties, as the neighborhood surrounding the proposed development is served by the GWD. The nearest known wells are approximately 1,200 feet west of the proposed development and were not considered close enough to provide representative groundwater samples.

3.0 ANALYSIS OF SEPTIC WASTE DISPOSAL SYSTEM

The proposed use of the Site after development includes 27 new residential apartment units. An engineered septic system with a design capacity of 3,240 gpd is proposed to handle wastewater loads generated at from the new Site building. The proposed location, grading, and design of the proposed septic system are shown in the plan sheet C1.5 included in the Site Plan application package. Given this, Ransom has assessed potential nitrate-nitrogen (NO_3-N) loading from the proposed septic system at the Site.

The assessment presented below is a result of consideration of Site geologic characteristics and field data. It is important to recognize that hydrogeologic assessments often carry a significant degree of uncertainty, and the assessment provided herein represents Ransoms opinions about the hydrogeologic setting at the project Site given the information available at the time this assessment was conducted and standard geologic and hydrogeologic principles deemed appropriate for the Site setting.

3.1 Impacts at Existing Water Supply Wells

The Site and surrounding properties are, to the best of our understanding, served by municipal water provided by the GWD. The GWD utilizes groundwater from the sand and gravel aquifer associated with the glacio-marine delta deposits in the Libby Hill and Gray delta complexes, which are located approximately 7,000 feet north of the proposed development. The GWD source wells rely upon groundwater that has no direct hydraulic connection to the on-site groundwater. Septic discharge on Site is not expected to present risk to the GWD water supply.

According to the MGS Water Well Database, the closest existing water supply well is located approximately 1,200 feet west of the proposed development. Two additional wells are located within 2,000 feet of the proposed development (one to the west and one to the north). All three wells are listed as bedrock water supply wells and are not considered to be hydraulically connected to the overburden groundwater system at the Site. Septic discharge on Site is not expected to present risk to the mapped existing domestic water supply wells in the vicinity of the project.

Given our understanding of the existing users of the bedrock and overburden aquifers in the vicinity of the Site, the proposed septic discharge present low risk of impact to water supply wells.

3.2 Impacts at the Down Gradient Property Boundary

Per the requirements of the Town of Gray Chapter 401 Subdivision Ordinance §401.13.9, Ransom has performed an assessment of expected NO_3-N concentrations in groundwater at the downgradient property boundary from the proposed septic system.

For the purposes of this assessment, the downgradient boundary is considered to be the closest property boundary to the proposed septic system, which is 43 feet from the southwest corner of the septic system. Based on Site topography, the down-gradient boundary may be more accurately represented by the property line to the south of the proposed septic system, which is approximately 93 feet from the septic system. By using the closer boundary, the model results are made more conservative.

Ransom performed the NO_3-N assessment using standard techniques described in Domenico and Palciauskas (1982). Specifically, two conservative analytical models were employed to estimate the NO_3-

N concentration at the downgradient property boundary from the proposed septic system. Both models incorporate the following assumptions:

1. The measured concentration at the downgradient boundary is maintained constant (i.e. the flow is in steady state);

2. The aquifer is isotropic and homogeneous;

3. Groundwater flow is uniform;

4. Dilution occurs only through transverse dispersion (i.e. dispersion only occurs at right angles to the direction of flow in the horizontal and vertical directions);

5. Horizontal and vertical dispersion occurs at the same rate; and

6. The aquifer thickness is limited.

The equations used to model NO_3-N concentrations can be found as Equations 19 and 20 from Domenico and Palciauskas (1982). The MATLAB code used to compute the results can be provided upon request. Results from both models are presented below.

It is important to note that the assessment method selected only considers dilution of NO_3-N through dispersion into groundwater. Dilution through infiltration of precipitation, nutrient uptake through plants, or other factors are not included. The purpose of this assessment is not to predict the true concentration of NO3-N at the downgradient boundary, but rather to estimate the worst-case concentration so that risk can be assessed conservatively.

3.2.1 Model Inputs

The input parameters for the model were based on field data collected from the Site through test pits and estimates of the geologic properties of the overburden aquifer at the Site. Where appropriate, conservative values for input parameters were selected. When typical values without field validation were used, a specific value was generally chosen from the conservative side of the range. The input parameters, and their sources, are listed below:

Parameter	Input Value	Units	Source/Comment
Initial Concentration	40	mg/l	MEDEP Site Location of Development Permit Guidance
Hydraulic Conductivity	10^{-5}	m/s	Freeze and Cherry (1979) pg. 29. Value given for silty sand.
Porosity	0.35	unitless	Freeze and Cherry (1979) pg. 37. Value given as low end for silt and middle of range for sand.
Hydraulic Gradient	0.023	unitless	Estimated from elevation change of existing grade from septic system location to property boundary; approximately 1-foot elevation loss over 43 feet distance.
Dispersion Coefficient	1^{-6}	m^2/s	Lower end of expected range. The lower the dispersion coefficient, the less dilution takes place.

Parameter	Input Value	Units	Source/Comment
Initial Plume Width	27.43 (90)	m (ft)	Design width of septic system at widest point. Note geometry of system presents a narrower width in the direction of the boundary under consideration.
Initial Plume Depth	0.33 (1.1)	m (ft)	Conservative estimate of depth of septic discharge at downgradient edge of septic field. Discharge will ultimately be above the groundwater table, even after mounding is considered.
Aquifer Thickness	10 (32.8)	m (ft)	Estimate of average thickness of the overburden aquifer based on depth to bedrock in closest wells mapped by Maine Geological Survey and mapped surficial geology.
Distance to Downgradient Boundary (River)	13.11 (43)	m (ft)	Approximate horizontal distance from the proposed septic field to the downgradient boundary (nearest property boundary).

3.2.2 Model Results

To assess the sensitivity of the two analytical models to each parameter, the model was run for a range of possible values for each of the nine input parameters while holding all other parameters constant. The results of this sensitivity analysis are shown in Figure 1. The result of the model was also plotted on the sensitivity analysis plots (shown as asterisks). The model result for the parameters listed above yielded an estimated concentration of 5.25 mg/l of NO_3-N in groundwater at the downgradient property boundary.

3.2.3 Model Conclusions

Based on the modeled results, NO_3-N concentrations in groundwater are not anticipated to exceed the Maine Site Law regulatory limit of 10 mg/l at the property boundary due to the septic effluent. Assuming background NO_3-N concentrations of 2 mg/l, the worst-case scenario NO_3-N concentrations are still below 10 mg/l. In addition, the models employed take an overly conservative approach to contaminant fate, as they assume that the only way NO_3-N concentrations are reduced with distance is through mixing with "clean" groundwater through dispersion. Other factors that are likely to decrease NO_3-N concentrations in groundwater at the Site that are not accounted for in the models include:

1. Mixing of NO_3-N with recharge from precipitation;
2. Uptake of NO_3-N from biological processes (e.g. grass and plant growth);
3. Chemical attenuation of NO_3-N; and
4. Denitrification systems employed upstream of the septic field discharge.

It is Ransom's opinion that the NO_3-N load introduced to groundwater from the proposed septic field will be adequately mitigated by natural conditions present at the Site.

4.0 SEPTIC SYSTEM MOUNDING ANALYSIS

A mounding analysis was performed to assess the degree to which septic discharge to the proposed septic leach field would raise local groundwater elevations. The purpose of this analysis is to understand if there is potential for water to "break out" (i.e., flow to the ground surface) after long-term disposal of septic waste.

4.1 Model Selection and Inputs

Ransom utilized an analytical tool and solution presented by Carleton (2010) to iteratively solve equations developed by Hantush (1967). The tool relies upon a Microsoft Excel spreadsheet and macro program to iteratively solve for the maximum groundwater height beneath an infiltration structure. The tool was envisioned to be used for transient stormwater infiltration, however, by extending the infiltration time to 10 years it is possible to use the results to approximate steady-state groundwater conditions (though the calculations of groundwater mounding at some distance from the septic field are unreliable by this method).

The following table presents the variables required for the model and provides rational for variable selection.

Parameter	Input Value	Units	Source/Comment
Recharge Rate	0.147	ft/day	The design load of the septic system is 3,240 gpd in an area of 2,944 sq. ft. This works out to a daily loading of 0.147 ft/day over the entire septic system.
Specific Yield	0.2	unitless	Estimated specific yield of sand 10% to 30% (Sterrett, 2007). Selected 20% based on soil descriptions from TP-6 and TP-7.
Horizontal Hydraulic Conductivity	28	ft/day	Used same hydraulic conductivity as NO_3-N model above.
½ of Total Width	16	ft	Design width is 32 feet.
½ of Total Length	46	ft	Design width is 92 feet.
Duration of Infiltration	3650	days	10-year duration used to approximate steady-state conditions
Initial Thickness of Saturated Zone	33	ft	Estimated thickness of saturated overburden material overlying bedrock.

4.2 Model Results

The maximum groundwater mounding beneath the center of the septic system was estimated to be 1.18 feet above the current seasonal high-water table. Based on test pits TP-6 and TP-7, the depth to the seasonal high-water table was between 10 and 12 inches below existing grade. This result indicates that the groundwater in the middle of the septic system would rise above the native soil surface and into the placed fill surrounding the septic system by approximately 4 inches (assuming 10 inches to the seasonal high-water table).

The proposed septic design includes placement of a minimum of approximately 14 inches of imported fill to the base of the septic discharge chambers, which are 13 inches tall, and covered with an additional 12

inches of material, resulting in approximately 3.25 feet of placed fill over the natural soil surface. The edges of the septic system will be graded at a 4:1 slope. The maximum height of the groundwater mound in the middle of the septic system would be approximately 10 inches below the bottom of the septic discharge chambers. The groundwater mound would diminish with distance away from the center of the septic system.

The output from the spreadsheet-based model can be seen in Appendix A of this report.

4.3 Model Conclusions and Recommendations

The proposed septic design includes sufficient fill placement beneath the septic system and in the 4:1 side-slopes to mitigate risk of groundwater rising above the grade of the septic system or breaking out along the toe of the proposed septic system during normal hydrologic conditions. The proposed fill to be used in the septic system should have higher vertical hydraulic conductivity when placed than the native soil, as estimated by sieve analysis, and care should be taken to ensure the native soil is not compacted during construction and the ground surface should be scarified prior to placement of fill material. The down-slope edge of the 4:1 side slope should be constructed of finer grained fill (or fill with a higher proportion of fines) to promote infiltration of septic discharge beneath the septic system and limit risk of septic discharge flowing laterally at the native soil-fill interface. All organic matter present at the surface of the existing grade should be removed prior to placement of fill to ensure fill is placed directly onto native mineral soil.

5.0 CONCLUSIONS

The following conclusions are based on the information and analyses presented in this report:

1. The proposed development is not expected to have an unreasonable impact on existing groundwater quantity. Specifically, infiltration of stormwater through stormwater management and limiting the total impervious area to 9% of the total Site area will not substantially reduce infiltration of stormwater at the Site.

2. There are no known uses of the overburden or bedrock aquifers as potable water supplies within the vicinity of the proposed development. The neighborhood and surrounding developments are currently served by municipal water.

3. Nitrate-nitrogen fate and transport modeling indicate that the proposed septic system effluent is unlikely to result in nitrate as nitrogen concentrations in excess of 10 mg/l at the downgradient property boundary. There are no known drinking water wells or other receptors in the vicinity of the proposed development.

4. Hydraulic modeling of the proposed septic system indicates that groundwater mounding beneath the septic system will be limited and is not likely to result in breakout down-slope of the septic system.

6.0 RECOMMENDATIONS

Ransom makes the following recommendations regarding the proposed development:

1. All organic material above the native mineral soil should be removed prior to placement of fill for the proposed septic system.

2. Care should be taken during construction not to compact the native soil in the vicinity of the proposed septic system and the native soil surface should be scarified prior to placement of fill.

3. Fill placed beneath the proposed septic system should have equal to or higher hydraulic conductivity (i.e., permeability) than the existing native soil once placed. The hydraulic conductivity of the native soil is estimated to be approximately 10^{-5} meters per second, which is equal to 28 feet per day or 14 inches per hour. Based on this, we recommend a hydraulic conductivity range of approximately 14 inches per hour to 30 inches per hour for this fill material.

4. The down-slope edge of the 4:1 slope of the proposed septic system should be constructed using finer-grained fill material with a hydraulic conductivity that is a minimum of 60% lower than the native soil when placed. The recommended range for this material is between approximately 0.5 inches per hour and 5 inches per hour. This fill material should comprise at least the lower 2 vertical feet of the slope. The purpose of this fill material is to prevent septic discharge from flowing down-gradient at the native soil-fill interface and promote infiltration into native soil beneath the septic system.

7.0 REFERENCES

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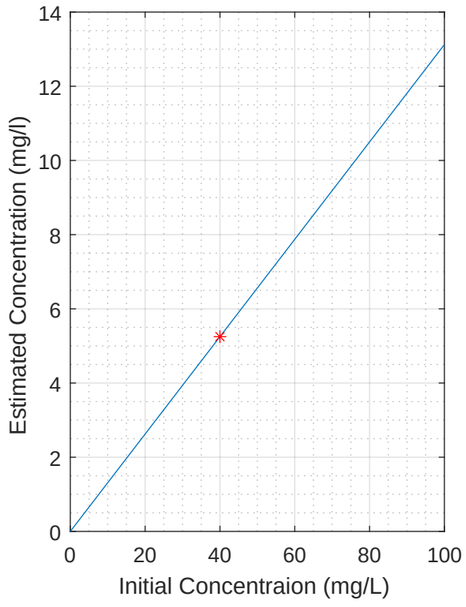
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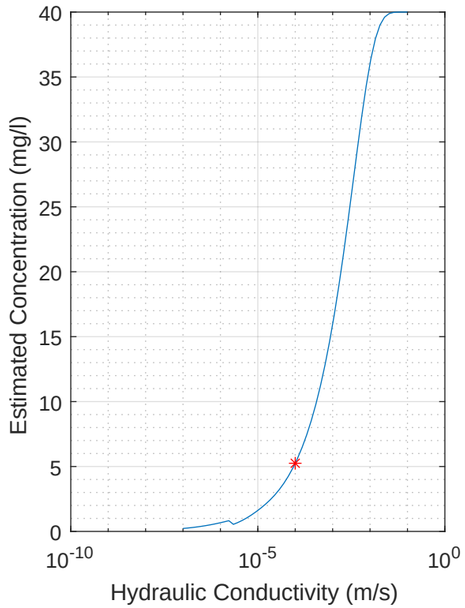
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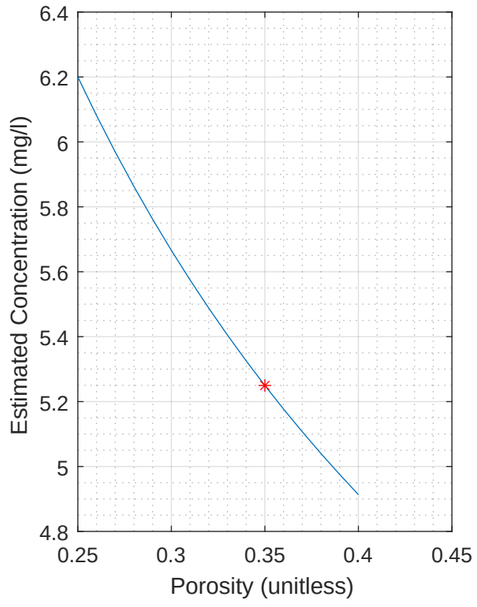
6. Sterrett, R. J. (Ed), 2007, Groundwater and Wells, 3rd ed., Johnson Screens.

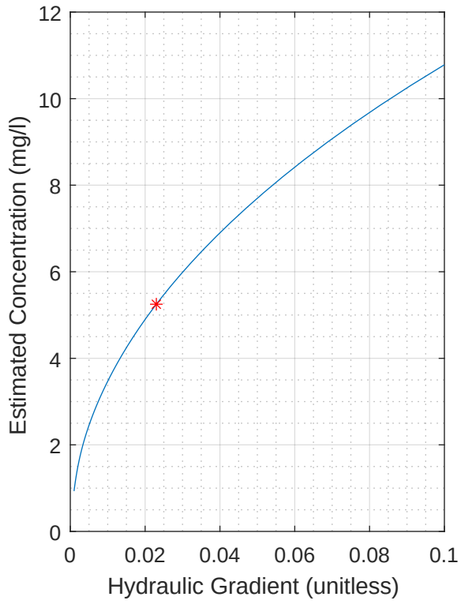
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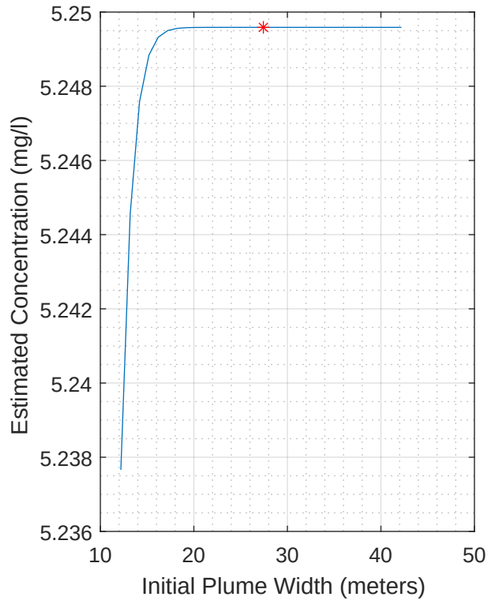
Figure 1: Nitrate-Nitrogen Model Results

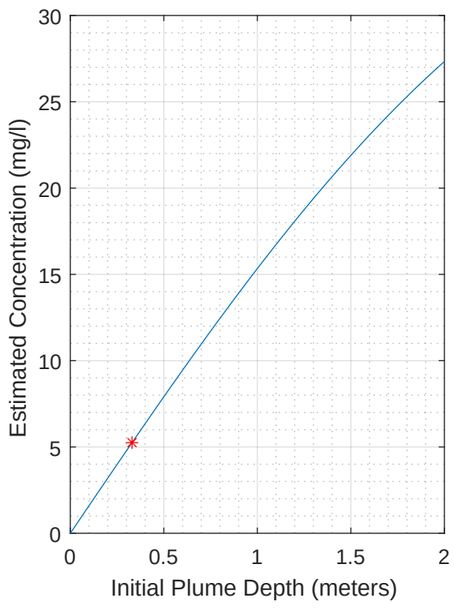


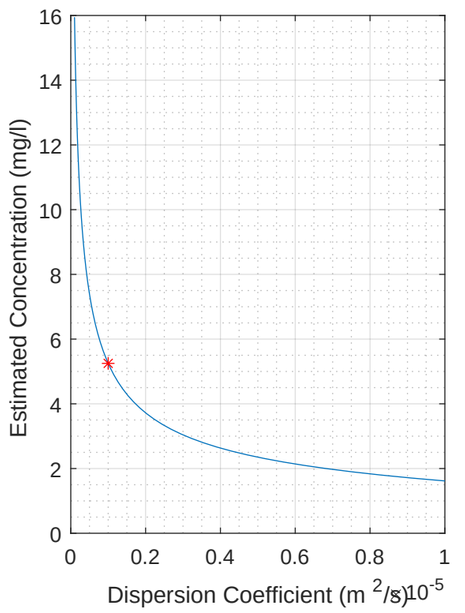


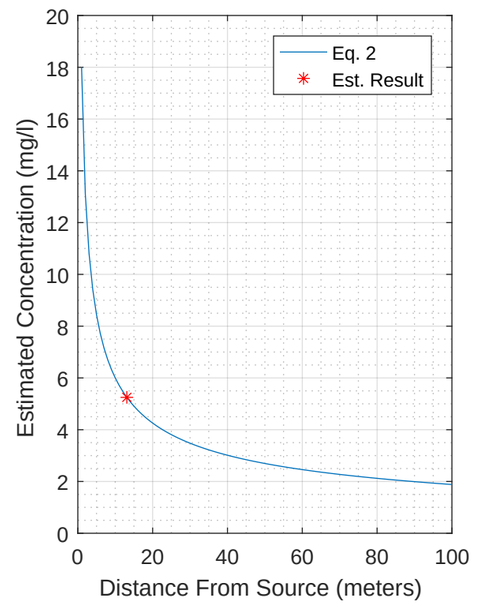


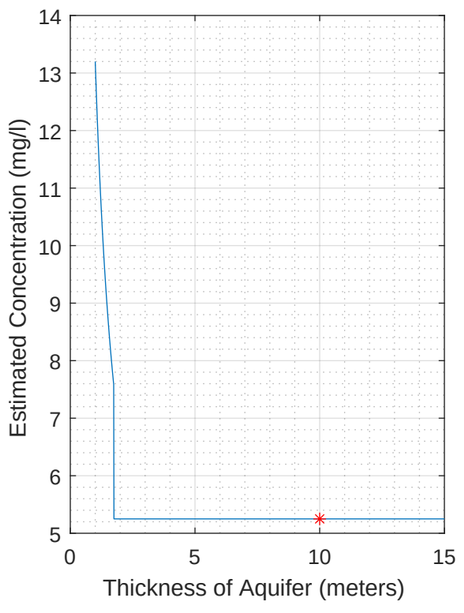












Base Parameters:
Initial Conc.=40 (mg/l)
Hyd. Cond.=1.00E-04 (m/s)
Porosity=0.35 (Unitless)
Gradient=-0.02 (Unitless)
Plume Width=27.43 (m)
Disp. Coeff.=1.00E-06 (m^2/s)
Distance=13.11 (m)
Aquifer Thickness=10.00 (m)
Initial Plume Depth=0.33 (m)
Results:
Eq. 19/20 (Domenico and Palciauskas, 1982)=5.25 mg/l

APPENDIX A

Mounding Analysis Output

Hydrogeologic Assessment
Avesta Gray Meadowview
16 Hancock Street
Gray, Maine

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values based on user-specified inputs. The user MUST click the blue "Re-Calculate Now" button each time ANY of the user-specified inputs are changed otherwise necessary iterations to converge on the correct solution will not be done and values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

use consistent units (e.g. feet & days **or** inches & hours)

Input Values		
0.1470	***R***	**Recharge (infiltration) rate (feet/day)**
0.200	**Sy**	**Specific yield, Sy (dimensionless, between 0 and 1)**
28.00	**K**	**Horizontal hydraulic conductivity, Kh (feet/day)***
16.000	**x**	**1/2 length of basin (x direction, in feet)**
46.000	**y**	**1/2 width of basin (y direction, in feet)**
3650.000	**t**	**duration of infiltration period (days)**
33.000	**hi(0)**	**initial thickness of saturated zone (feet)**

34.176	**h(max)**	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
1.176	**Δh(max)**	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Conversion Table

inch/hour	**feet/day**
0.67	1.33
2.00	4.00

hours	**days**
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

APPENDIX F

Stormwater Management Plan

Meadowview II
Site Plan and Final Major Subdivision Review Submission
16 Hancock Street
Gray, Maine

400 Commercial Street, Suite 404
Portland, ME 04101
207.772.2891

MEMO

Date:	May 19, 2022
To:	Avesta Housing Development Corporation (The Applicant)
From:	David Vitali, P.E.
Reviewed By:	Maureen McGlone, P.E.
Re:	Meadowview II – Stormwater Management Report - 16 Hancock Street, Gray Maine

INTRODUCTION

The project consists of constructing a 26-unit residential building on the existing Meadowview campus, a residential senior housing development located in Gray, Maine. The site contains three existing residential buildings comprised of 20 residential units total and a paved parking area between the buildings constructed in 1976. The project consists of a new two-story building, expanding the existing parking area, new emergency access drives and associated walkways.

The project proposes to purchase additional land to the east as well as a discontinued portion of Hancock Street and create a single parcel with a two land-unit condominium association. The first unit will consist of the three existing buildings and the second unit will consist of the one proposed building. The combined parcel will contain a total of 15.5 acres. The existing impervious area is 0.81 acres (buildings, parking areas, walkways, etc.). The proposed development will result in approximately 1.38 acres of impervious area, an increase of 0.57 acres.

The disturbed area on the site due to the additional building area, septic system, parking and grading is approximately 62,750 square feet or 1.44 acres.

Minimal change to the existing stormwater runoff patterns is anticipated as part of the development and the design intent is to maintain the existing conditions with the stormwater runoff generally discharging to the southern end of the site and a portion flowing to the unnamed stream to the east of the site, as it does today. The entirety of the site is ultimately tributary to the Meadow Brook to the south.

Based on the amount of new disturbed and impervious area proposed in the project, the Maine Department of Environmental Protection (Maine DEP) General Standards and Flooding Standards do not apply. However, the project will require a Stormwater Permit by Rule (PBR) and will meet the Basic Standards. Please see the correspondence with the Maine DEP for the department's initial review and permitting assessment of the proposed project, included with this report as Attachment A.

Section 401.13.12.G of the Town of Gray Subdivision Ordinance states that "[f]or all major subdivisions, regardless of size, a stormwater management plan shall be submitted which complies with the Flooding Standard of DEP Chapter 500 Stormwater Management. For a project that does not require a DEP SLDA Permit, the Planning Board upon a request by the Applicant may waive the Flooding Standard, in the event that greater than seventy-five (75%) percent of the impervious and developed areas (as defined in Chapter 500) for both the lots and infrastructure are treated through the use of buffers in accordance with Chapter 500."

The applicant proposes to treat the majority of the proposed parking area and a significant portion of the existing parking area and roof area (greater than 75% of additional impervious and developed area) with a stormwater Forest Buffer per Chapter 5 of the Maine DEP Best Management Practices (BMP) Manual. Stormwater runoff will pass through a stone-bermed level lip spreader for energy dissipation to allow for a slow release into the Forest Buffer.

The existing and proposed conditions are discussed in more detail below.

EXISTING CONDITIONS

The project proposes the creation of a 15.5-acre parcel located off a dead end on Hancock Street in Gray. The parcel contains three existing residential buildings with a parking area between the buildings. This developed portion of the site occupies the western portion of the larger proposed parcel. The eastern portion of the parcel contains significant amount of wooded area and an unnamed stream.

The soils on site are summarized in the Soil Narrative Report prepared by Albert Frick Associates, Inc dated April 16th, 2021 and are included in Appendix C of the applicant's supporting documentation for the Site Plan and Subdivision submission package.

Currently, stormwater runoff flows generally from north to south across the site and discharges via overland flow to the adjacent parcels.

PROPOSED DEVELOPMENT

The applicant is proposing to construct a 26-unit building and expand the existing parking area as part of the proposed development. Walking paths are proposed around the proposed building that will connect with the existing walking paths on the site. An emergency access road is proposed to loop back to the dead end of Hancock Street. Additionally, a number of "grass on gravel" parking spaces are shown on the plan for future use that need not be built. For these spaces, the contractor will place loam and seed over the gravel base to accommodate for future paving, if required. The potential impervious area of these spaces has been included in the stormwater management design.

The proposed drainage area for the level spreader and forest stormwater buffer is shown on the Stormwater and Erosion Control Plan. The drainage area includes the majority of the proposed impervious surface as well as a significant amount of existing impervious area.

To meet municipal stormwater quality requirements, the majority of the proposed development area and a portion of the existing development area will be directed to a stone bermed level lip spreader to be distributed to a stormwater Forest Buffer via sheet flow. The subcatchment area to the Forest Buffer is shown on the Stormwater and Erosion Control Plan and was used to size the level spreader and buffer

area. The design calculations used to size the stone bermed level spreader and Forest Buffer are included with this report as Attachment B.

MAINE DEP REQUIREMENTS – BASIC STANDARDS

Based on the amount of disturbed area (over one acre), the project triggers Stormwater Management Basic Standards. Erosion and sedimentation control measures will be implemented during construction as shown on the Stormwater and Erosion Control Plan. A Stormwater PBR permit application will be filed with the Maine DEP with the Notice of Intent to meet Maine Construction General Permit (MCGP) requirements prior to beginning construction. Good housekeeping practices will be in accordance with Maine DEP Best Management Practices.

MAINE DEP REQUIREMENTS – QUALITY (GENERAL STANDARDS)

This proposed project results in less than one acre of proposed new impervious surface, therefore General Standards do not apply.

MAINE DEP REQUIREMENTS – QUANTITY (FLOODING STANDARDS)

This proposed project results in less than three acres of proposed new impervious surface, therefore the Flooding Standards do not apply.

MUNICIPAL REQUIREMENTS - QUALITY

Section 401.13.12.G of the Town of Gray Subdivision Ordinance states that "[f]or all major subdivisions, regardless of size, a stormwater management plan shall be submitted which complies with the Flooding Standard of DEP Chapter 500 Stormwater Management. For a project that does not require a DEP SLDA Permit, the Planning Board upon a request by the Applicant may waive the Flooding Standard, in the event that greater than seventy-five (75%) percent of the impervious and developed areas (as defined in Chapter 500) for both the lots and infrastructure are treated through the use of buffers in accordance with Chapter 500."

The applicant proposes to treat the majority of the proposed parking area and a significant portion of the existing parking area and roof area (greater than 75% of additional impervious and developed area) with a stormwater Forest Buffer in accordance with Chapter 5 of the Maine DEP Best Management Practices Manual. Stormwater runoff from the proposed parking lot will be collected in two catch basins (CB-1 and CB-2) located in the gutter line at each end of the parking lot. Stormwater runoff from the existing parking lot will be collected in CB-2 as well as an additional basin (CB-3). The proposed catch basins will discharge into a sediment forebay via a 15" storm drain prior to flowing to the stone-bermed level spreader via a riprap swale. Please refer to the following tables for a summary of the proposed stormwater treatment.

Proposed Additional Impervious and Developed Areas
(Required Treatment Areas)

Total Proposed Additional Impervious Area (A)	24,759 sf
Total Proposed Additional Developed Area (B)	37,652 sf

Areas Proposed to be Treated

Total Impervious Area to Be Treated (C)	35,085 sf
Percentage of Additional Impervious Area Treated = (C/A)	142%
Total Developed Area to Be Treated* (D)	61,954 sf
Percentage of Additional Developed Area Treated = (D/B)	164%

* This area is the entire subcatchment for the Forest Buffer (1S) as shown on the Stormwater and Erosion Control Plan and in HydroCAD.

The proposed Forest Buffer was designed in accordance with Table 5.5 in Chapter 5 of Maine DEP Stormwater BMP manual, as shown in Attachment B. The berm length is determined by the total amount of impervious area and lawn tributary to the buffer. The length of the flow path in the buffer is dictated by the existing slope, vegetative cover, and hydrologic soil group (HSG) in the proposed buffer. Based on the proposed subcatchment area and the soils and slope of the existing buffer, this results in a required berm length of 147' and length of flow path in the buffer of 150'. To be conservative, a berm length of 153' was used for design. The proposed Forest Buffer is 22,950-sf, measuring 153'x150' as shown on the Stormwater and Erosion Control Plan. Per Maine DEP's Chapter 500 Stormwater Management Law, the Forest Buffer easement needs to be protected from disturbance by deed restrictions and covenants. The Forest Buffer will be provided on the adjacent Gray Plaza property via a permanent easement recorded by the owner of the Gray Plaza property. The applicant has secured a verbal agreement with the property owner, and they have agreed to provide a letter of intent.

The subcatchment (1S) tributary to the stone bermed level spreader and Forest Buffer was modeled in HydroCAD to determine the anticipated flows. Chapter 8.3 of the Maine DEP BMP manual requires that the peak stormwater flow rate to a level spreader due to runoff from a 10-year, 24-hour storm be less than 0.25 cubic feet per second (cfs) per foot length of the level spreader lip. Based on the berm length of 153' stated above and attached, the flow from a 10-year, 24-hour storm may not exceed 38.25 cfs. The HydroCAD model shows that the anticipated flow from this storm for subcatchment 1S is 6 cfs, which is well under the maximum discharge for a stone bermed level spreader of this length.

Based on the tables above, the proposed Forest Buffer treats well over 75% of both the proposed additional impervious and developed areas. Therefore, based on this conservative approach of treating existing impervious and developed areas, the applicant is requesting a waiver to meeting the Maine DEP Flooding Standards per Section 402.13.12.G.

MUNICIPAL REQUIREMENTS - QUANTITY

This proposed project meets the requirements of Section 401.13.12.G of the Gray Subdivision Ordinance; therefore, Flooding Standards do not apply. The applicant is requesting a waiver to meeting the Maine DEP Flooding Standards per Section 402.13.12.G of the Town of Gray Subdivision Ordinance.

PIPE SELECTION

The proposed drainage system located in the parking area was modeled in HydroCAD to determine the adequacy of the proposed storm drain pipes to convey the 2-, 10-, and 25-year, 24-hour storms. Pipe selection was restricted by the available cover in the proposed parking area. Based on the model of the drainage system, it appears that the pipe selection adequately conveys the storms listed above. Please refer to Attachment D of this report for the HydroCAD report of the drainage system model.

CONCLUSIONS

The proposed building addition will result in very little change to existing drainage patterns. It is our opinion that the proposed development will not result in adverse impact to downstream water resources or abutters.

ATTACHMENT A

Correspondence with Maine DEP

Meadowview II – Stormwater Management Report
16 Hancock Street
Gray Maine

David Vitali

From: McGill, Jennifer G <Jennifer.G.McGill@maine.gov>
Sent: Wednesday, November 4, 2020 2:14 PM
To: John I. Mahoney; Viola, Benedetto
Cc: Nathaniel Howes
Subject: RE: Avesta Meadowview II, Gray Stormwater Pre-app

Hi John –

Thank you for sending over the historical information for the Avesta Housing project in Gray. As I mentioned during our pre-application meeting earlier today, the dates of construction and existing amounts of impervious and developed area are important in determining jurisdictional thresholds for Site Law and Stormwater Law.

The information that you provided today indicates that there is currently 35,398 square feet (0.813 acres) of impervious area on the site that was constructed in 1976, and that you will be proposing an additional 16,900 square feet (0.388 acres) of impervious area for the proposed project consisting of one building and an additional parking area for a total of 1.2 acres of impervious.

Site Law Jurisdiction:
The current Site Law definition of structure is relevant October 1, 1975 and later. The definition of structure under Site Law is *"Buildings, parking lots, roads, paved areas, wharves or areas to be stripped, graded, and not to be revegetated that cause a total project to occupy a ground area in excess of three acres. Stripped or graded areas that are not revegetated within a calendar year are included in the 3-acre threshold."* This project will not meet or exceed that threshold.

Stormwater Management Law (Chapter 500) Jurisdiction:
For jurisdiction under Stormwater Law the Department considers impervious area created July 1, 1997 or later when determining whether jurisdictional thresholds are exceeded. It appears in this case that none of the existing impervious area meets this criterion.

Therefore, for this project the Department would consider only the new proposed impervious area of 0.388 acres, which would not meet the Stormwater Law permitting threshold of one acre or more of impervious area in a watershed not most at risk for the General Standard. However, if the project will *disturb* more than one acre of soil (e.g. for installation of the septic system and any other areas stumped/grubbed), it will trigger the requirement for a Stormwater Permit by Rule.

If you will be disturbing less than one acre of soil in total for the project, no Department permit would be required under Stormwater Law.

Natural Resources Protection Act (NRPA):
We also discussed that any outfalls from stormwater BMPs required by the Town of Gray will require a NRPA Section 7 PBR if they are located within 75 feet of the upland edge of a freshwater wetland or within 75 feet of the stream that has been identified on the site.

Please let me know if you have any additional questions or concerns going forward.

Jennifer McGill
Environmental Specialist in the Bureau of Land Resources
Maine Department of Environmental Protection

(207)-699-9899
www.maine.gov/dep

From: John I. Mahoney <john.mahoney@ransomenv.com>
Sent: Wednesday, November 04, 2020 12:28 PM
To: McGill, Jennifer G <Jennifer.G.McGill@maine.gov>; Viola, Benedetto <Benedetto.Viola@maine.gov>
Cc: Nathaniel Howes <NHowes@AvestaHousing.org>
Subject: Avesta Meadowview II, Gray Stormwater Pre-app

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.
Thanks for your time today Jennifer and Ben:

The existing buildings and site improvements were constructed in 1976. I've attached the tax assessment card from the Town.

The site's existing impervious area is 35,398 SF. This impervious area (consisting of existing buildings, parking and sidewalks) will remain and not be Redeveloped.

We are proposing to add approximately 16,900 SF of impervious area, which would result in a total impervious are for the site of 52,300 SF.

Could you clarify that we are below the applicable thresholds for requiring a State (Chapter 500) Stormwater permit or a State Site Law permit?

Please don't hesitate to reach our if you need additional information to make this determination.

Thanks again.

Best,
John Mahoney, P.E.
Project Manager / Design Engineer
RANSOM CONSULTING, INC.
400 Commercial St. Suite 404
Portland, Maine 04101
tel (207) 772-2891 Ex 32
Cell (207) 831-6165

From: Nathaniel Howes <NHowes@AvestaHousing.org>
Sent: Wednesday, November 4, 2020 11:52 AM
To: John I. Mahoney <john.mahoney@ransomenv.com>
Subject: Tax Card

Nate Howes
Development Officer
Avesta Housing
307 Cumberland Ave. | Portland, ME 04101
w: 207-553-7780, x3374 | c: 207-232-1021 |
www.AvestaHousing.org


ATTACHMENT B

Stone Bermed Level Lip Spreader and Forest Stormwater Buffer Design

Meadowview II – Stormwater Management Report
16 Hancock Street
Gray Maine

RANSOM
Consulting Engineers and Scientists

400 Commerical Street, Suite 404
Portland, ME 04101
(207) 772-2891
www.ransomenv.com

JOB	191.06051 - Meadowview II		
SHEET NO.	1	OF	2
CALCULATED BY	DJV	DATE	1/27/2022
REVIEWD BY	MPM	DATE	1/27/2022
FILE NAME	B-1_Buffer Sizing Calcs.xlsx	PRINT DATE	1/27/2022

VEGETATED BUFFER SIZING

Task: Determine required dimensions of vegetated buffer.

References:

1. Maine DEP Best Management Practices Stormwater Manual, Chapter 5. Section 5.2 Buffer with stone bermed level lip spreader

Stone Berm Specifications: The stone berm to which the ditch turn-out delivers the runoff must be at least 20 feet in length and must be constructed along the contour. It must be at least one- foot high and two feet across the top with 2:1 side slopes.

Tributary to Level Lip Spreader	1	
Contributing Area	61,594	SF
	1.4	ACRES
Prop. Impervious Area		
Building/Roof	410	SF
Parking/Pvmt	10,693	SF
Total	11,103	SF
	0.25	ACRES
Exist. Impervious Area		
Building/Roof	8,261	SF
Parking/Pvmt	15,712	SF
Total	23,973	SF
	0.55	ACRES
Remaining Lawn Area	26,518	SF
	0.61	ACRES
Required Berm Length	147	FT
Req. Length of Flow Path in Buffer	150	FT

Table 5.5
Berm and Flow Path Length per Acre of Impervious area

Hydrologic Soil Group	Length of Flow Path in Buffer (feet)	Berm Length (feet)							
		0-8% Slope				9-15% Slope			
		Per Acre of Impervious Area		Per Acre of Lawn		Per Acre of Impervious Area		Per Acre of Lawn	
		FB	MB	FB	MB	FB	MB	FB	MB
A	75	75	125	25	35	90	150	30	42
	100	65	75	20	25	78	90	24	30
	150	50	60	15	20	60	72	18	24
B	75	100	150	30	45	120	180	36	54
	100	80	100	25	30	96	120	30	36
	150	65	75	20	25	78	90	24	30
C Loamy Sand or Sandy Loam	75	125	150	35	45	150	180	42	54
	100	100	125	30	35	120	150	36	42
	150	75	100	25	30	90	120	30	36
C Silty Loam, Clay Loam or Silty Clay Loam	100	150	200	45	60	180	240	54	72
	150	100	150	30	45	120	180	36	54
D Non-Wetland	150	150	200	45	60	180	240	54	72

FB = Forest Buffer **MB** = Meadow Buffer

NOTE: These tables were developed using a 1.25 inch, 24 hour storm of type III distribution, giving a maximum unit flow rate of less than 0.009 cfs per foot.

RANSOM
Consulting Engineers and Scientists

400 Commerical Street, Suite 404
Portland, ME 04101
(207) 772-2891
www.ransomenv.com

JOB	191.06051 - Meadowview		
SHEET NO.	2	OF	2
CALCULATED BY	DJV	DATE	1/27/2022
REVIEWED BY	MPM	DATE	1/27/2022
FILE NAME	B-2_Level Lip Spreader Calcs.	PRINT DATE	1/27/2022

LEVEL LIP SPREADER 1

Task: Determine required length of level spreader and dimensions of downstream vegetated buffer.

References:

1. Maine DEP Best Management Practices Stormwater Manual, Section 8.3 "Level Spreaders"

Discharge to a Level Spreader: The peak stormwater flow rate to a level spreader due to runoff from a 10-year, 24-hour storm should be less than 0.25 cubic feet per second (0.25 cfs) per foot length of level spreader lip. The maximum drainage area to the spreader should not exceed 0.10 acre per foot length of level spreader lip.

Length of Spreader: The level spreader length should not be more than 25 feet unless the receiving area is appropriate to handle the additional flow.

Tributary to Level Lip Spreader: 1

A portion of subcatchment 1S is tributary to LLS 1

Contributing Area: 61,594.00 SF

1.4 ACRES

Minimum Length based on Contributing Area: 14 FT

Proposed Length*: 153 FT

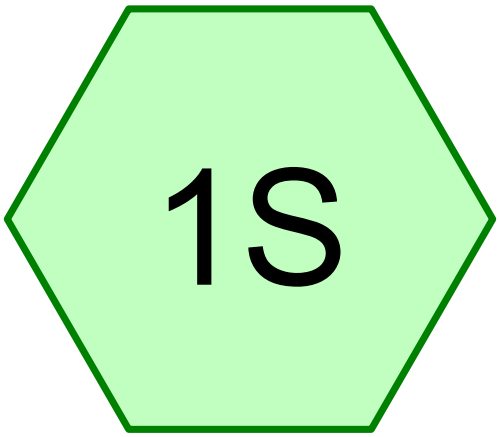
Runoff from a 10-year, 24-hour storm

From HydroCAD: 6.00 CFS

Minimum Length based on Flow: 24.0 FT

Proposed Length*: 153 FT

*The stone bermed level lip spreader is driven by the required size of the downstream Forest Buffer. It is our opinion that the downstream area is adequate to handle the anticipated flows.



Buffer Tributary Area

Subcat Reach Pond Link

Routing Diagram for 191.06051 SW-POST
Prepared by Ransom Consulting, Printed 1/27/2022
HydroCAD® 10.00-26 s/n 05121 © 2020 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.617	86	<50% Grass cover, Poor, HSG C (1S)
0.805	98	Paved parking, HSG C (1S)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
1.422	HSG C	1S
0.000	HSG D	
0.000	Other	

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.617	0.000	0.000	0.617	<50% Grass cover, Poor	1S
0.000	0.000	0.805	0.000	0.000	0.805	Paved parking	1S

Summary for Subcatchment 1S: Buffer Tributary Area

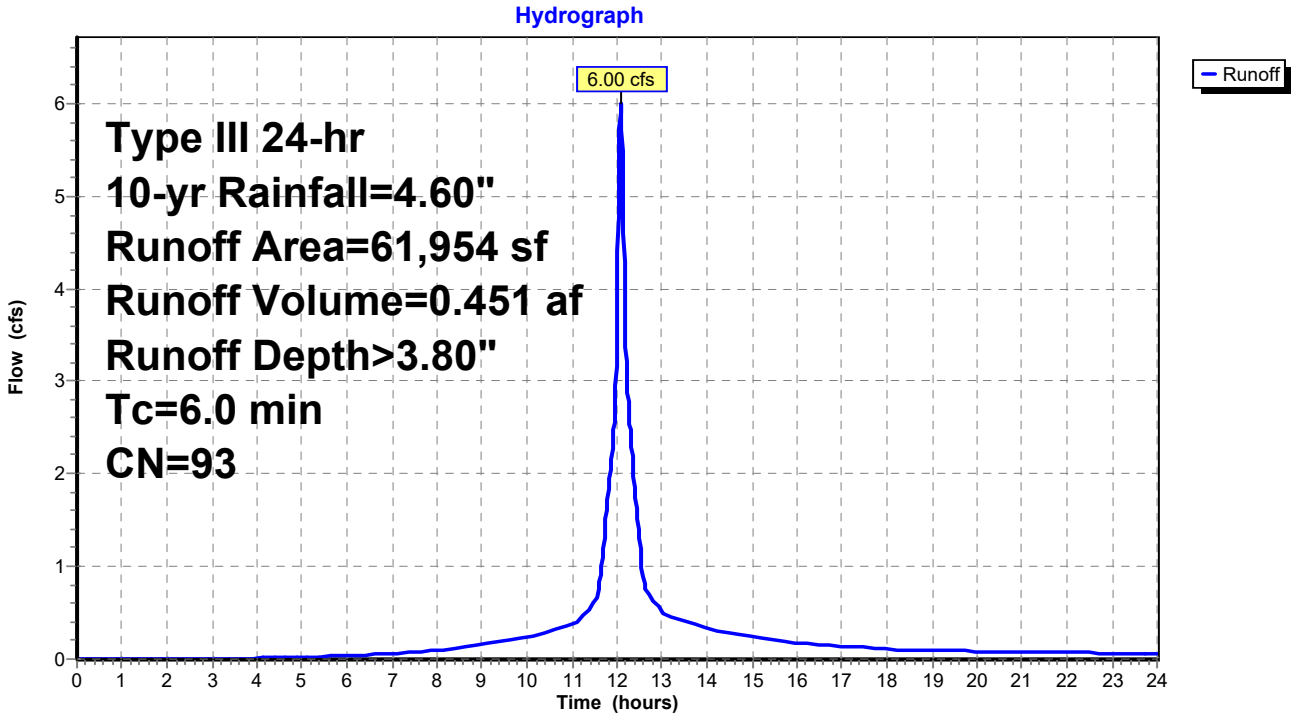
Runoff = 6.00 cfs @ 12.08 hrs, Volume= 0.451 af, Depth> 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.60"

Area (sf)	CN	Description
8,671	98	Paved parking, HSG C
26,414	98	Paved parking, HSG C
26,869	86	<50% Grass cover, Poor, HSG C
61,954	93	Weighted Average
26,869		43.37% Pervious Area
35,085		56.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1S: Buffer Tributary Area



ATTACHMENT C

Post-Construction Stormwater Inspection and Maintenance Plan

Meadowview II – Stormwater Management Report
16 Hancock Street
Gray Maine

RANSOM Consulting, Inc.

Consulting Engineers and Scientists

Meadowview II
Post-Construction Stormwater Inspection and Maintenance Plan

Inspection and Maintenance Contract:

Long-term inspection and maintenance is the responsibility of the Owner and must be performed by a qualified stormwater maintenance inspector. Inspection and maintenance of stormwater management facilities shall be regularly provided under an inspection and maintenance agreement with the Town of Gray that must be certified annually to the Town of Gray Enforcement Authority under the requirements of the Town of Gray's Code of Ordinances. A legal agreement shall be established with responsibility for inspection and maintenance and should list specific maintenance responsibilities (including timetables) as well as provide for funding for the long-term inspection and maintenance of the project. Debris and sediment buildup shall be removed from plunge pools, level spreaders, or vegetated drainage channels, as needed.

Level Spreaders, Plunge Pools, Inlet and Outlet Protection:

Level spreaders and plunge pools and inlet and outlet pools should be inspected for sediment accumulation and debris that may reduce its capacity.

Maintenance criteria for the rip rap stormwater management facilities are:

- Sediment build-up should be removed when it has accumulated to approximately 25% of design volume or capacity. Dispose of the sediments appropriately.
- Remove debris such as leaf litter, branches, and tree growth. Control woody vegetation on the embankments.
- Do not store snow within level spreaders or plunge pools or in the area adjacent to inlet and outlet protection.
- Mowing of vegetated level spreaders can occur semi-annually to a height of no less than 6 inches. If mowing is desired only hand-held or push-mowers shall be used (no tractors). The cut vegetation should be removed to prevent the decaying of organic litter from adding pollutants to the discharge from the level spreader.

- Level spreaders may need to be reconstructed when sheet flow from the spreader channelizes into the buffer.

Culverts:

Inspect culverts in the spring, in late fall, and after heavy rains to remove any obstructions to flow. Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit. Repair any erosion damage at the culvert's inlet and outlet.

Buffers:

Manage each buffer's vegetation consistently with the requirements in any deed restriction for the buffer. Inspect resource and treatment buffers once per year for evidence of erosion, concentrating flows and encroachment by development. Inspect vegetated slopes early in growing season or after heavy rains to identify active or potential erosion problems.

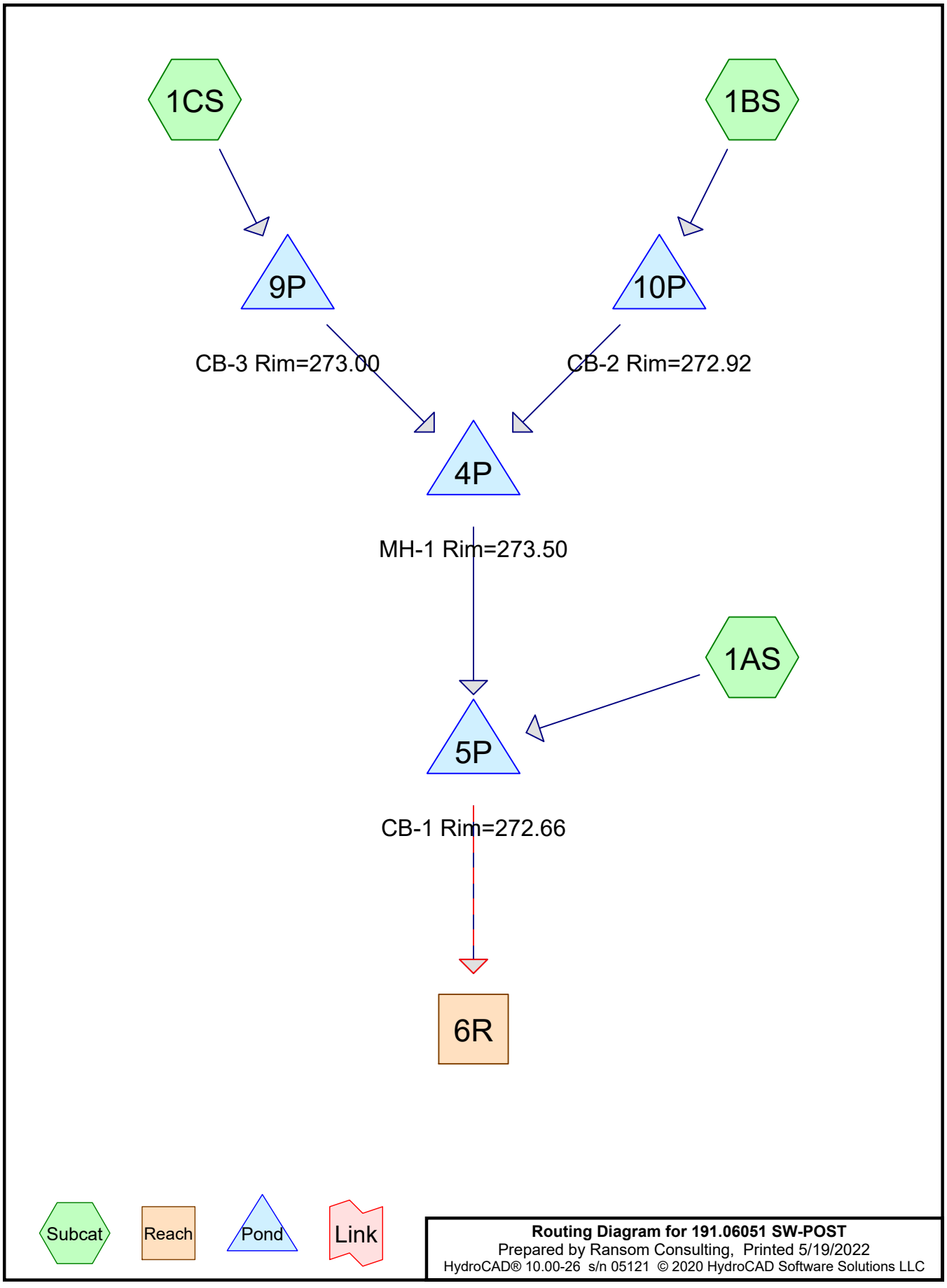
Maintenance criteria for the vegetated and wooded buffers are as follows:

- Wooded buffers must remain fully wooded and have no disturbance to the duff layer.
- Buffers should not be traversed by all-terrain vehicles or other vehicles. Activities within buffers should be conducted so as not to damage vegetation, disturb any organic duff layer, or expose soils.
- Replant bare areas. All eroded areas should be repaired, seeded and mulched.
- Where erosion rills are evident provide armor with turf reinforcement mat or riprap or divert flows to areas designed to withstand concentrated flows

ATTACHMENT D

Drainage System Model

Meadowview II – Stormwater Management Report
16 Hancock Street
Gray Maine


1CS
1BS
9P
10P
CB-3 Rim=273.00
CB-2 Rim=272.92
4P
MH-1 Rim=273.50
1AS
5P
CB-1 Rim=272.66
6R
Subcat
Reach
Pond
Link
Routing Diagram for 191.06051 SW-POST
Prepared by Ransom Consulting, Printed 5/19/2022
HydroCAD® 10.00-26 s/n 05121 © 2020 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.322	74	>75% Grass cover, Good, HSG C (1AS, 1BS, 1CS)
0.684	98	Paved parking, HSG C (1AS, 1BS, 1CS)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
1.007	HSG C	1AS, 1BS, 1CS
0.000	HSG D	
0.000	Other	

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.322	0.000	0.000	0.322	>75% Grass cover, Good	1AS, 1BS, 1CS
0.000	0.000	0.684	0.000	0.000	0.684	Paved parking	1AS, 1BS, 1CS

Summary for Subcatchment 1AS:

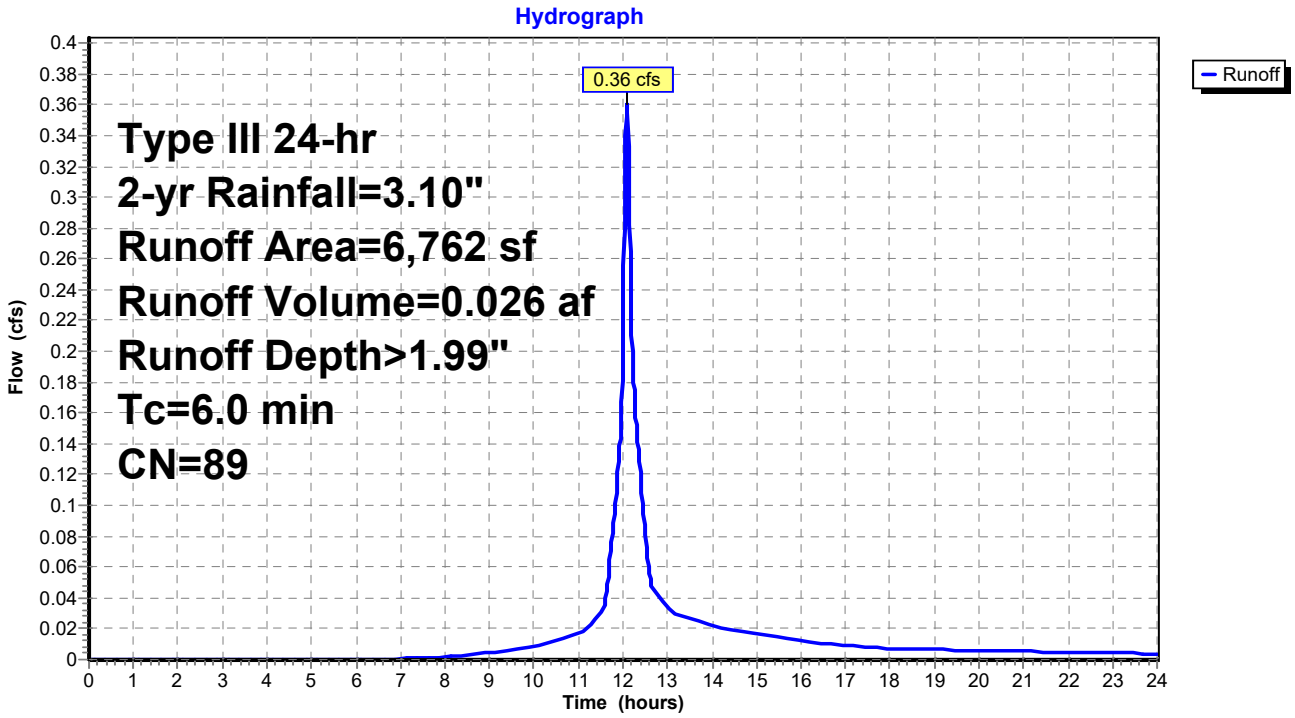
Runoff = 0.36 cfs @ 12.09 hrs, Volume= 0.026 af, Depth> 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
2,456	74	>75% Grass cover, Good, HSG C
4,306	98	Paved parking, HSG C
6,762	89	Weighted Average
2,456		36.32% Pervious Area
4,306		63.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1AS:



Summary for Subcatchment 1BS:

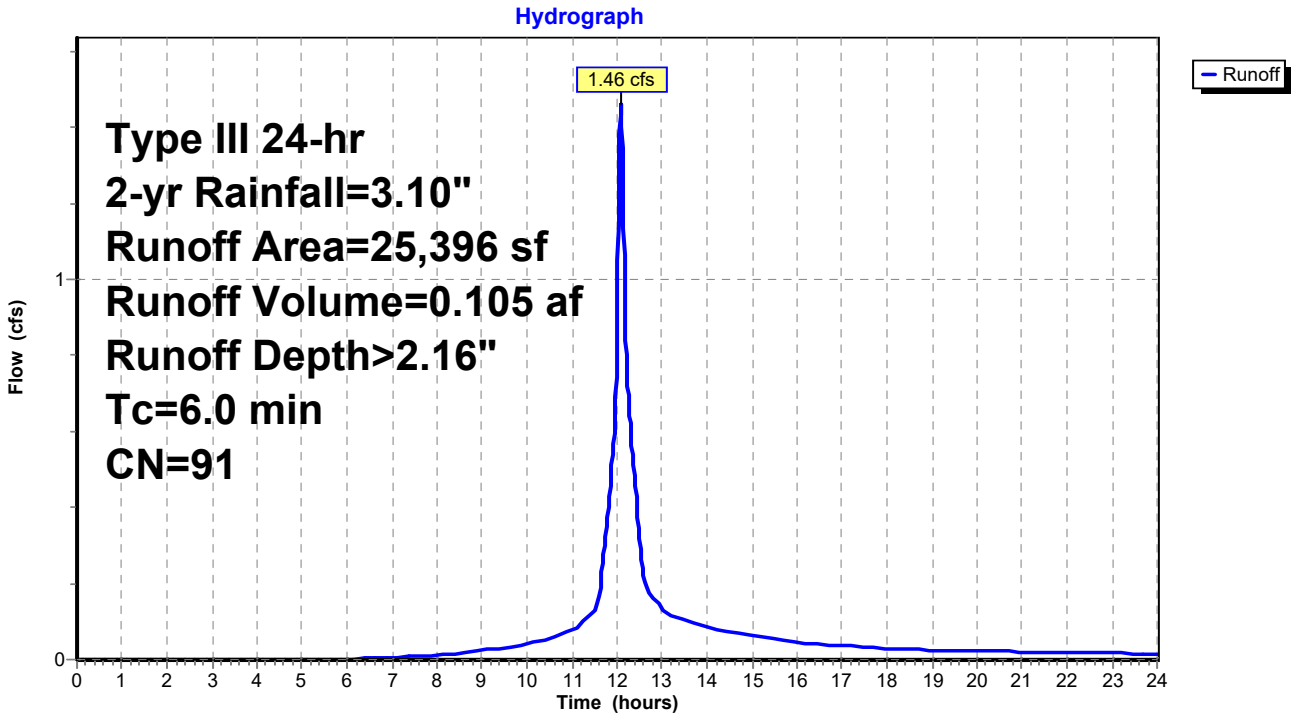
Runoff = 1.46 cfs @ 12.09 hrs, Volume= 0.105 af, Depth> 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
7,896	74	>75% Grass cover, Good, HSG C
17,500	98	Paved parking, HSG C
25,396	91	Weighted Average
7,896		31.09% Pervious Area
17,500		68.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1BS:



Summary for Subcatchment 1CS:

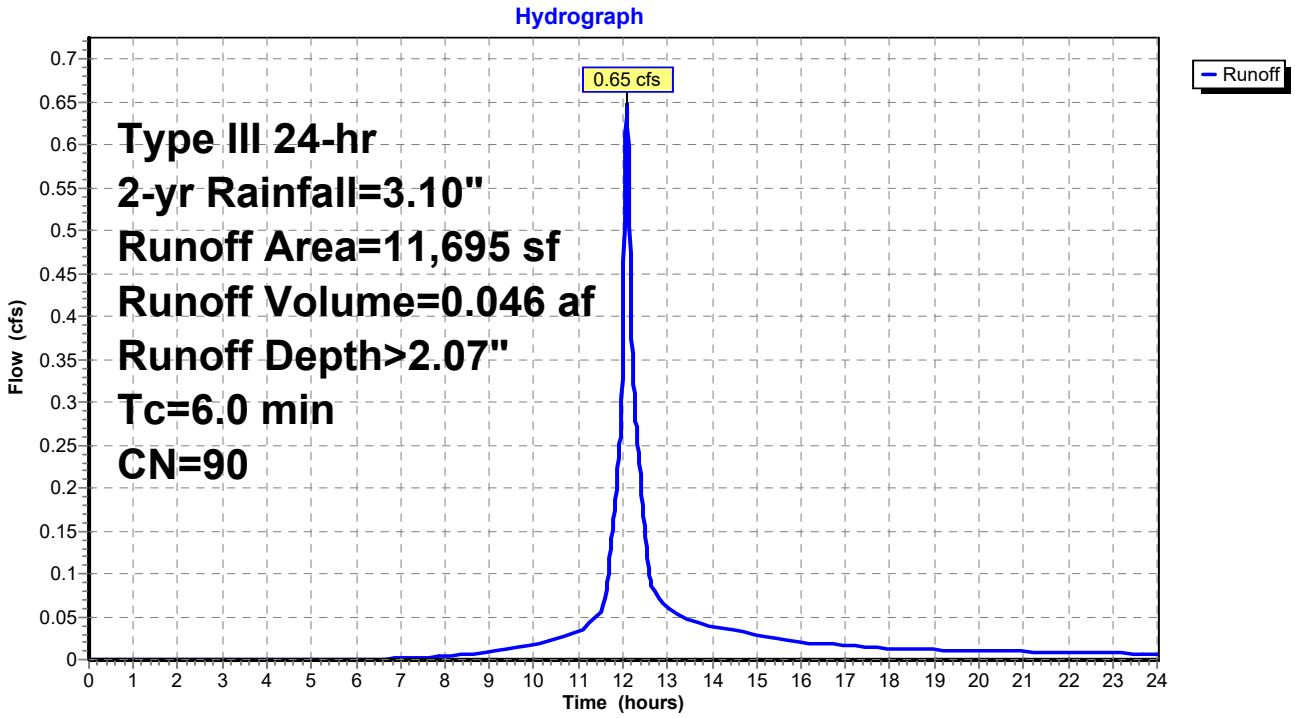
Runoff = 0.65 cfs @ 12.09 hrs, Volume= 0.046 af, Depth> 2.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
3,693	74	>75% Grass cover, Good, HSG C
8,002	98	Paved parking, HSG C
11,695	90	Weighted Average
3,693		31.58% Pervious Area
8,002		68.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1CS:

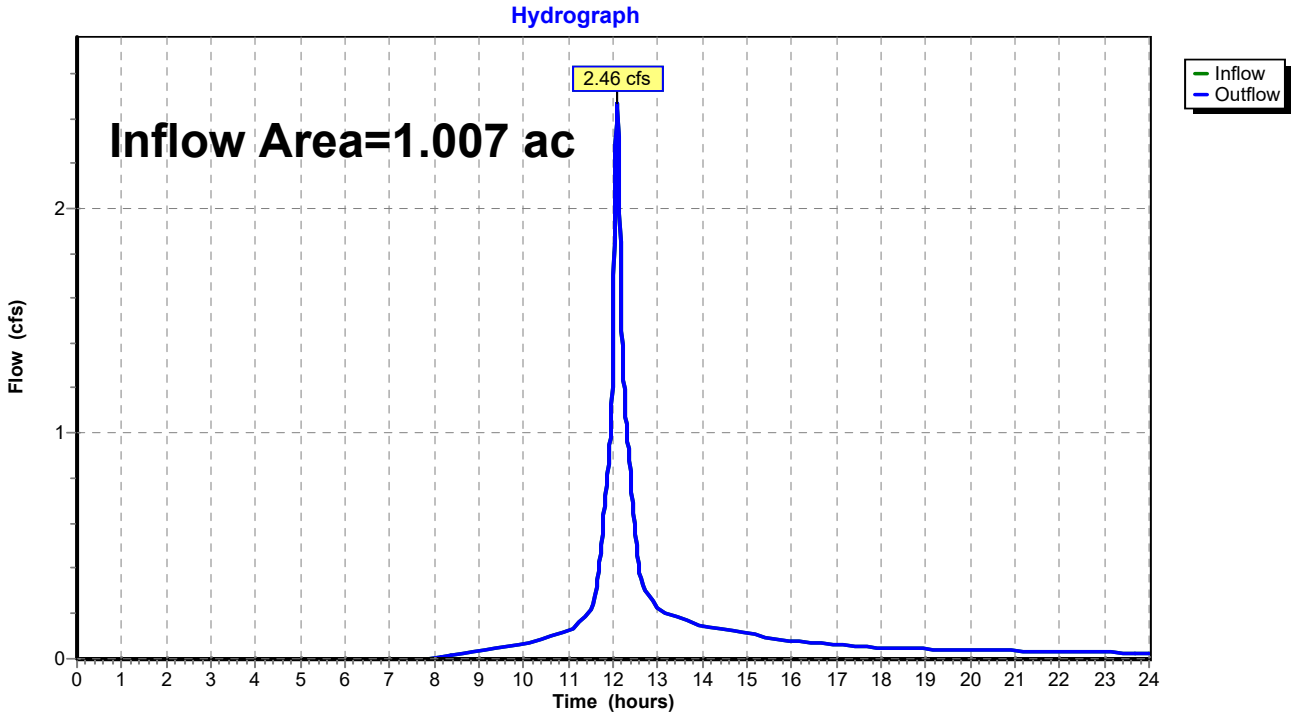


Summary for Reach 6R:

Inflow Area = 1.007 ac, 67.97% Impervious, Inflow Depth > 2.09" for 2-yr event
Inflow = 2.46 cfs @ 12.09 hrs, Volume= 0.175 af
Outflow = 2.46 cfs @ 12.09 hrs, Volume= 0.175 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach 6R:



Summary for Pond 4P: MH-1 Rim=273.50

Inflow Area = 0.851 ac, 68.76% Impervious, Inflow Depth > 2.12" for 2-yr event
Inflow = 2.10 cfs @ 12.09 hrs, Volume= 0.150 af
Outflow = 2.10 cfs @ 12.09 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.1 min
Primary = 2.10 cfs @ 12.09 hrs, Volume= 0.150 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 271.46' @ 12.09 hrs Surf.Area= 13 sf Storage= 13 cf
Flood Elev= 273.50' Surf.Area= 13 sf Storage= 38 cf

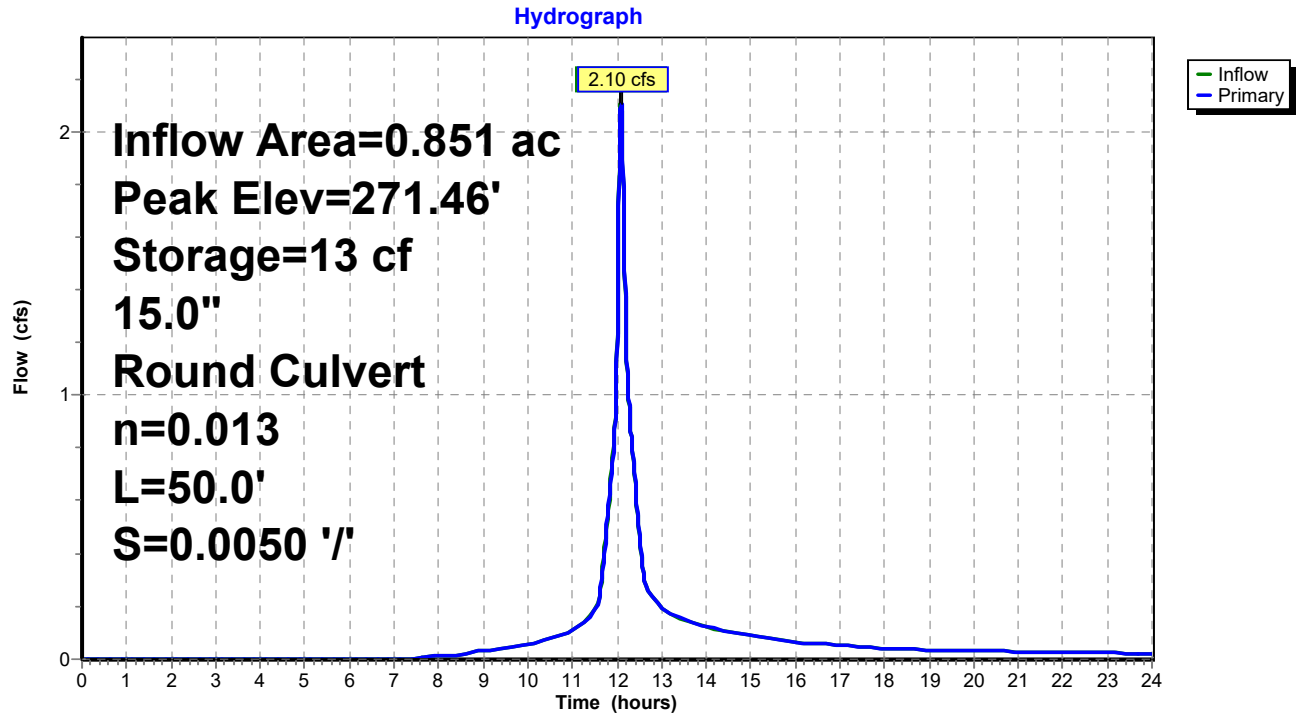
Plug-Flow detention time= 0.3 min calculated for 0.150 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (807.7 - 807.5)

Volume	Invert	Avail.Storage	Storage Description
#1	270.41'	38 cf	**4.00'D x 3.06'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	270.41'	**15.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 270.41' / 270.16' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.11 cfs @ 12.09 hrs HW=271.46' TW=271.15' (Dynamic Tailwater)
↳**1=Culvert** (Outlet Controls 2.11 cfs @ 2.60 fps)

Pond 4P: MH-1 Rim=273.50



Summary for Pond 5P: CB-1 Rim=272.66

Inflow Area = 1.007 ac, 67.97% Impervious, Inflow Depth > 2.10" for 2-yr event
Inflow = 2.46 cfs @ 12.09 hrs, Volume= 0.176 af
Outflow = 2.46 cfs @ 12.09 hrs, Volume= 0.175 af, Atten= 0%, Lag= 0.1 min
Primary = 2.46 cfs @ 12.09 hrs, Volume= 0.175 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 271.15' @ 12.09 hrs Surf.Area= 13 sf Storage= 38 cf
Flood Elev= 272.66' Surf.Area= 16 sf Storage= 57 cf

Plug-Flow detention time= 3.4 min calculated for 0.175 af (100% of inflow)
Center-of-Mass det. time= 1.3 min (809.6 - 808.3)

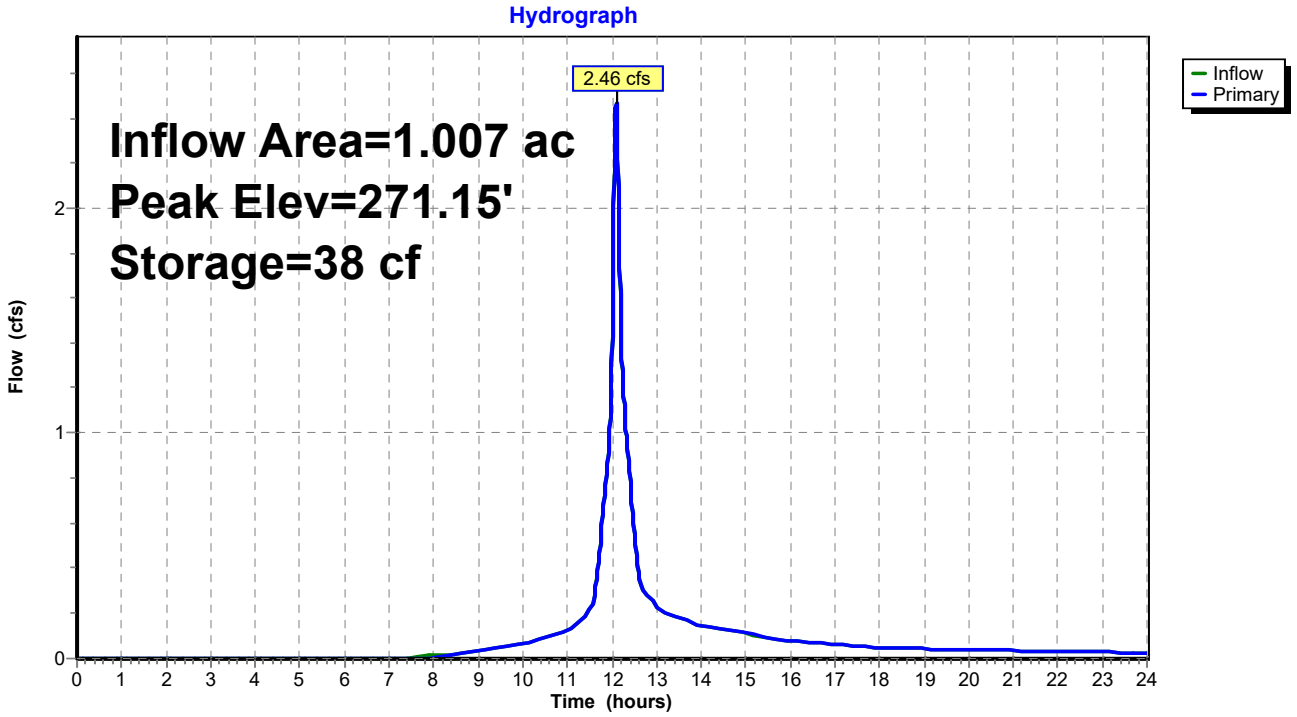
Volume	Invert	Avail.Storage	Storage Description
#1	268.16'	57 cf	**4.00'D x 4.50'H Vertical Cone/Cylinder**
#2	272.66'	75 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		132 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.66	3	0	0
272.91	600	75	75

Device	Routing	Invert	Outlet Devices
#1	Primary	270.16'	**15.0" Round Culvert** L= 31.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 270.16' / 270.00' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Primary	272.66'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.46 cfs @ 12.09 hrs HW=271.15' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.46 cfs @ 3.22 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 5P: CB-1 Rim=272.66



Summary for Pond 9P: CB-3 Rim=273.00

Inflow Area = 0.268 ac, 68.42% Impervious, Inflow Depth > 2.07" for 2-yr event
Inflow = 0.65 cfs @ 12.09 hrs, Volume= 0.046 af
Outflow = 0.65 cfs @ 12.09 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.3 min
Primary = 0.65 cfs @ 12.09 hrs, Volume= 0.046 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 271.51' @ 12.09 hrs Surf.Area= 13 sf Storage= 38 cf
Flood Elev= 273.00' Surf.Area= 16 sf Storage= 57 cf

Plug-Flow detention time= 12.5 min calculated for 0.046 af (99% of inflow)
Center-of-Mass det. time= 4.7 min (812.2 - 807.5)

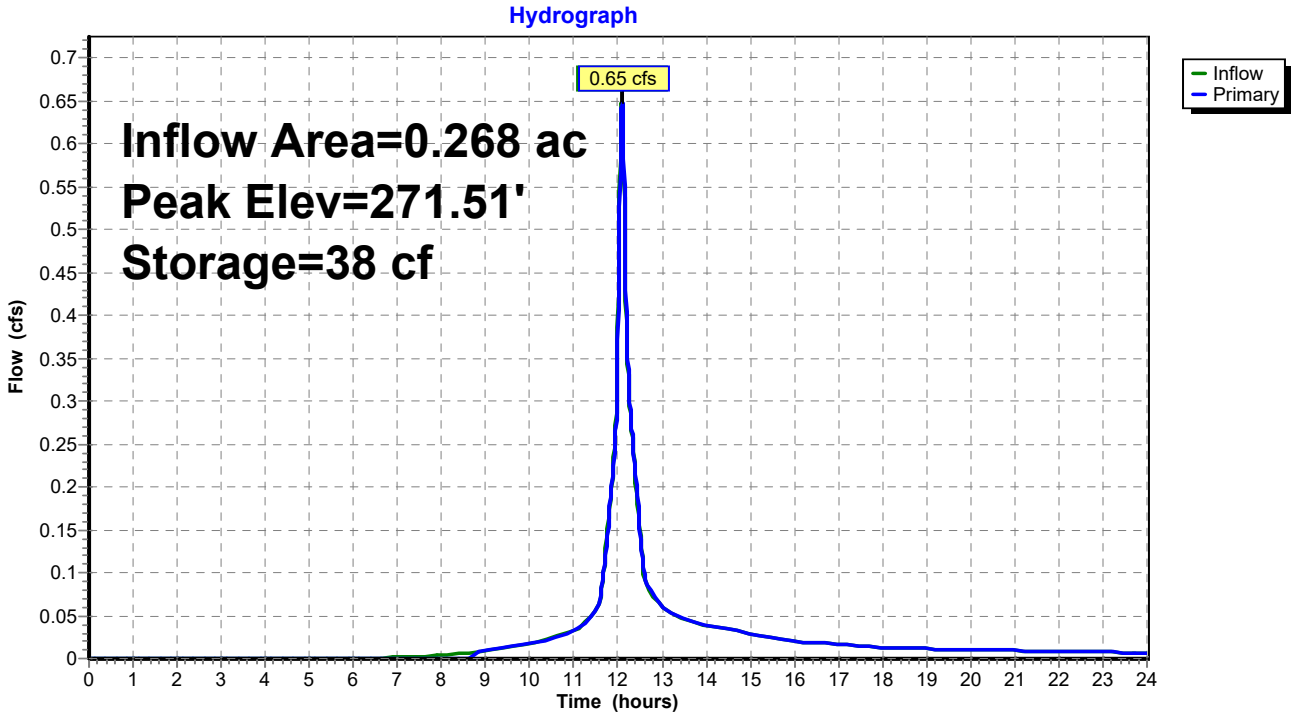
Volume	Invert	Avail.Storage	Storage Description
#1	268.48'	57 cf	**4.00'D x 4.52'H Vertical Cone/Cylinder**
#2	273.00'	72 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		129 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
273.00	3	0	0
273.16	900	72	72

Device	Routing	Invert	Outlet Devices
#1	Primary	270.48'	**12.0" Round Culvert** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 270.48' / 270.41' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	273.00'	**2.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.66 cfs @ 12.09 hrs HW=271.50' TW=271.46' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.66 cfs @ 0.83 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 9P: CB-3 Rim=273.00



Summary for Pond 10P: CB-2 Rim=272.92

Inflow Area = 0.583 ac, 68.91% Impervious, Inflow Depth > 2.16" for 2-yr event
Inflow = 1.46 cfs @ 12.09 hrs, Volume= 0.105 af
Outflow = 1.46 cfs @ 12.09 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.2 min
Primary = 1.46 cfs @ 12.09 hrs, Volume= 0.104 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 271.70' @ 12.09 hrs Surf.Area= 13 sf Storage= 41 cf
Flood Elev= 272.92' Surf.Area= 16 sf Storage= 56 cf

Plug-Flow detention time= 6.0 min calculated for 0.104 af (99% of inflow)
Center-of-Mass det. time= 2.4 min (805.5 - 803.0)

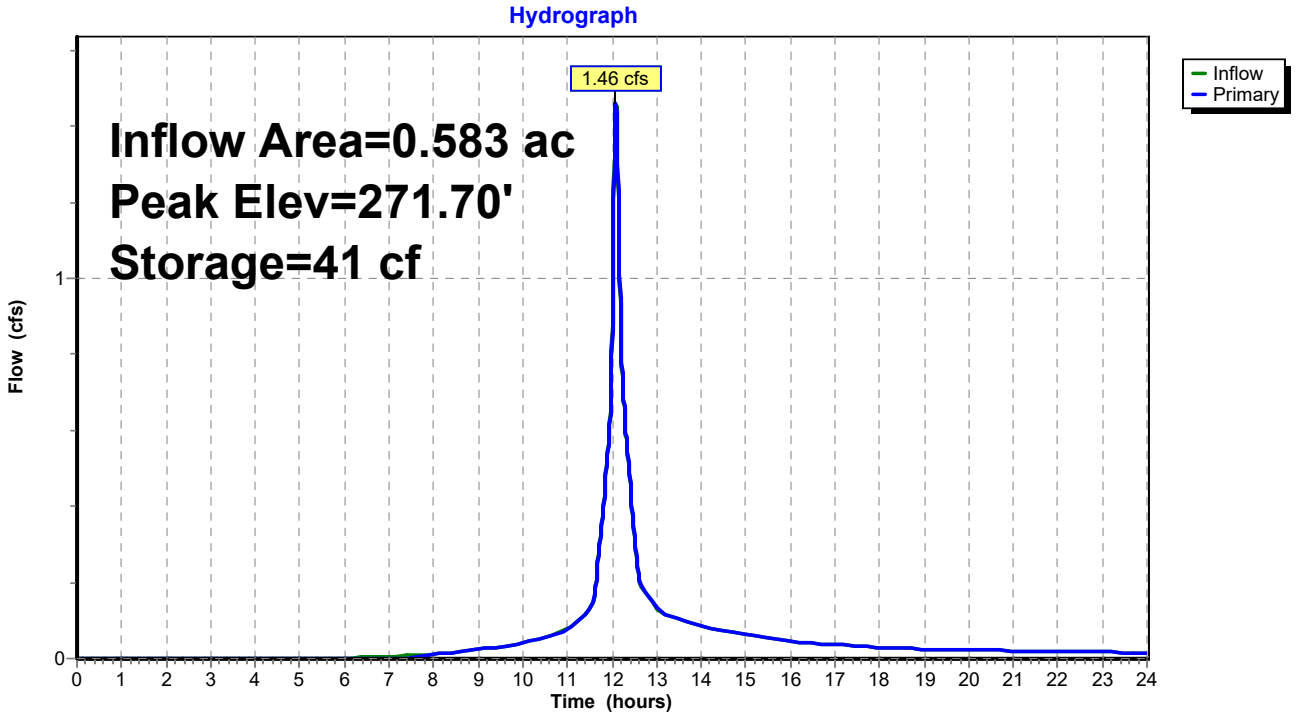
Volume	Invert	Avail.Storage	Storage Description
#1	268.47'	56 cf	**4.00'D x 4.45'H Vertical Cone/Cylinder**
#2	272.92'	87 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		142 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.92	3	0	0
273.00	120	5	5
273.16	900	82	87

Device	Routing	Invert	Outlet Devices
#1	Primary	270.47'	**12.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 270.47' / 270.41' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	272.92'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.46 cfs @ 12.09 hrs HW=271.70' TW=271.46' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.46 cfs @ 1.86 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 10P: CB-2 Rim=272.92



Summary for Subcatchment 1AS:

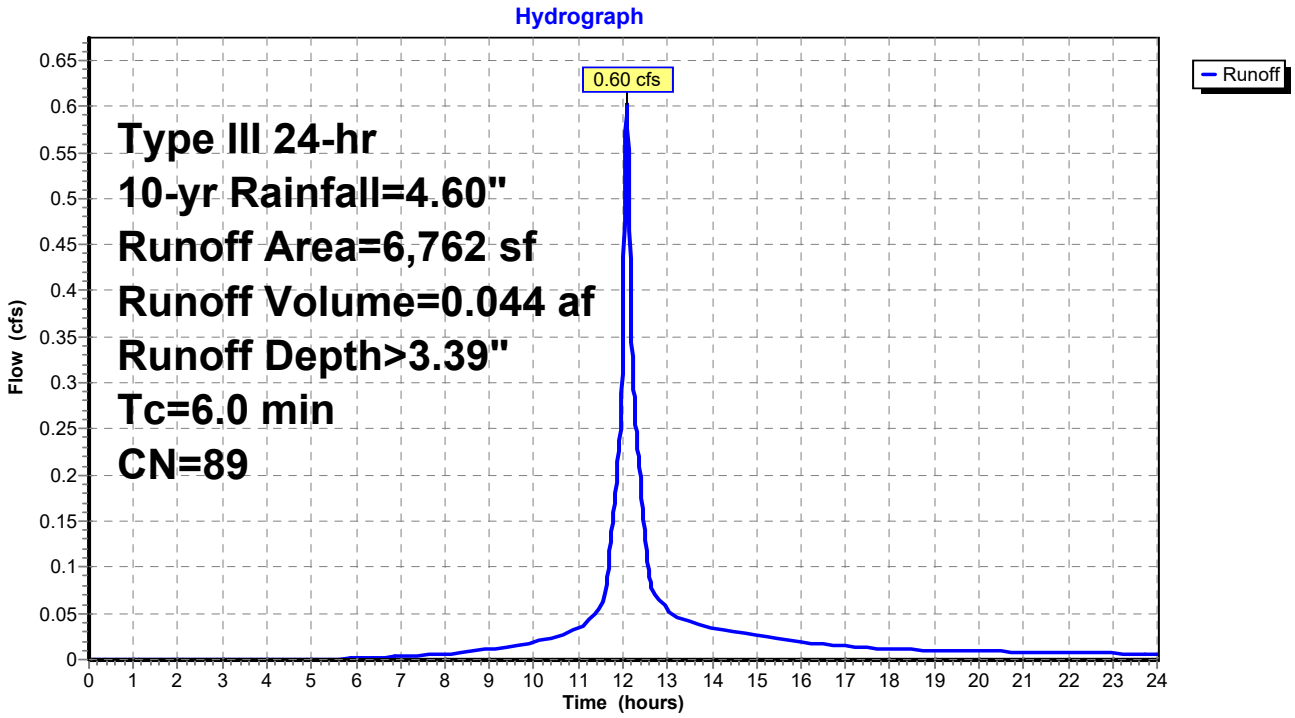
Runoff = 0.60 cfs @ 12.09 hrs, Volume= 0.044 af, Depth> 3.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.60"

Area (sf)	CN	Description
2,456	74	>75% Grass cover, Good, HSG C
4,306	98	Paved parking, HSG C
6,762	89	Weighted Average
2,456		36.32% Pervious Area
4,306		63.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1AS:



Summary for Subcatchment 1BS:

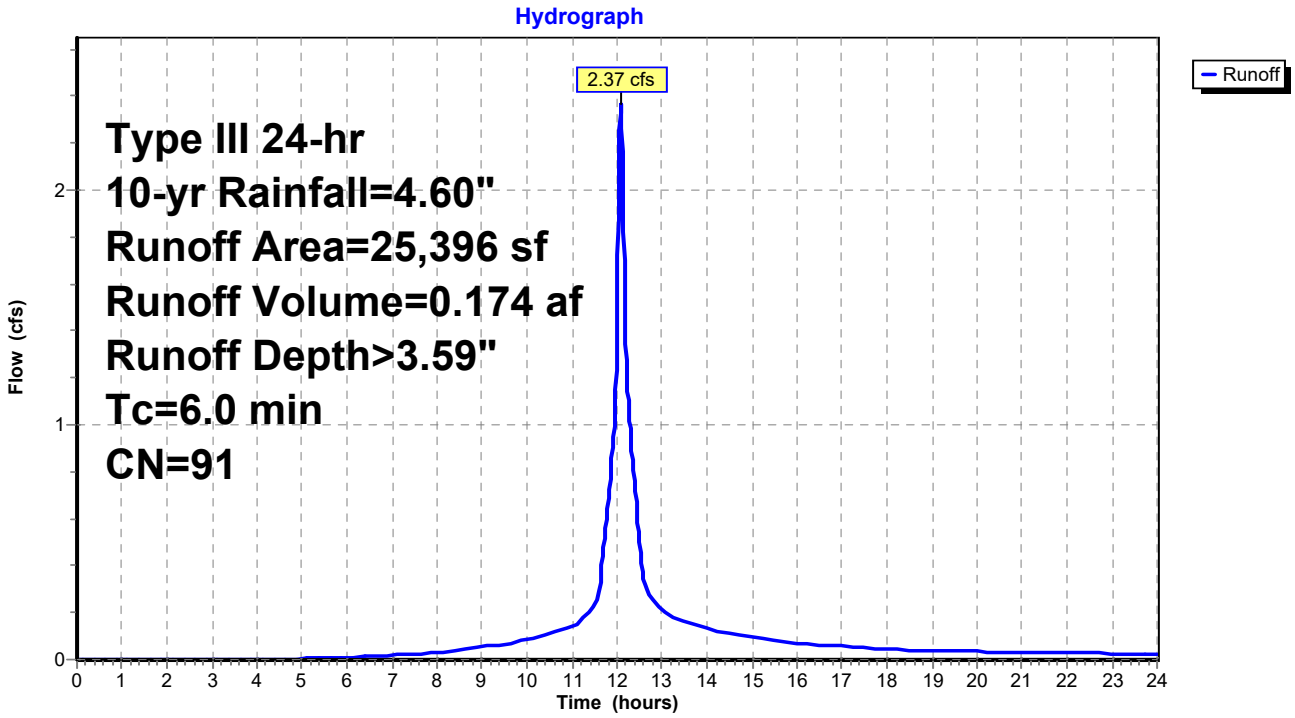
Runoff = 2.37 cfs @ 12.08 hrs, Volume= 0.174 af, Depth> 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.60"

Area (sf)	CN	Description
7,896	74	>75% Grass cover, Good, HSG C
17,500	98	Paved parking, HSG C
25,396	91	Weighted Average
7,896		31.09% Pervious Area
17,500		68.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1BS:



Summary for Subcatchment 1CS:

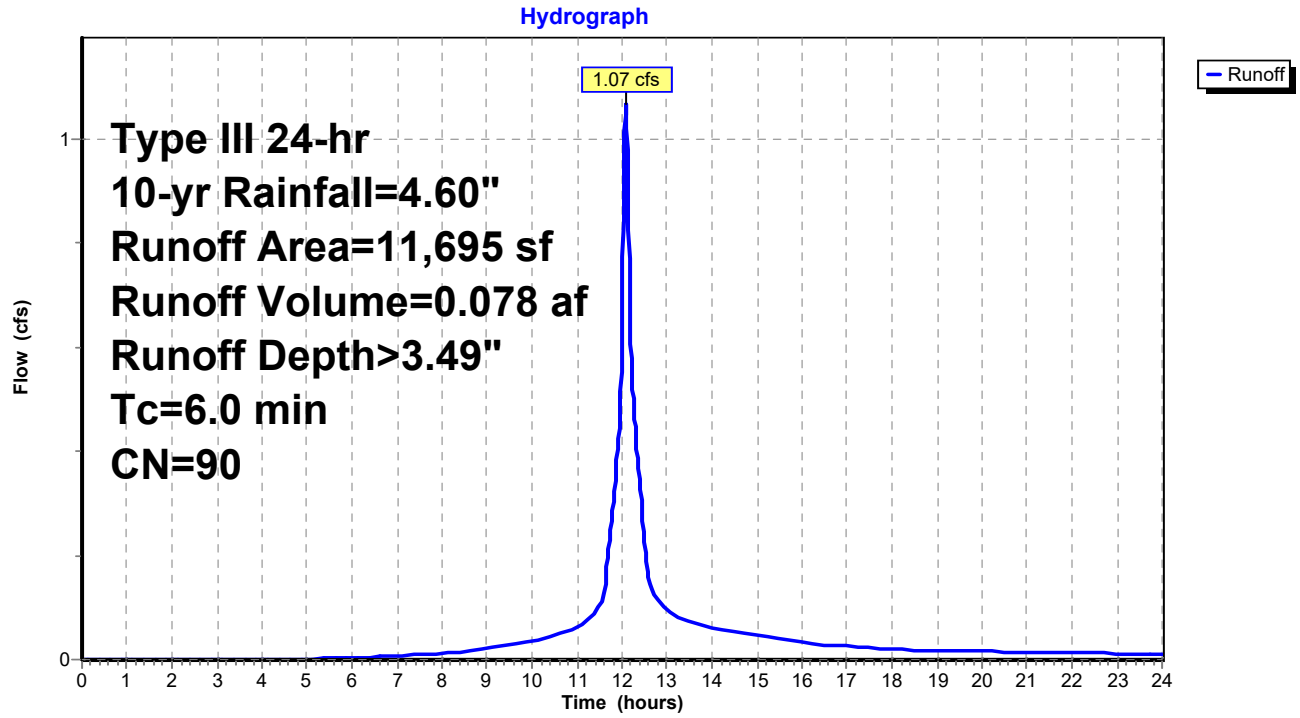
Runoff = 1.07 cfs @ 12.09 hrs, Volume= 0.078 af, Depth> 3.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.60"

Area (sf)	CN	Description
3,693	74	>75% Grass cover, Good, HSG C
8,002	98	Paved parking, HSG C
11,695	90	Weighted Average
3,693		31.58% Pervious Area
8,002		68.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1CS:

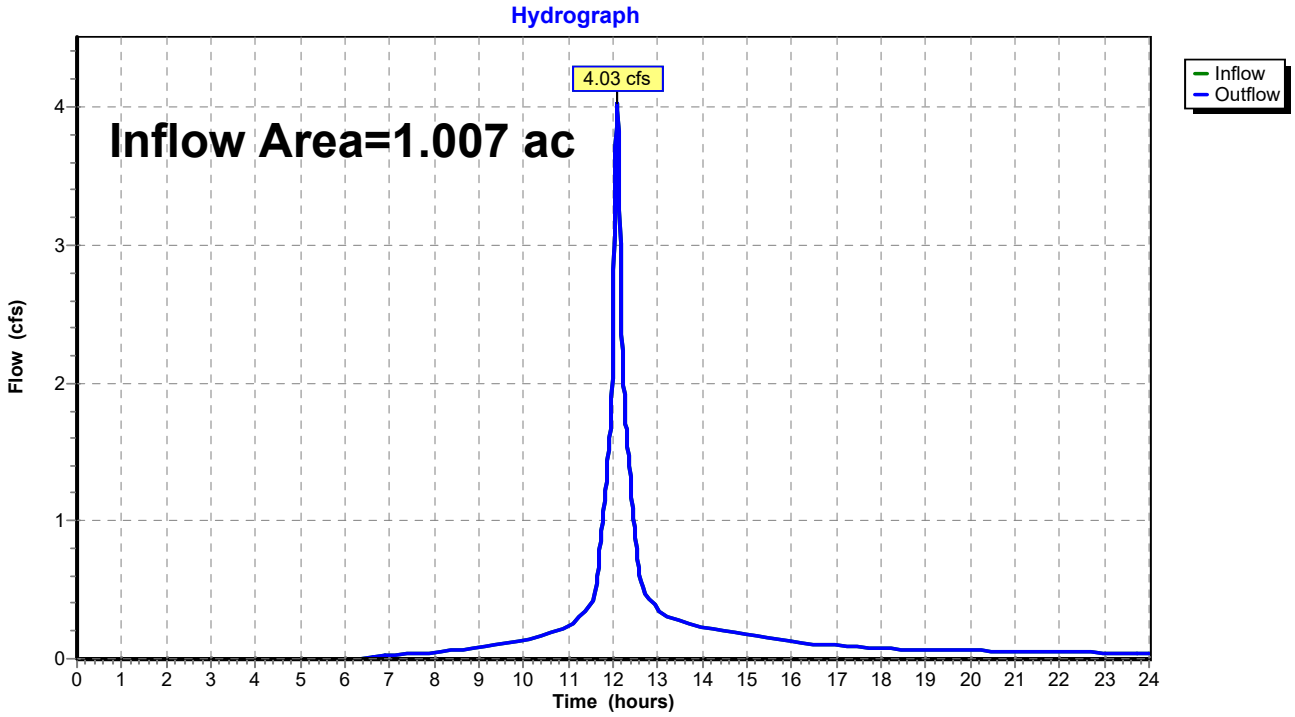


Summary for Reach 6R:

Inflow Area = 1.007 ac, 67.97% Impervious, Inflow Depth > 3.51" for 10-yr event
Inflow = 4.03 cfs @ 12.09 hrs, Volume= 0.294 af
Outflow = 4.03 cfs @ 12.09 hrs, Volume= 0.294 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach 6R:



Summary for Pond 4P: MH-1 Rim=273.50

Inflow Area = 0.851 ac, 68.76% Impervious, Inflow Depth > 3.54" for 10-yr event
Inflow = 3.43 cfs @ 12.09 hrs, Volume= 0.251 af
Outflow = 3.43 cfs @ 12.09 hrs, Volume= 0.251 af, Atten= 0%, Lag= 0.1 min
Primary = 3.43 cfs @ 12.09 hrs, Volume= 0.251 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 272.10' @ 12.09 hrs Surf.Area= 13 sf Storage= 21 cf
Flood Elev= 273.50' Surf.Area= 13 sf Storage= 38 cf

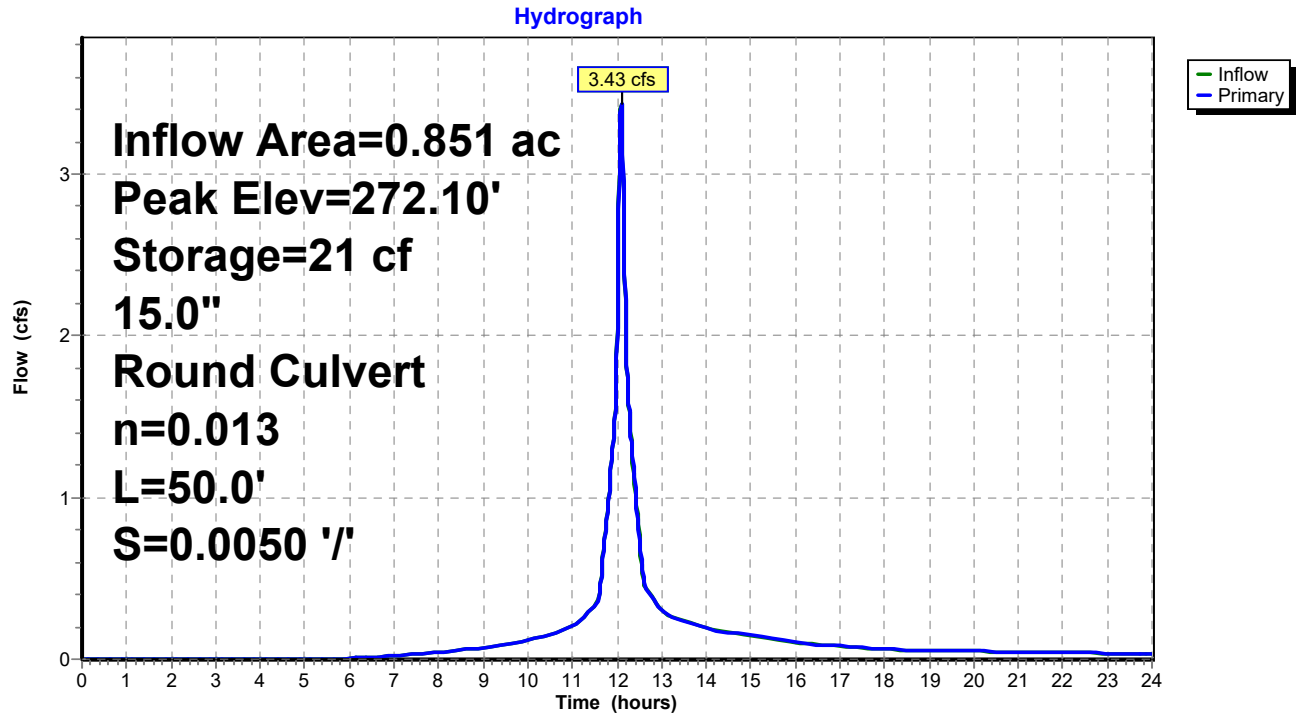
Plug-Flow detention time= 0.3 min calculated for 0.251 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (792.8 - 792.6)

Volume	Invert	Avail.Storage	Storage Description
#1	270.41'	38 cf	**4.00'D x 3.06'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	270.41'	**15.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 270.41' / 270.16' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.42 cfs @ 12.09 hrs HW=272.10' TW=271.56' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.42 cfs @ 2.79 fps)

Pond 4P: MH-1 Rim=273.50



Summary for Pond 5P: CB-1 Rim=272.66

Inflow Area = 1.007 ac, 67.97% Impervious, Inflow Depth > 3.52" for 10-yr event
Inflow = 4.03 cfs @ 12.09 hrs, Volume= 0.295 af
Outflow = 4.03 cfs @ 12.09 hrs, Volume= 0.294 af, Atten= 0%, Lag= 0.1 min
Primary = 4.03 cfs @ 12.09 hrs, Volume= 0.294 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 271.56' @ 12.09 hrs Surf.Area= 13 sf Storage= 43 cf
Flood Elev= 272.66' Surf.Area= 16 sf Storage= 57 cf

Plug-Flow detention time= 2.3 min calculated for 0.294 af (100% of inflow)
Center-of-Mass det. time= 1.0 min (794.3 - 793.4)

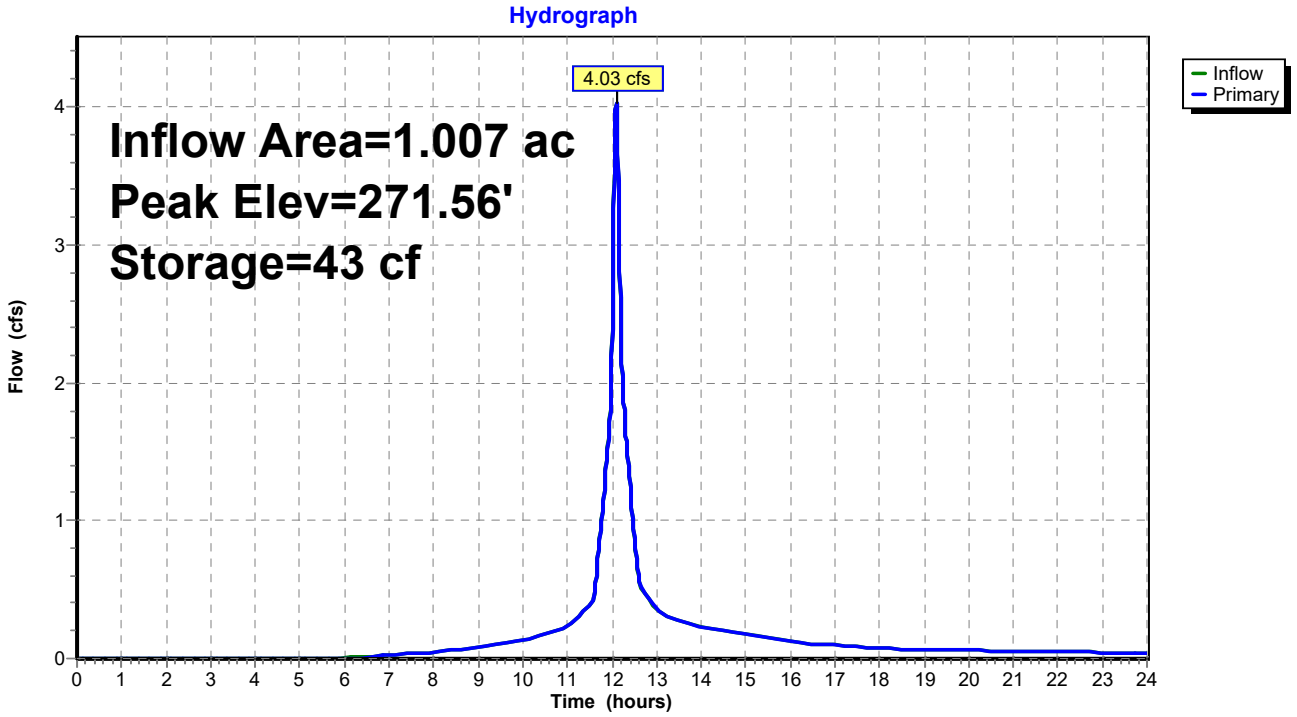
Volume	Invert	Avail.Storage	Storage Description
#1	268.16'	57 cf	**4.00'D x 4.50'H Vertical Cone/Cylinder**
#2	272.66'	75 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		132 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.66	3	0	0
272.91	600	75	75

Device	Routing	Invert	Outlet Devices
#1	Primary	270.16'	**15.0" Round Culvert** L= 31.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 270.16' / 270.00' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Primary	272.66'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.02 cfs @ 12.09 hrs HW=271.56' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 4.02 cfs @ 3.65 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 5P: CB-1 Rim=272.66



Summary for Pond 9P: CB-3 Rim=273.00

Inflow Area = 0.268 ac, 68.42% Impervious, Inflow Depth > 3.49" for 10-yr event
Inflow = 1.07 cfs @ 12.09 hrs, Volume= 0.078 af
Outflow = 1.07 cfs @ 12.09 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.5 min
Primary = 1.07 cfs @ 12.09 hrs, Volume= 0.077 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 272.24' @ 12.09 hrs Surf.Area= 13 sf Storage= 47 cf
Flood Elev= 273.00' Surf.Area= 16 sf Storage= 57 cf

Plug-Flow detention time= 8.4 min calculated for 0.077 af (99% of inflow)
Center-of-Mass det. time= 3.6 min (796.6 - 793.0)

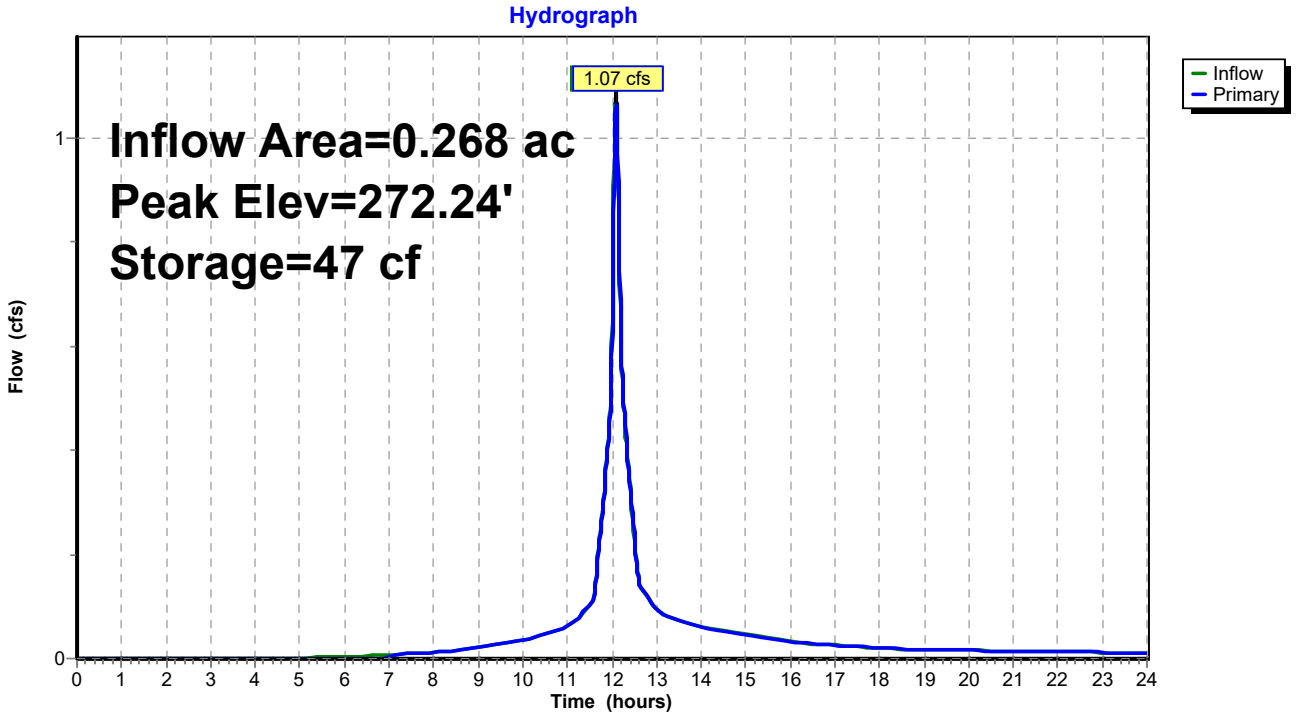
Volume	Invert	Avail.Storage	Storage Description
#1	268.48'	57 cf	**4.00'D x 4.52'H Vertical Cone/Cylinder**
#2	273.00'	72 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		129 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
273.00	3	0	0
273.16	900	72	72

Device	Routing	Invert	Outlet Devices
#1	Primary	270.48'	**12.0" Round Culvert** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 270.48' / 270.41' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	273.00'	**2.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.09 cfs @ 12.09 hrs HW=272.23' TW=272.10' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.09 cfs @ 1.39 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 9P: CB-3 Rim=273.00



Summary for Pond 10P: CB-2 Rim=272.92

Inflow Area = 0.583 ac, 68.91% Impervious, Inflow Depth > 3.59" for 10-yr event
Inflow = 2.37 cfs @ 12.08 hrs, Volume= 0.174 af
Outflow = 2.36 cfs @ 12.09 hrs, Volume= 0.174 af, Atten= 0%, Lag= 0.3 min
Primary = 2.36 cfs @ 12.09 hrs, Volume= 0.174 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 272.74' @ 12.09 hrs Surf.Area= 13 sf Storage= 54 cf
Flood Elev= 272.92' Surf.Area= 16 sf Storage= 56 cf

Plug-Flow detention time= 4.1 min calculated for 0.174 af (100% of inflow)
Center-of-Mass det. time= 1.8 min (790.8 - 789.0)

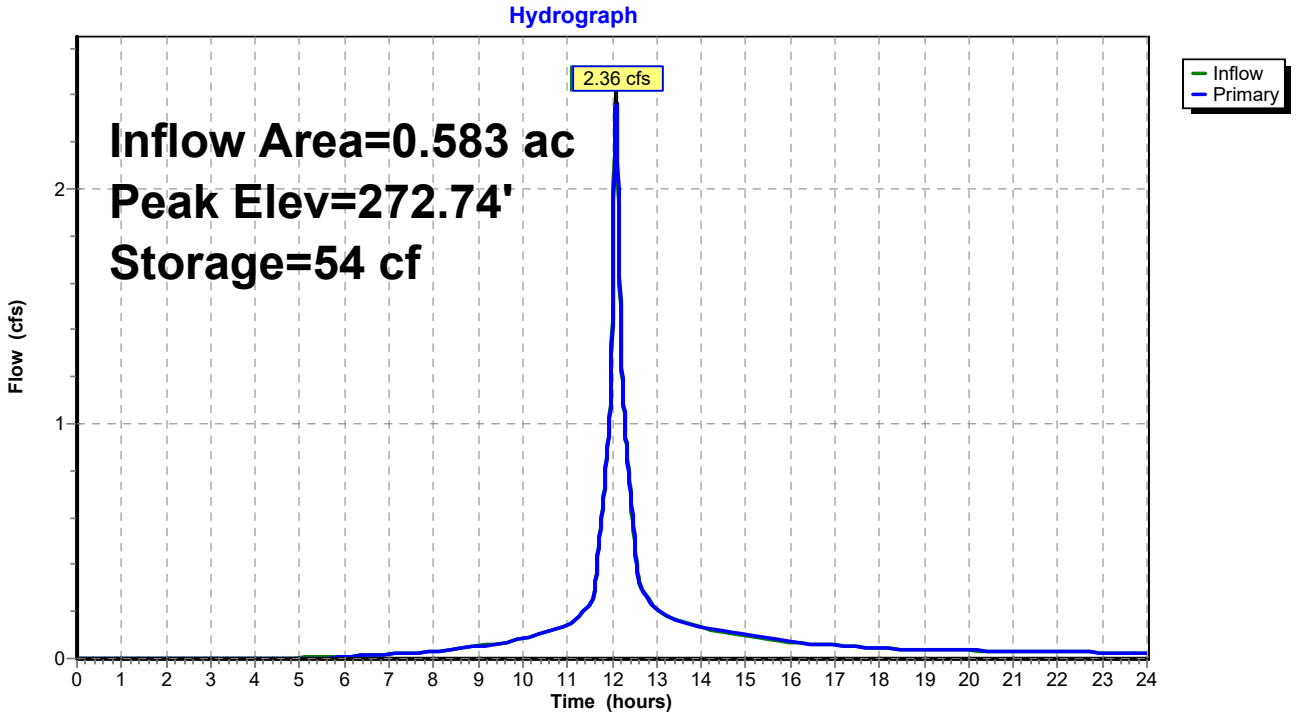
Volume	Invert	Avail.Storage	Storage Description
#1	268.47'	56 cf	**4.00'D x 4.45'H Vertical Cone/Cylinder**
#2	272.92'	87 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		142 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.92	3	0	0
273.00	120	5	5
273.16	900	82	87

Device	Routing	Invert	Outlet Devices
#1	Primary	270.47'	**12.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 270.47' / 270.41' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	272.92'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.38 cfs @ 12.09 hrs HW=272.74' TW=272.10' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 2.38 cfs @ 3.03 fps)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: CB-2 Rim=272.92



Summary for Subcatchment 1AS:

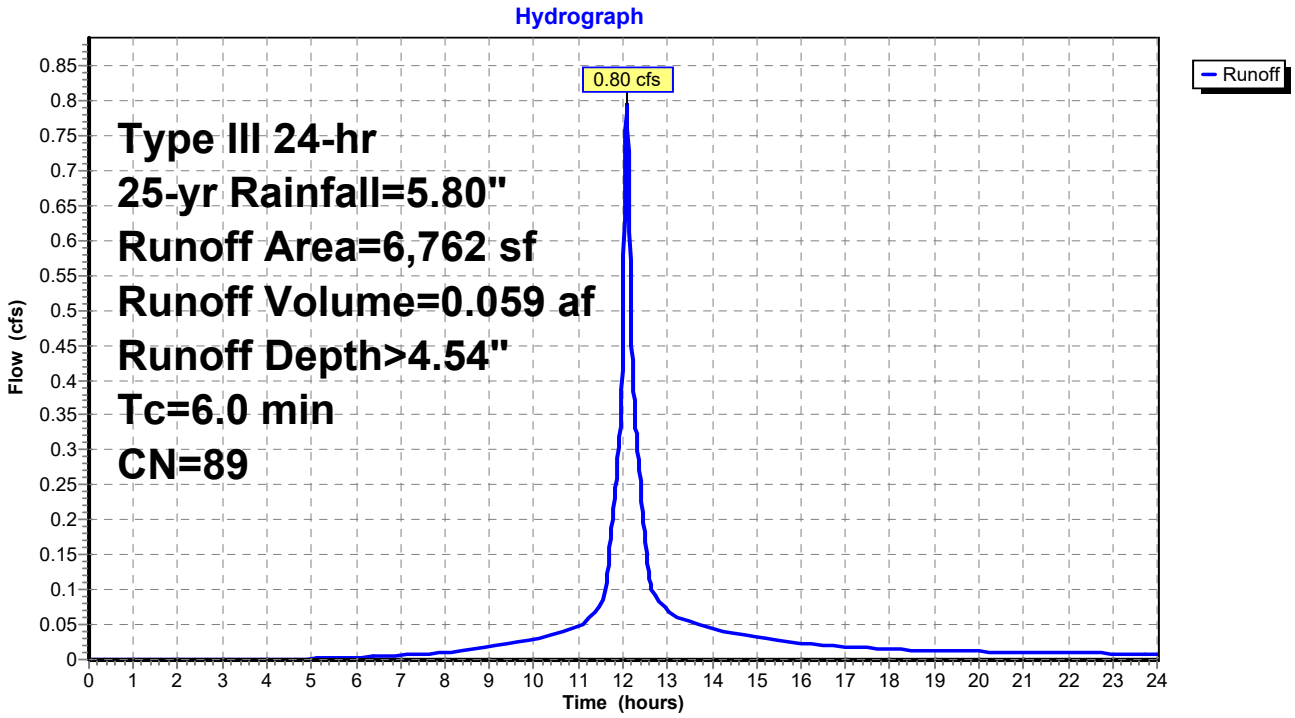
Runoff = 0.80 cfs @ 12.08 hrs, Volume= 0.059 af, Depth> 4.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.80"

Area (sf)	CN	Description
2,456	74	>75% Grass cover, Good, HSG C
4,306	98	Paved parking, HSG C
6,762	89	Weighted Average
2,456		36.32% Pervious Area
4,306		63.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1AS:



Summary for Subcatchment 1BS:

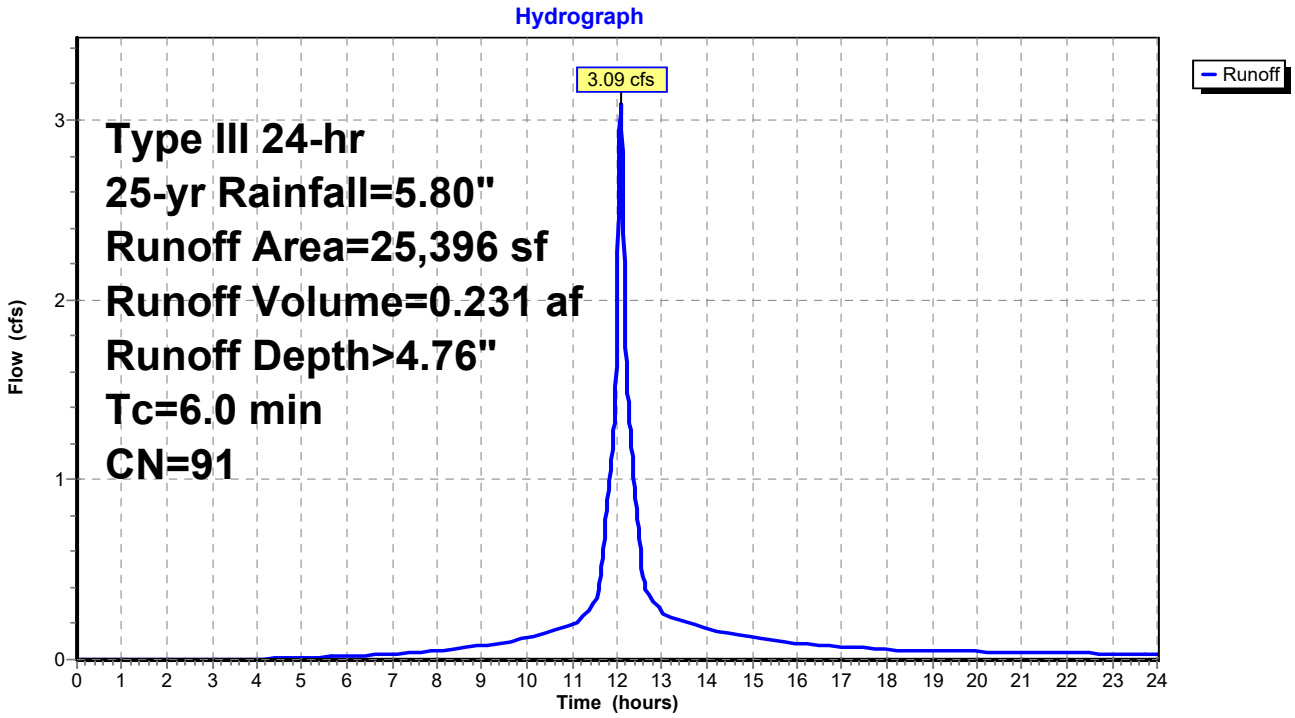
Runoff = 3.09 cfs @ 12.08 hrs, Volume= 0.231 af, Depth> 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.80"

Area (sf)	CN	Description
7,896	74	>75% Grass cover, Good, HSG C
17,500	98	Paved parking, HSG C
25,396	91	Weighted Average
7,896		31.09% Pervious Area
17,500		68.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1BS:



Summary for Subcatchment 1CS:

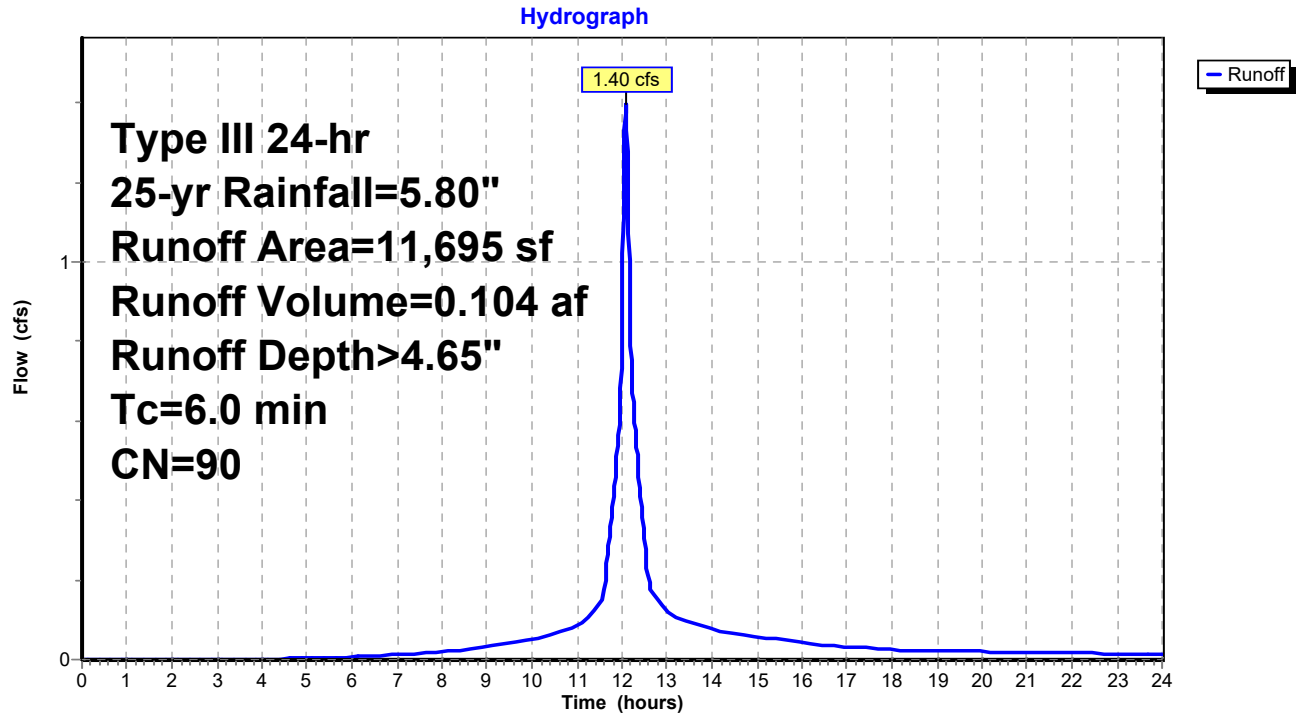
Runoff = 1.40 cfs @ 12.08 hrs, Volume= 0.104 af, Depth> 4.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.80"

Area (sf)	CN	Description
3,693	74	>75% Grass cover, Good, HSG C
8,002	98	Paved parking, HSG C
11,695	90	Weighted Average
3,693		31.58% Pervious Area
8,002		68.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1CS:

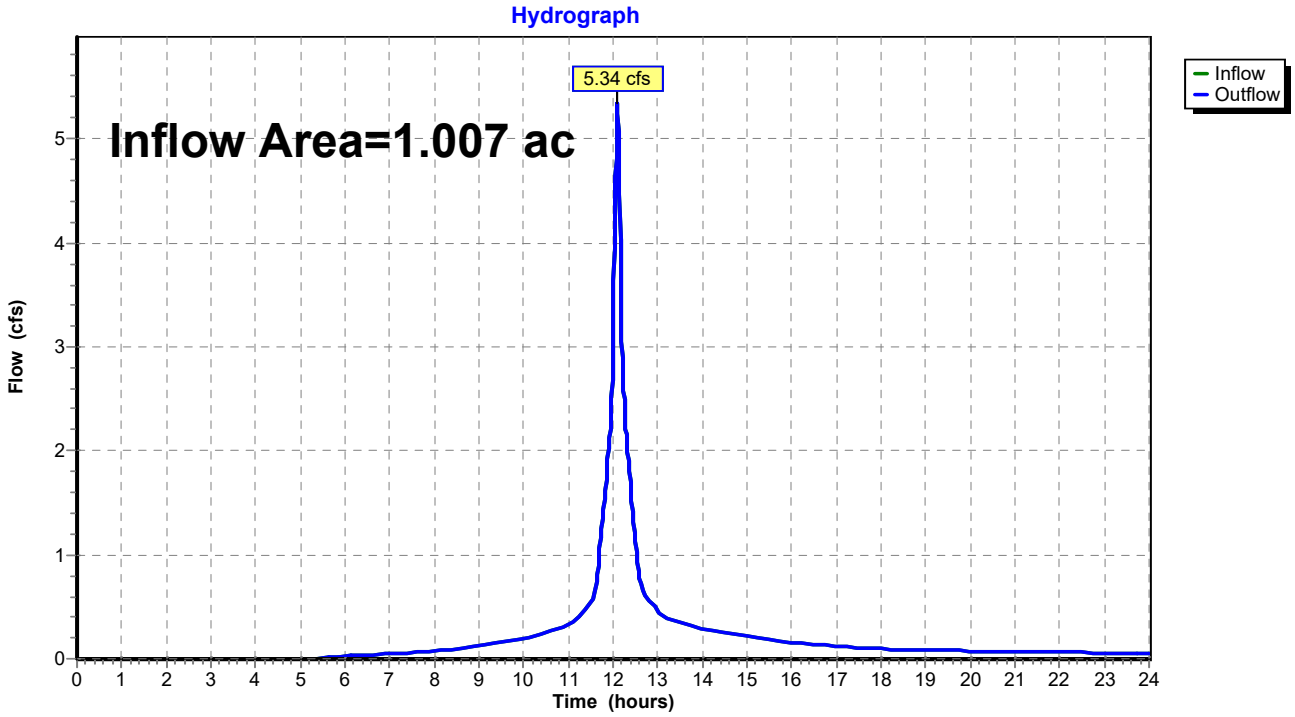


Summary for Reach 6R:

Inflow Area = 1.007 ac, 67.97% Impervious, Inflow Depth > 4.67" for 25-yr event
Inflow = 5.34 cfs @ 12.10 hrs, Volume= 0.392 af
Outflow = 5.34 cfs @ 12.10 hrs, Volume= 0.392 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach 6R:



Summary for Pond 4P: MH-1 Rim=273.50

Inflow Area = 0.851 ac, 68.76% Impervious, Inflow Depth > 4.71" for 25-yr event
Inflow = 4.59 cfs @ 12.10 hrs, Volume= 0.334 af
Outflow = 4.55 cfs @ 12.10 hrs, Volume= 0.334 af, Atten= 1%, Lag= 0.0 min
Primary = 4.55 cfs @ 12.10 hrs, Volume= 0.334 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 272.85' @ 12.11 hrs Surf.Area= 13 sf Storage= 31 cf
Flood Elev= 273.50' Surf.Area= 13 sf Storage= 38 cf

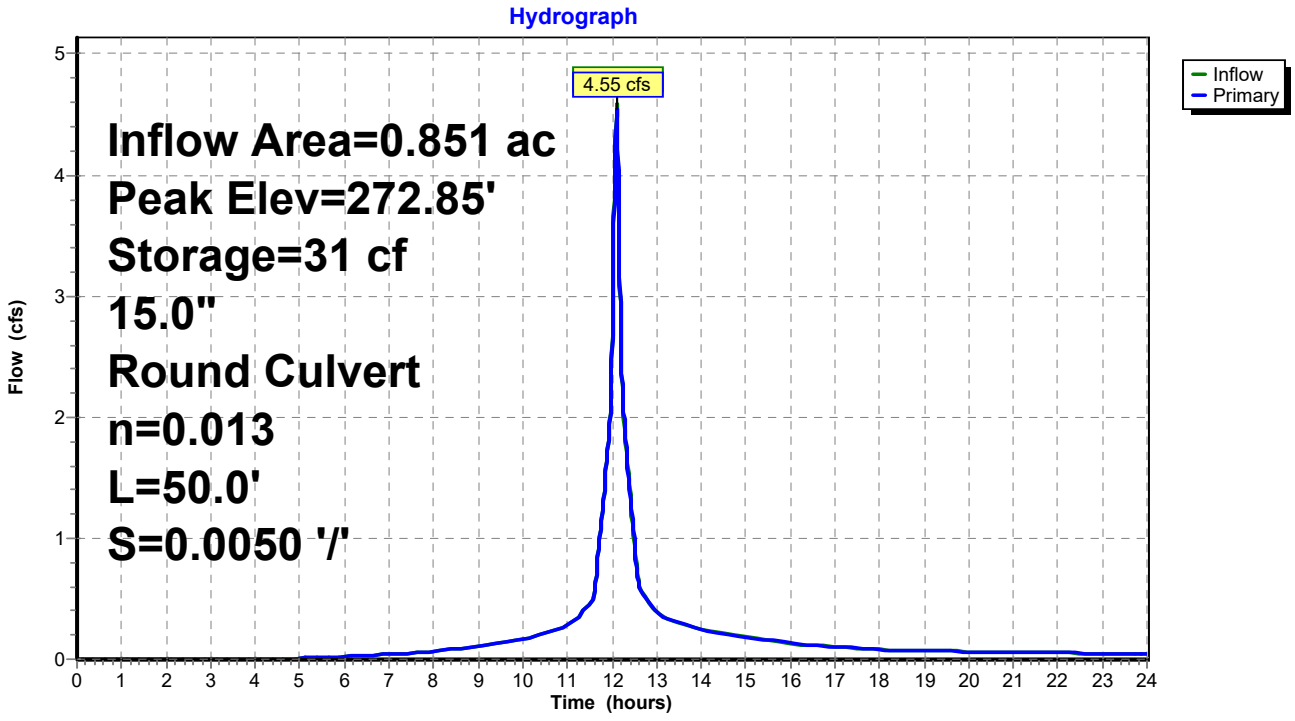
Plug-Flow detention time= 0.2 min calculated for 0.334 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (784.8 - 784.7)

Volume	Invert	Avail.Storage	Storage Description
#1	270.41'	38 cf	**4.00'D x 3.06'H Vertical Cone/Cylinder**

Device	Routing	Invert	Outlet Devices
#1	Primary	270.41'	**15.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 270.41' / 270.16' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.03 cfs @ 12.10 hrs HW=272.84' TW=272.09' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.03 cfs @ 3.28 fps)

Pond 4P: MH-1 Rim=273.50



Summary for Pond 5P: CB-1 Rim=272.66

Inflow Area = 1.007 ac, 67.97% Impervious, Inflow Depth > 4.68" for 25-yr event
Inflow = 5.33 cfs @ 12.10 hrs, Volume= 0.393 af
Outflow = 5.34 cfs @ 12.10 hrs, Volume= 0.392 af, Atten= 0%, Lag= 0.1 min
Primary = 5.34 cfs @ 12.10 hrs, Volume= 0.392 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 272.10' @ 12.10 hrs Surf.Area= 13 sf Storage= 49 cf
Flood Elev= 272.66' Surf.Area= 16 sf Storage= 57 cf

Plug-Flow detention time= 1.8 min calculated for 0.392 af (100% of inflow)
Center-of-Mass det. time= 0.8 min (786.3 - 785.4)

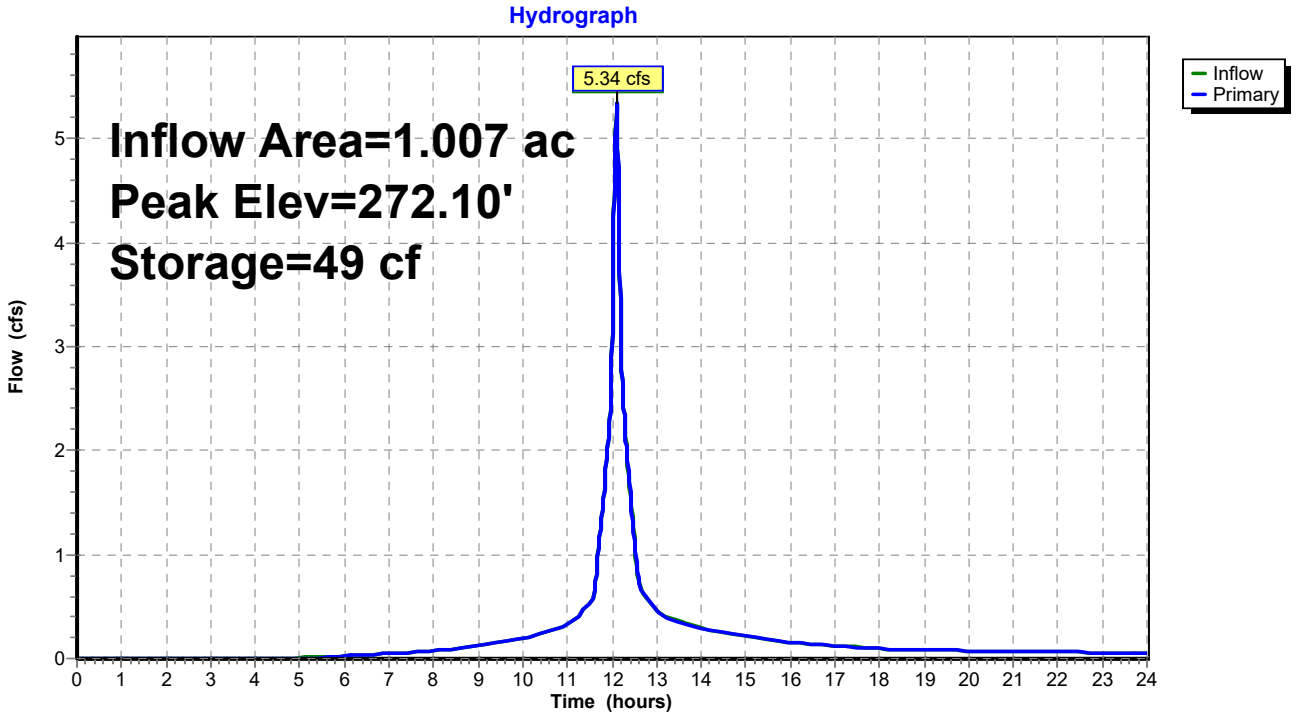
Volume	Invert	Avail.Storage	Storage Description
#1	268.16'	57 cf	**4.00'D x 4.50'H Vertical Cone/Cylinder**
#2	272.66'	75 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		132 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.66	3	0	0
272.91	600	75	75

Device	Routing	Invert	Outlet Devices
#1	Primary	270.16'	**15.0" Round Culvert** L= 31.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 270.16' / 270.00' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Primary	272.66'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.34 cfs @ 12.10 hrs HW=272.10' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.34 cfs @ 4.35 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 5P: CB-1 Rim=272.66



Summary for Pond 9P: CB-3 Rim=273.00

Inflow Area = 0.268 ac, 68.42% Impervious, Inflow Depth > 4.65" for 25-yr event
Inflow = 1.40 cfs @ 12.08 hrs, Volume= 0.104 af
Outflow = 1.44 cfs @ 12.10 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.6 min
Primary = 1.44 cfs @ 12.10 hrs, Volume= 0.103 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 273.02' @ 12.08 hrs Surf.Area= 155 sf Storage= 59 cf
Flood Elev= 273.00' Surf.Area= 16 sf Storage= 57 cf

Plug-Flow detention time= 6.8 min calculated for 0.103 af (99% of inflow)
Center-of-Mass det. time= 3.1 min (788.3 - 785.2)

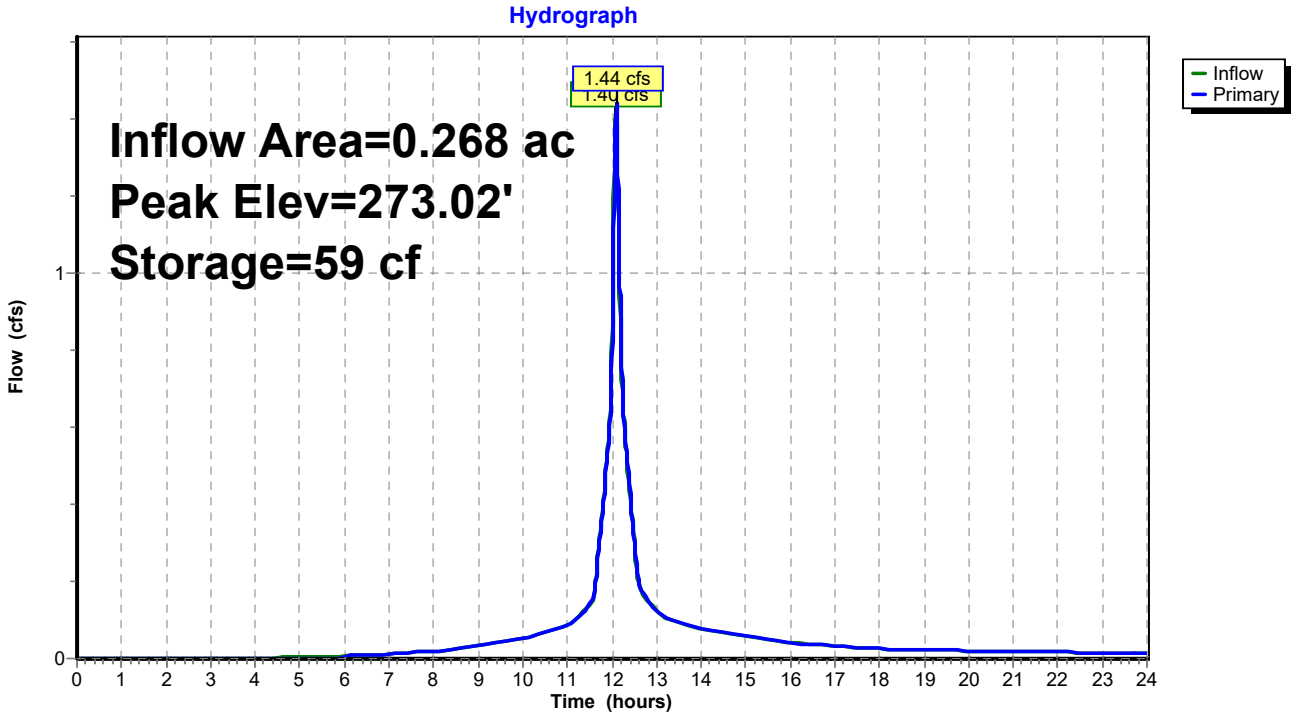
Volume	Invert	Avail.Storage	Storage Description
#1	268.48'	57 cf	**4.00'D x 4.52'H Vertical Cone/Cylinder**
#2	273.00'	72 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		129 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
273.00	3	0	0
273.16	900	72	72

Device	Routing	Invert	Outlet Devices
#1	Primary	270.48'	**12.0" Round Culvert** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 270.48' / 270.41' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	273.00'	**2.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.24 cfs @ 12.10 hrs HW=272.99' TW=272.82' (Dynamic Tailwater)
↑ **1=Culvert** (Inlet Controls 1.24 cfs @ 1.58 fps)
└ **2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: CB-3 Rim=273.00



Summary for Pond 10P: CB-2 Rim=272.92

Inflow Area = 0.583 ac, 68.91% Impervious, Inflow Depth > 4.76" for 25-yr event
Inflow = 3.09 cfs @ 12.08 hrs, Volume= 0.231 af
Outflow = 3.16 cfs @ 12.10 hrs, Volume= 0.231 af, Atten= 0%, Lag= 1.0 min
Primary = 3.16 cfs @ 12.10 hrs, Volume= 0.231 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 273.09' @ 12.09 hrs Surf.Area= 570 sf Storage= 91 cf
Flood Elev= 272.92' Surf.Area= 16 sf Storage= 56 cf

Plug-Flow detention time= 3.3 min calculated for 0.231 af (100% of inflow)
Center-of-Mass det. time= 1.6 min (783.1 - 781.5)

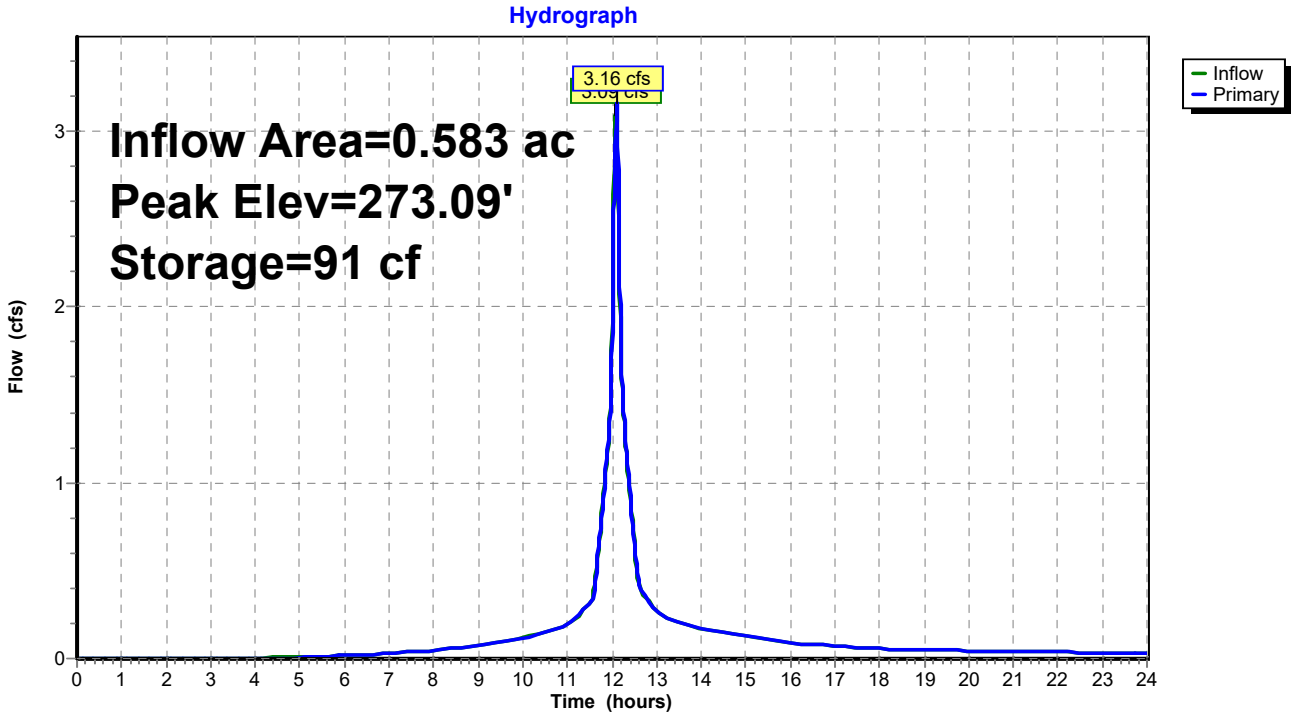
Volume	Invert	Avail.Storage	Storage Description
#1	268.47'	56 cf	**4.00'D x 4.45'H Vertical Cone/Cylinder**
#2	272.92'	87 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		142 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.92	3	0	0
273.00	120	5	5
273.16	900	82	87

Device	Routing	Invert	Outlet Devices
#1	Primary	270.47'	**12.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 270.47' / 270.41' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Primary	272.92'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.84 cfs @ 12.10 hrs HW=273.08' TW=272.84' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.47 cfs @ 1.87 fps)
2=Orifice/Grate (Weir Controls 1.37 cfs @ 1.33 fps)

Pond 10P: CB-2 Rim=272.92



APPENDIX G

Transportation Memo

Meadowview II
Site Plan and Final Major Subdivision Review Submission
16 Hancock Street
Gray, Maine

400 Commercial Street, Suite 404
Portland, ME 04101
207.772.2891

MEMO

Date: May 19, 2022

From: Brian Keniston, E.I.T

Review: Maureen McGlone, P.E

Re: Transportation Memorandum – Meadowview II Housing Development – 16 Hancock St, Gray, Maine

The purpose of this memorandum is to describe the existing and proposed conditions of the site to be developed, as they pertain to transportation and traffic. It is demonstrated that the traffic expected to be generated by this development will not necessitate a Traffic Movement Permit (TMP) from the Maine Department of Transportation (Maine DOT), and the estimation of trips generated, and their approximate distribution is presented, in addition to the required amount of parking spaces. Traffic analysis third party peer review was completed by TYLin, and comments were incorporated into the design. See attached document for comments form TYLin.

SUMMARY OF EXISTING & PROPOSED DEVELOPMENT

The existing development consists of three buildings with 20 one-bedroom housing units for seniors. There are 26 parking spaces in an existing lot with bidirectional circulation to/from the end of Hancock Street.

The proposed development will consist of one additional building with 26 one-bedroom housing units for seniors. A minimum of 15 additional parking spaces will be constructed to suit the new units and an option for an additional four spaces has been incorporated into the site design should demand warrant additional parking.

ESTIMATED TRIP GENERATION

The 10th edition of the Institute of Transportation Engineers Trip Generation Manual was used to estimate the number of trips generated by the proposed development, and to determine whether a traffic impact analysis (TIA) or Traffic Movement Permit (TMP) with MaineDOT would potentially be required. Land Use 252 – Senior Adult Housing – Attached was selected as the most appropriate land use code from this edition.

The proposed development results in a peak hour trip generation estimate of 12 trips, which is below 100 trips and thus does not necessitate a TIS or TMP from Maine DOT.

Dwelling Units	AM*	PM*	Weekday Total
26 Proposed	**12**	**5**	**83**

1. *Estimates are for the AM and PM peak hour of the generator, not the adjacent street network, and total of entering and exiting traffic.

PARKING

Per the Town of Gray's ordinance, senior housing requires 0.5 spaces per unit plus 0.1 guest spaces per unit for a total 0.6 spaces per unit. Applied to the total number of existing and proposed units (46), this development would require 28 parking spaces.

Avesta is proposing to provide 41 parking spaces, which is 0.89 spaces per unit. Space (and stormwater management accommodations) have been provided for 4 additional parking spaces that could be constructed if actual parking demand is greater than anticipated by the applicant based on their experience with other similar senior housing developments.

The table below presents the ratio of parking spaces to housing units for similar Avesta developments in southern Maine. Note that most developments have a lower ratio than is proposed at Meadowview, with utilization still generally below 100%. It is anticipated that the proposed number of parking spaces will be more than adequate.

Avesta Parking Study - Senior Properties (2016 Data)						
Senior Property	Town	Units	Vehicles	Ratio	No. Spots	Utilization
30 Birch Lane	Gorham	21	15	0.71	45	33%
Bayside East	Portland	20	8	0.40	18	44%
Butler School	Portland	39	13	0.33	13	100%
Cascade Brook	Saco	30	18	0.60	29	62%
Elwell Farms	Buxton	20	6	0.30	23	26%
Little Falls Landing	Windham	24	20	0.83	26	77%
New Marblehead 1	Windham	20	9	0.45	24	38%
New Marblehead 2	Windham	20	10	0.50	26	38%
New Marblehead 3	Windham	20	10	0.50	32	31%
Payson School	Portland	17	4	0.24	5	80%
Ridgewood	Gorham	20	12	0.60	42	29%
Stonecrest	Standish	37	29	0.78	54	54%
Unity Gardens	Windham	48	25	0.52	96	26%
Village Square	Gorham	48	35	0.73	53	66%
Average Parking Ratio				**0.55**		**50%**

CIRCULATION

As noted above, the existing parking lot is a dead end with bidirectional circulation to/from Hancock Street. The existing parking lot will be extended to provide additional parking for the proposed building.

The applicant met with the Gray Fire Department on site on November 4, 2021. The Department requested that the applicant construct an emergency access drive to connect the end of Hancock Street to the end of the proposed extension of the existing parking lot to better facilitate access for emergency response vehicles. It was agreed that a 12' wide one-way drive would be adequate for emergency response needs. This driveway along with turning template graphics for the requested fore truck movements is shown on the Site Plan.

The addition of this driveway creates a loop within the site at the end of Hancock Street. Residents and guests can enter through the bidirectional portion of the lot or enter via the new driveway. Delivery trucks and other emergency vehicles could also use the one way as an entrance, which may further alleviate resident concerns about congestion in the parking area.

The driveway meets the applicable design standards (401.13.17) and there is adequate sight distance (in excess of 155 feet) between the end of Hancock Street and the driveway exit.

TYLin

May 9, 2022

Kristen Schulze Muszynski
Community Planner
Town of Gray
24 Main Street
Gray, ME 04039

Subject: Avesta Meadowview II Gray, Maine – Traffic Peer Review

Hi Kristen – I have reviewed the site application materials and offer the following traffic peer review comments. The following are my responses to information provided in an email from John Mahoney, PE dated April 12, 2022.

1. Siting of crosswalks

   Crosswalks have been located to connect the existing and proposed walkways, sidewalks, and trails within the senior housing campus.
   Review Comment: I have reviewed the plans and the proposed crosswalks are acceptable. I would recommend that standard MUTCD warning signs be installed for the crosswalk leading to the Gray Trail.

2. Pedestrian access from buildings to site features (trash disposal, garden, gazebo)

   ADA compliant walkways have been designed to provide pedestrian access to all site features.
   Review Comment: The applicant should confirm that all crosswalks will be ADA compliant (provide design details) and note if detectible warning panels are required and if so, depict those on the plans.

3. Location of speedbumps

   Removeable speedbumps are provided in the existing parking aisles to slow traffic movement through the site. These could potentially be removed in the winter to facilitate plowing operations.
   Review Comment: I find this traffic calming strategy to be acceptable.

4. Width of sidewalks, connections between sidewalks and crosswalks, ADA accessibility

   Sidewalks are proposed to be 5'-wide throughout most of the proposed site to match the existing sidewalk widths. A 4'-wide utility walkway is proposed on the east side and behind the building to limit impacts to the adjacent

wetland. Crosswalks are provided to connect the sidewalk network within the senior housing campus.
Review Comment: I find the sidewalk design details to be acceptable. Although final review of sidewalk design details between the site and Hancock Street are pending.

5. Proximity of other site elements to sidewalks (with a view toward allowance for safe passage when snowbanks are present)

   A buffer is provided around proposed sidewalks to maintain safe passage during the winter.
   Review Comment: There are some sidewalk segments where a buffer does not provide separation (e.g. in front of the new building). Additionally, the details for the new sidewalk to Hancock Street are not provided. The applicant likely has a winter maintenance program and should note that this includes timely plowing of sidewalks. I would suggest that the applicant be responsible for plowing the new sidewalk to Hancock Street.

6. Overall space and allowances for snow removal/temporary parking for cars to facilitate clearing of parking lot

   Snow removal areas are shown on the site plan and the applicant anticipates the delineated areas will be sufficient for snow removal. Avesta has extensive experience with snow removal and many properties that they maintain have more constrained sites.
   Review Comment: I find the snow storage areas to be reasonable.

7. Traffic circulation/ direction of traffic into/out of site and routing of traffic through parking lot

   The direction of traffic through the proposed one-way emergency access road has been revised to one-way in. The existing and proposed parking aisles (24' wide minimum) will be two-way. This configuration results in a counterclockwise circulation pattern that will allow passengers being dropped off right in front of the entrance to the new building. Proposed signage and striping is shown on the site plan.
   Review Comment: The suggested traffic circulation plan is acceptable.

8. Safe drop-off of residents – (The proposed clockwise circulation would have van and auto passengers being dropped off on the OPPOSITE side of the front entry and crossing back over the main drive to enter the building.)

   The circulation has been transitioned to counterclockwise (see number 7).

Review Comment: The proposed circulation plan addresses this issue.

9. Input regarding impact of one-way or two-way traffic on section of road behind existing building (currently proposed as one-way, exit only)

   See number 7 above.
   Review Comment: As noted the traffic circulation plan is acceptable.

10. Siting and shape of parking island

    A landscaped parking island is proposed at the entrance of the new parking area that will accommodate the turning movements of passenger cars and emergency vehicles.
    Review Comment: The proposed parking lot islands are acceptable. It should be noted that plantings shall not obstruct sight lines to and from the crosswalk for pedestrians.

11. Turning radius allowances

    Turning radii have been provided to accommodate emergency vehicles in accordance with the Gray Fire Department requirements. The turning template graphics on the site plan are based on the Gray Fire Department's ladder truck.
    Review Comment: The vehicle turning template indicates the vehicle will track off the pavement at the entry to the 12-foot one-way drive. Adjustments should be incorporated.

12. Public safety accessway: width, signage "no parking - for emergency vehicle use only", conceptual use

    Based on onsite discussions with Gray Fire Department, a 12'-wide, one-way public safety access drive is shown on the site. "No parking" signage will be provided to prevent parking.
    Review Comment: Similar to #11, the vehicle template depicts the vehicle tracking off the pavement.

13. Width of existing parking lot aisle width (residents raised concerns about the ability to accommodate delivery or public safety vehicles on site without blocking throughway)

    The existing parking lot aisle width varies between 25' and 28' feet wide. The proposed parking lot aisle is 24' feet wide and meets the performance standards of the Town of Gray Ordinances. The fire truck turning template

graphics shown on the site plan demonstrate that smaller delivery vehicles can more easily make the same movements.
Review Comment: I find the proposed aisle widths to be acceptable.

14. Access to and from the site

Adequate access to and from the site is provided with the proposed layout.
Review Comment: The applicant has provided a plan at the Avesta Drive and Hancock Street intersection which documents acceptable sight distance is provided . It also included the installation of a STOP sign and removal of the existing YIELD sign. I find the plan to be acceptable and thus find access to and from the site to be acceptable.

Please contact me if you have any questions.

T.Y. LIN INTERNATIONAL



Thomas A. Errico, PE
Senior Associate / NE Traffic Engineering Director

APPENDIX H

Density Letter

Meadowview II
Site Plan and Final Major Subdivision Review Submission
16 Hancock Street
Gray, Maine

RANSOM
Consulting, LLC

Consulting
Engineers
and Scientists

May 17, 2022

Project 191.06051

Doug Webster
Municipal Complex
24 Main St.
Gray, ME 04039

RE: Meadowview II | Density, Ownership & Zoning Summary

On behalf of Avesta Housing, Ransom has developed this letter to describe why we believe that this project is compatible with the existing zoning, based on Avesta's proposed ownership structure and considering the attached density calculation.

The following lots (Map 44: Lot 405-43, Map 43: Lot 405-39, the Narrow-Gauge Railroad corridor, and a portion of the Hancock Street ROW to be discontinued) will be combined into a single parcel. The entire parcel will be owned by a condominium association. The association will have two units, each with a share of ownership.

The first unit (Unit 1) will consist of the 20 existing senior housing apartments. These units are currently owned by Gray Senior Housing.

The second unit (Unit 2) will consist of the 26 proposed senior housing apartments. Unit 2 will be owned by a for-profit entity, that will be created by Avesta so that the proposed development is eligible for tax credit financing. Condominium documents will be developed to clarify ownership and responsibilities for the two units.

The funding and financing requirements require that ownership of Unit 1 and Unit 2 must remain separate.

The density calculation to determine the allowable number of units is based on land area of the entire parcel to be owned by the proposed condominium association (674,815 SF), subtracting areas as required by Town ordinance (156,426 SF), deducting ten (10) percent of the remaining area for Roads and ROWs, and dividing by the required land area senior housing per unit (Net Area / Min. Area per Dwelling Unit). Unsuitable land, as defined in the Gray Subdivision Ordinance Chapter 401.13.18, includes reductions for areas containing wetlands, poorly drained soils, greater than 25% slopes, and other restricted land uses. Please refer to attached spreadsheet. Soil mapping has been provided by Albert Frick Associates, please refer to attached soil map and report.

400 Commercial Street, Suite 404, Portland, Maine 04101, Tel (207) 772-2891, Fax (207) 772-3248
Pease International Tradeport, 112 Corporate Drive, Portsmouth, New Hampshire 03801, Tel (603) 436-1490
12 Kent Way, Suite 100, Byfield, Massachusetts 01922-1221, Tel (978) 465-1822
60 Valley Street, Building F, Suite 106, Providence, Rhode Island 02909, Tel (401) 433-2160
2127 Hamilton Avenue, Hamilton, New Jersey 08619, Tel (609) 584-0090

www.ransomenv.com

Doug Webster
Municipal Complex

Calculation	
Lot Area:	15.5 acres or 674,815 SF
Lot Area Unsuitable for Development:	3.59 acres or 156,426 SF
Remaining Net Residential Area:	11.9 acres or 518,389 SF
10% Reduction of Remaining Area:	10.7 acres or 466,550 SF
Minimum Area per Dwelling Unit:	10,000 SF
Density of Development:	**46 Units**

The development proposes 26 additional units bringing the total unit to 46, which is within the allowed density as calculated above.

Please don't hesitate to contact me if you have any questions or concerns.

Sincerely,

RANSOM CONSULTING, LLC.



Maureen McGlone, P.E.
Project Manager



Project Engineer

Net Residential Area Calculations

		Area (sf)	Deduction (sf)	Total Area (sf)
	401.13.18.D.2 100% Deduction			
A	Slopes 25% or steeper;	20,416	100%	20,416
B	Land which is not able to be practically accessible, usable, or unavailable due to its location and/or existing site condition(s) such as being cut off from the main parcel;	0	100%	0
C	All land areas within the 100-year floodplain FEMA FIRM Maps regardless of any other classification;	0	100%	0
D	Land below the normal high water mark of any waterbody;	0	100%	0
E	Land below the upland edge of freshwater wetlands except Forested Wetlands that are to remain undeveloped and not located in a 100-year floodplain (see 401.13.18.D.3.c);	0	100%	0
F	All lands that have been determined to be a liquidation harvesting per standards established in Title 30-A, M.R.S., Section 4404, subsection 20;	0	100%	0
G	Unusable areas larger than 1,500 sq. ft. such as significant rock outcroppings, etc.;	0	100%	0
H	Portions of gravel pit(s) that will not be reclaimed when the project is complete; additional sureties may be required in such instances;	0	100%	0
I	Poorly drained soils unless located in a Forested Wetland that are to remain undeveloped and not located in a 100-year floodplain (see 401.13.18.D.3.c);	66,758	100%	66,758
J	Very poorly drained soils.	0	100%	0
	401.13.18.D.3 50% Deduction			
A	Somewhat poorly drained soils;	25,584	50%	12,792
B	Land designated as Resource Protection that remain undeveloped;	0	50%	0
C	Forested Wetlands that remain undeveloped not located in a 100-year floodplain;	112,921	50%	56,460
D	Boundaries of the areas on the parcel, to remain undeveloped, containing the following with field verification as necessary: (i) significant wildlife habitat as mapped by the Maine Department of Inland Fisheries and Wildlife (IF&W); (ii) significant wildlife habitat as determined by the applicant in consultation with the Maine IF&W; (iii) endangered botanical resources as mapped by the Maine Natural Areas Program; (iv) endangered botanical resources as determined by the applicant consultation with the Maine Department of Conservation.	0	50%	0

Total Deducted Area =	156,426	SF
Parcel A	313,141	SF
Parcel B	22,413	SF
Parcel B1	7,092	SF
Parcel C	172,949	SF
Parcel C1	89,507	SF
Narrow Gauge RR	43,941	SF
Town ROW off Hancock	25,772	SF
ınd Area (A, B, C, NGRR, Town ROW) =	674,815	SF
Remaining Area (403.13.18.D.2 and 3 deducted from total parcel) =	518,389	SF

401.13.18.D.5 Roads & ROW's deduction

After the total of both 401.13.18.D.2 and 3 are deducted from the total parcel, the remaining area shall be deducted by ten (10) percent or the actual area of the parcel utilized for roads, parking, and proposed or future vehicular rights-of-way, whichever is greater.

10% Deduction of Remaining Area	466,550	SF
Minimum Area per Dwelling Unit =	10,000	SF
Net Residential Density =	46.7	Units
	46	**Units**

Albert Frick Associates, Inc
Environmental Consultants
731 Foss Road Limerick, ME 04048
(207) 839-5563 FAX (207) 839-5564
www.albertfrick.com info@albertfrick.com

AVESTA HOUSING SOIL NARRATIVE REPORT

LOCATION: 16 Hancock Street, Gray

DATE: Soil profiles observed March 1st, 2021.

BASE MAP: Contour map 1 foot intervals, scaled 1"=60', provided by Ransom Consulting Inc.

GROUND CONTROL: Test pits located by GeoXT sub meter GPS unit .

THE SOIL MAPPING CONFORMS WITH HIGH-INTENSITY CLASS "A" SURVEY STANDARDS AND THE TOWN OF GRAY'S SOIL MAPPING SUBDIVSION STANDARDS PER SECTION 401.13.18.C.

Class A - Soil Survey

1. Mapping units of 1/8 acre or greater.
2. Scale of 1" = 100' or larger.
3. Up to 25% inclusions in mapping units of which no more than 15% may be dissimilar soils.
4. Ground control - base line and test pits located by land surveyor.
5. Base map with 2' contour lines.

Subdivsion Standards per Section C.3.B - Soil Survey

Three (3) acre maximum inclusion size for soils of the following drainage classifications: Excessively Drained, Somewhat Excessively Drained, Well Drained and Moderately Well Drained.
(ii) One-half (1/2) acre maximum inclusion size for soils of the following drainage classifications: Somewhat Poorly Drained, Poorly Drained, and Very Poorly Drained.

Subdivsion Standards per Section C.3.C - Soil Survey

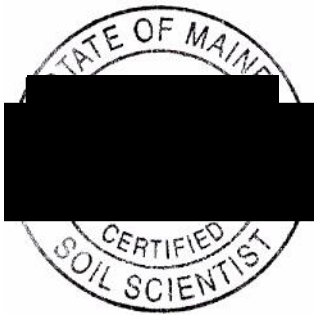
(i) Requisite portions of the Natural Resources Conservation Service (NRCS) published soil survey with field verification of soil type boundaries for the following drainage classifications: Excessively Drained, Somewhat Excessively Drained, Well Drained, and Moderately Well Drained. The submitted soils documentation from the CSS must be adjusted to reflect the information obtained from field verification.
(ii) Two (2) acre maximum inclusion size for Poorly Drained and Very Poorly Drained soils which may be combined.
(iii) Two (2) acre maximum inclusion size for Somewhat Poorly Drained soils.

This was prepared for a commercial housing development on private septic and public water.

The accompanying soil profile descriptions, soil map and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists.

[redacted] _____ C.S.S. #66, S.E. ___4_/__16_/__2021__

Albert Frick Date



BRAYTON
(Aeric Haplaquepts)

SETTING

Parent Material: Compact loamy glacial till.

Landform: Depressions and toeslopes of glaciated uplands.

Position in Landscape: Lowest positions on landform.

Slope Gradient Ranges: **(A)** 0-3% **(B)** 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Poorly drained, with a perched water table 0 to 1.0 feet beneath the soil surface from November through May or during periods of excessive precipitation.

Typical Profile Description:

Surface layer:	Very dark grayish brown sandy loam, 0-5"
Subsurface layer:	Grayish brown sandy loam, 5-15"
Subsoil layer:	Olive gray fine sandy loam, 15-24"
Substratum:	Olive sandy loam, 24-65"

Hydrologic Group: Group D

Surface Run Off: Moderate to moderately rapid.

Permeability: Moderate in solum, moderately slow or slow in dense substratum.

Depth to Bedrock: Deep, greater than 40 inches.

Hazard to Flooding: None

Erosion Factors: K: .24 - .32

INCLUSIONS
(Within Mapping Unit)

Similar: Colonel, Westbury,

Dissimilar: Naskeag, Peacham

USE AND MANAGEMENT

Soil limitations for Proposed Use: Soil limiting factor is high groundwater table. Brayton is hydric (wetland) soil. Areas within the Brayton soil series mapping unit may be jurisdictional wetland, if hydrology and wetland vegetation co-exist, and subjected to wetland impact regulations. Roadway and associated development will need to avoid these areas which are designated wetlands, or properly addressed with the wetland impact requirements.

CROGHAN
(Aquic Haplorthods)

SETTING

Parent Material: Derived from outwash or deltaic sand.

Landform: Occupy outwash terraces and sand plains.

Position in Landscape: Usually are found in intermediate or upper positions in the landscape.

Slope Gradient Ranges: **(B)** 3-8% **(C)** 8-20%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Moderately well-drained, with an apparent water table 1.5 to 2.0 feet below the soil surface from November through May. The water table fluctuates from approximately 1.5 feet during prolonged wet periods to depths greater than 4 feet in dry seasons.

Typical Profile Description:

Surface layer:	Dark brown sand, 0-7"
Subsurface layer:	Strong brown/yellowish brown, brown & pale brown sand with mottles below 13", 7-52"
Substratum:	Grayish brown loose sand, 52-60"

Hydrologic Group: Group B

Surface Run Off: Slow to medium

Permeability: Rapid to very rapid in the lower horizons.

Depth to Bedrock: Deep, greater than 40".

Hazard to Flooding: None

INCLUSIONS
(Within Mapping Unit)

Similar: Adams

Dissimilar: Nicholville, Naumburg, Lyman,

USE AND MANAGEMENT

.**Stormwater Design:** The Croghan soil is moderately well drained. The groundwater table is typically greater than 15 inches, but less than 40 inches in the spring and/or periods of heavy precipitation.The expected soil permeability is 6 to 20 inches/hr in the top 0-12 inches, and 20 inches/hr below 12 inch.

MADE LAND

SETTING

Parent Material: Variable

Landform: Variable

Position in Landscape: Variable

Slope Gradient Ranges: **(A)** 0-3% **(B)** 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: None assigned

Typical Profile Description:

Surface layer:) Typically this map unit
Subsurface layer:) consists of areas
Subsoil layer:) excavated and reworked
Substratum:) by man, then smoothed.

Hydrologic Group: None assigned

Surface Run Off: Variable

Permeability: Variable

Depth to Bedrock: Variable

Hazard to Flooding: None

INCLUSIONS
(Within Mapping Unit)

Similar: Filled Land, Croghan

Dissimilar: Small 'made' depressions that contain standing water or have other drainage implications. These may be caused by compaction by vehicular traffic, which is not synonymous with seasonal water tables.

USE AND MANAGEMENT

This map unit consists of areas reworked by man, so that the soils are no longer taxonomically classifiable. Limiting factor for development is soil drainage, though somewhat difficult to determine in these map units. This map unit usually has sandy soil material over the underlying finer textured original soils (silty and silty clay).

USE AND MANAGMENT

For stormwater management: The limiting factor for building site development is wetness due to the presence of a groundwater table. Naumburg (poorly drained) may be classified as wetlands, based on the combined consideration of hydric conditions hydrology, and vegetation. Expected permeabilities are expected to be 2-6 inches per hour in the upper 6", and 6-20 inches per hour at depths of 6"-60".

NAUMBURG
(Aeric Haplaquods)

SETTING

Parent Material: Derived from outwash, stratified drift and deltaic sediments.

Landform: Usually occupies low sand plains and terraces.

Position in Landscape: Naumburg soil is found in the lower positions of landscape.

Slope Gradient Ranges: **(A)** 0-3% **(B)** 3-8% **(C)** 8-20%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Somewhat poorly to poorly drained, with an apparent water table 0 to 1.5 feet below the soil surface from November through May. The water table fluctuates from 0 feet during prolonged wet periods to depths greater than 1.5" in dry seasons.

Typical Profile Description:

Surface layer:	Black organic, 6" thick
Subsurface layer:	Reddish gray loamy sand, 0-6"
Subsoil layer:	Mottled dark reddish brown, dark brown, and yellowish brown sand, fine sand or loamy sand, 6-30"
Substratum:	Light brownish gray sand, 30-60"

Hydrologic Group: Group D

Surface Run Off: Very slow

Permeability: Rapid

Depth to Bedrock: Deep, greater than 40".

INCLUSIONS
(Within Mapping Unit)

Similar: Au Gres, Finch (with cementation), Enosburg (Swanton), Roundabout

Dissimilar: Searsport (in microdepressions)

USE AND MANAGEMENT

Development with subsurface wastewater disposal: The limiting factor for building site development is wetness due to the presence of a groundwater table. Proper foundation drainage or site modification is recommended. Portions of this map may be suitable for subsurface wastewater disposal, where the depth to limiting factor is greater than 12" from the existing soil surface outside shoreland zone areas. Naumburg (poorly drained) may be classified as wetlands, based on the combined consideration of hydric conditions hydrology, and vegetation.

NICHOLVILLE (S.W.P.)

SETTING

Parent Material: Lacustrine material having a high content of silt and fine sand.

Landform: Commonly found on lake plains and upland till plains that have a mantle of water-deposited silt or very fine sand.

Position in Landscape: Intermediate portion of landscape feature.

Slope Gradient Ranges: **(B)** 3-8% **(C)** 8-20% **(D)** 20%+

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Nicholville (S.W.P.) is somewhat poorly drained, with a perched water table 0.5 to 1.5 feet below the soil surface from November through May and during periods of heavy precipitation.

Typical Profile Description:

Surface layer:	Very dark grayish brown silt loam, 0-10"
Subsurface layer:	Dark yellowish brown silt loam, 10-13"
Subsoil layer:	Yellowish brown and grayish brown very fine sandy loam, 13-18"
Substratum:	Grayish brown loamy very fine sand, 18-70"

Hydrologic Group: Group D

Surface Run Off: Medium

Permeability: Moderate throughout profiles.

Depth to Bedrock: Very deep, greater than 60".

Hazard to Flooding: None

INCLUSIONS
(Within Mapping Unit)

Similar: Nicholville, Naumburg (S.W.P.), Lamoine

Dissimilar: Roundabout, Scantic,

USE AND MANAGEMENT

Development with stormwater: Nicholville (SWP) is a somewhat poorly drained soil exhibiting a seasonal high groundwater table 1.0 to 1.5 feet beneath the soil surface in the spring and during periods of heavy precipitation. Nicholville (SWP) soils exhibit permeabilities of 0.6-2.0 inches/hr throughout the profile.

NICHOLVILLE
(Aquic Haplorthods)

SETTING

Parent Material: Lacustrine material having a high content of silt and fine sand.

Landform: Commonly found on lake plains and upland till plains that have a mantle of water-deposited silt or very fine sand.

Position in Landscape: Intermediate and upper portions of landscape feature.

Slope Gradient Ranges: **(B)** 3-8% **(C)** 8-20% **(D)** 20+%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Moderately well drained, with a perched water table 1.5 to 2.0 feet below the soil surface from November through May.

Typical Profile Description:

Surface layer:	Very dark grayish brown silt loam, 0-10"
Subsurface layer:	Dark yellowish brown silt loam, 10-13"
Subsoil layer:	Yellowish brown and grayish brown very fine sandy loam, 13-18"
Substratum:	Grayish brown loamy very fine sand, 18-70"

Hydrologic Group: Group C

Surface Run Off: Medium

Permeability: Moderate throughout the profile.

Depth to Bedrock: Very deep, greater than 60".

Hazard to Flooding: None

INCLUSIONS
(Within Mapping Unit)

Similar: Croghan, Elmwood

Dissimilar: Nicholville (S.W.P.), Buxton, Lamoine, Made Land

USE AND MANAGEMENT

Stormwater design: Nicholville is a moderately well drained soil, exhibiting a seasonal high groundwater table 1.5-2.0 feet beneath the soil surface in the spring and during periods of high precipitation. Nicholville soils exhibit permeabilities of 0.6-2.0 inches/hour, through the profile.

SKERRY
(Aquic Haplorthods)

SETTING

Parent Material: Loamy glacial till underlain by sandy textured denser till.

Landform: Drumlins and glaciated uplands.

Position in Landscape: Usually occupies upper components of landform.

Slope Gradient Ranges: **(B)** 3-8% **(C)** 8-20%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Moderately well-drained, with a perched water table 1.5 to 3.5 feet below the soil surface from November through May.

Typical Profile Description:

Surface layer: Light gray fine sandy loam, 0-4"
Subsurface layer: Dark reddish brown fine sandy loam, 4-20"
Subsoil layer: Yellowish brown fine sandy loam, 20-25"
Substratum: Mixed brown and light olive brown fine sandy loam and sand, 25-65"

Hydrologic Group: Group C

Surface Run Off: Moderate

Permeability: Moderate in solum and slow or moderately slow in the compact substratum.

Depth to Bedrock: Deep, greater than 40".

Hazard to Flooding: None

INCLUSIONS
(Within Mapping Unit)

Similar: Dixfield, Herman

Dissimilar: Tunbridge, Lyman (less than 40" to bedrock), Colonel, Westbury

USE AND MANAGEMENT

Stormwater design: Skerry soils are moderately well drained. Soil permeabilities are expected to be 0.6 – 2.0 inches/hour in the upper portions of soil profile, and 0.06 – 0.6 inches/hour in the compact substratum, generally 25" – 65" beneath the soil surface.

Town, City, Plantation	Street, Road Subdivision	Owner's Name
GRAY	16 HANCOCK STREET	AVESTA HOUSING

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 1 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND	FRIABLE	BROWN	
10–20	SAND	LOOSE	LIGHT YELLOWISH BROWN	COMMON, DISTINCT
20–30		SOMEWHAT FIRM (PARTIALLY CEMENTED)		
30–40				
40–50				

Soil Classification (Profile / Condition)	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
	____ %	15"	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

Soil Series Name:	Drainage Class:	Hydrologic Group:
CROGHAN (VARIANT)	MODERATELY WELL DRAINED	A

FOR SOILS MAPPING →

Observation Hole TP 2 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND	FRIABLE	BROWN	
10–20	MEDIUM SAND	LOOSE	LIGHT YELLOWISH BROWN	COMMON, DSTINCT
20–30	FINE SAND		OLIVE BROWN	
30–40		SOMEWHAT FIRM (PARTIALLY CEMENTED)		
40–50				

Soil Classification (Profile / Condition)	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
	____ %	20"	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
CROGHAN (VARIANT)	MODERATELY WELL DRAINED	A

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 3 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0–10	VERY FINE SANDY LOAM (FILL)	FRIABLE	BROWN	
10–20	VERY FINE SANDY LOAM		YELLOWISH BROWN	FEW, DISTINCT
20–30	SILTY CLAY LOAM	FIRM	OLIVE BROWN	
30–40			GRAY	
40–50		LIMIT OF EXCAVATION		

Soil Classification (Profile / Condition)	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
	____ %	32"	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

Soil Series Name:	Drainage Class:	Hydrologic Group:
MADE LAND	MODERATELY WELL DRAINED	C

FOR SOILS MAPPING →

Observation Hole TP 4 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0–10	VERY FINE SANDY LOAM	FRIABLE	DARK BROWN	
10–20			PALE OLIVE GRAY	COMMON, DISTINCT/ FREE WATER
20–30	VERY FINE SANDY LOAM & SILT	FIRM	GRAY	
30–40	SILTY CLAY			
40–50		LIMIT OF EXCAVATION		

Soil Classification (Profile / Condition)	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
	____ %	12"	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
NICHOLVILLE (VARIANT)	SOMEWHAT POORLY DRAINED	D

[redacted]

66
SE/CSS #

4/16/21
Date

ALBERT FRICK ASSOCIATES – 380-B MAIN STREET GORHAM, MAINE 04038 – (207) 839-5563

Town, City, Plantation	Street, Road Subdivision	Owner's Name
GRAY	16 HANCOCK STREET	AVESTA HOUSING

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 5 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	VERY FINE SANDY LOAM	FRIABLE	DARK BROWN	
10–20	FINE SANDY		YELLOWISH BROWN	FEW, DISTINCT
20–30	VERY FINE SANDY LOAM		OLIVE BROWN	
30–40	SILTY CLAY	FIRM	GRAY	
40–50	LIMIT OF EXCAVATION			

Soil Classification (Profile / Condition)	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
	____ %	15 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING → Soil Series Name:	Drainage Class:	Hydrologic Group:
NICHOLVILLE (VARIANT)	MODERATELY WELL DRAINED	C

Observation Hole TP 6 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	FINE SANDY LOAM		DARK BROWN	
10–20	FINE SAND	FRIABLE	LIGHT YELLOWISH BROWN	FEW, FAINT
20–30			OLIVE BROWN	△△△ FREE WATER
30–40		SOMEWHAT FIRM		
40–50				

Soil Classification (Profile / Condition)	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
	____ %	12 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
NAUMBURG	SOMEWHAT POORLY DRAINED	D

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 7 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND		BROWN	FEW, DISTINCT
10–20	FINE SAND	FRIABLE	STRONG BROWN	
20–30			LIGHT YELLOWISH BROWN	△△△ FREE WATER
30–40	MEDIUM SAND	SOMEWHAT FIRM	OLIVE BROWN	
40–50	LIMIT OF EXCAVATION			

Soil Classification (Profile / Condition)	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
	____ %	10 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING → Soil Series Name:	Drainage Class:	Hydrologic Group:
NAUMBURG	SOMEWHAT POORLY DRAINED	D

Observation Hole TP 8 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND		DARK BROWN	
10–20	SAND	FRIABLE	YELLOWISH BROWN / LIGHT YELLOWISH BROWN	COMMON, DISTINCT
20–30			OLIVE BROWN	△△△ FREE WATER
30–40				
40–50				

Soil Classification (Profile / Condition)	Slope	Limiting Factor	Ground Water / Restrictive Layer / Bedrock / Pit Depth
	____ %	8 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
NAUMBURG	POORLY DRAINED	D

Site [redacted] 66 SE/CSS # 4/16/21 Date

ALBERT FRICK ASSOCIATES – 380-B MAIN STREET GORHAM, MAINE 04038 – (207) 839-5563

Town, City, Plantation	Street, Road Subdivision	Owner's Name
GRAY	16 HANCOCK STREET	AVESTA HOUSING

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 9 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	MIXED LOAMY SAND (FILL)			
10–20		FRIABLE	OLIVE BROWN	
20–30	LOAMY SAND			COMMON, DISTINCT △△△
30–40			DARK BROWN	FREE WATER
40–50	FINE SAND	FIRM	PALE BROWN	

FOR WASTEWATER DISPOSAL → Soil Classification: Profile ____ Condition ____ | Slope ____ % | Limiting Factor 30 " | ■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING → Soil Series Name: MADE LAND | Drainage Class: MODERATELY WELL DRAINED | Hydrologic Group: C

Observation Hole TP 10 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM		DARK BROWN	
10–20	LOAMY SAND	FRIABLE	YELLOWISH BROWN	
20–30				FEW, FAINT
30–40	FINE SAND	SOMEWHAT FIRM	PALE BROWN	
40–50				

Soil Classification: Profile ____ Condition ____ | Slope ____ % | Limiting Factor 24 " | ■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name: CROGHAN | Drainage Class: MODERATELY WELL DRAINED | Hydrologic Group: A

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 11 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND	FRIABLE	DARK BROWN	COMMON, DISTINCT △△△
10–20	SAND		OLIVE GRAY	FREE WATER
20–30				
30–40				
40–50				

FOR WASTEWATER DISPOSAL → Soil Classification: Profile ____ Condition ____ | Slope ____ % | Limiting Factor 7 " | ■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING → Soil Series Name: NAUMBURG | Drainage Class: POORLY DRAINED | Hydrologic Group: D

Observation Hole TP 12 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	LOAMY SAND		DARK BROWN	
10–20	FINE SAND	FRIABLE	YELLOWISH BROWN	
20–30		REFUSAL		
30–40				
40–50				

Soil Classification: Profile ____ Condition ____ | Slope ____ % | Limiting Factor 26" | ☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

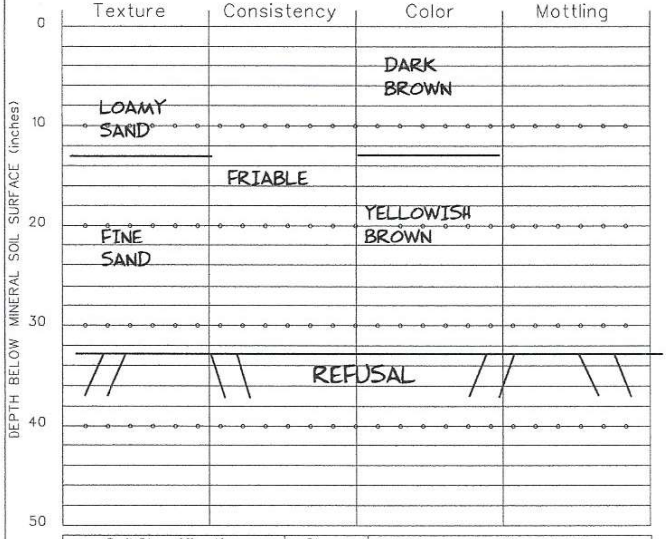
Soil Series Name: SKERRY (VARIANT) | Drainage Class: WELL DRAINED | Hydrologic Group: C

Site [redacted] | 66 SE/CSS # | 4/16/21 Date

Town, City, Plantation	Street, Road Subdivision	Owner's Name
GRAY	16 HANCOCK STREET	AVESTA HOUSING

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 13 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil



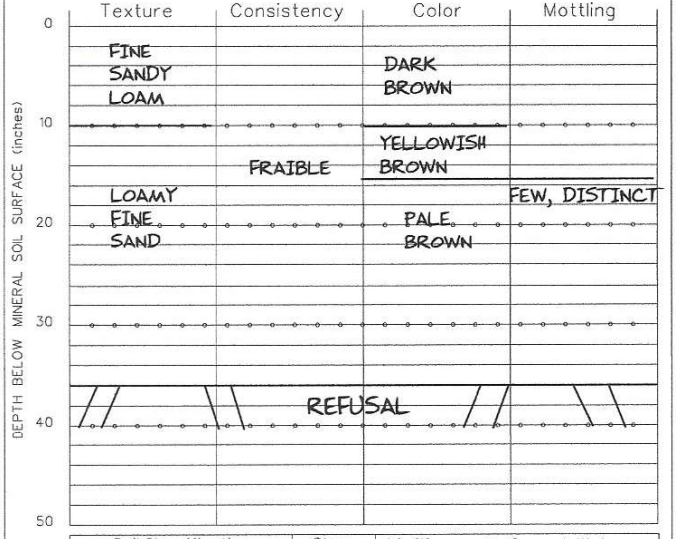
Soil Classification	Slope	Limiting Factor	
Profile: _____ Condition: _____	____ %	32 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

Soil Series Name:	Drainage Class:	Hydrologic Group:
SKERRY (VARIANT)	WELL DRAINED	C

FOR SOILS MAPPING →

Observation Hole TP 14 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

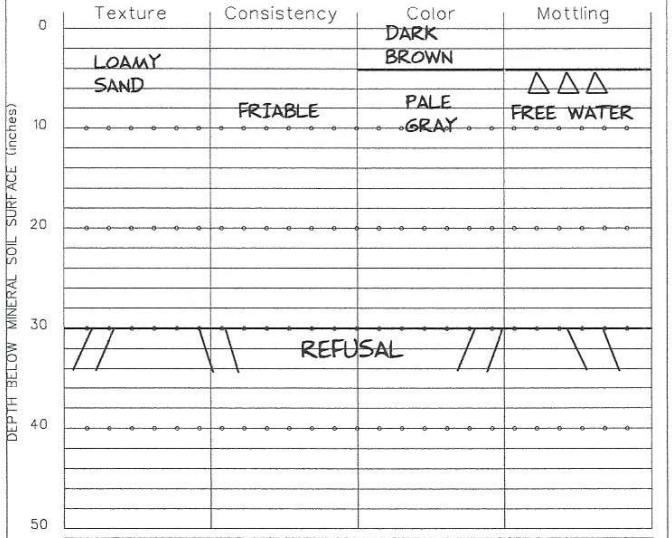


Soil Classification	Slope	Limiting Factor	
Profile: _____ Condition: _____	____ %	15 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
SKERRY (VARIANT)	MODERATLY WELL DRAINED	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 15 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil



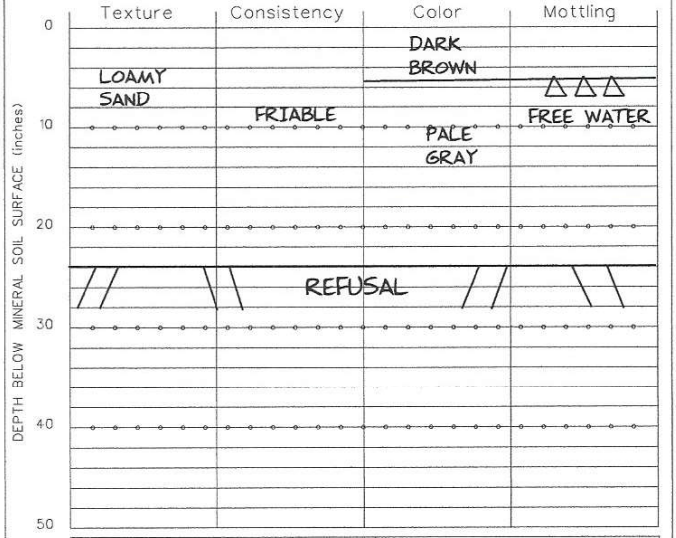
Soil Classification	Slope	Limiting Factor	
Profile: _____ Condition: _____	____ %	4 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

Soil Series Name:	Drainage Class:	Hydrologic Group:
BRAYTON (VARIANT)	POORLY DRAINED	D

FOR SOILS MAPPING →

Observation Hole TP 16 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil



Soil Classification	Slope	Limiting Factor	
Profile: _____ Condition: _____	____ %	5 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

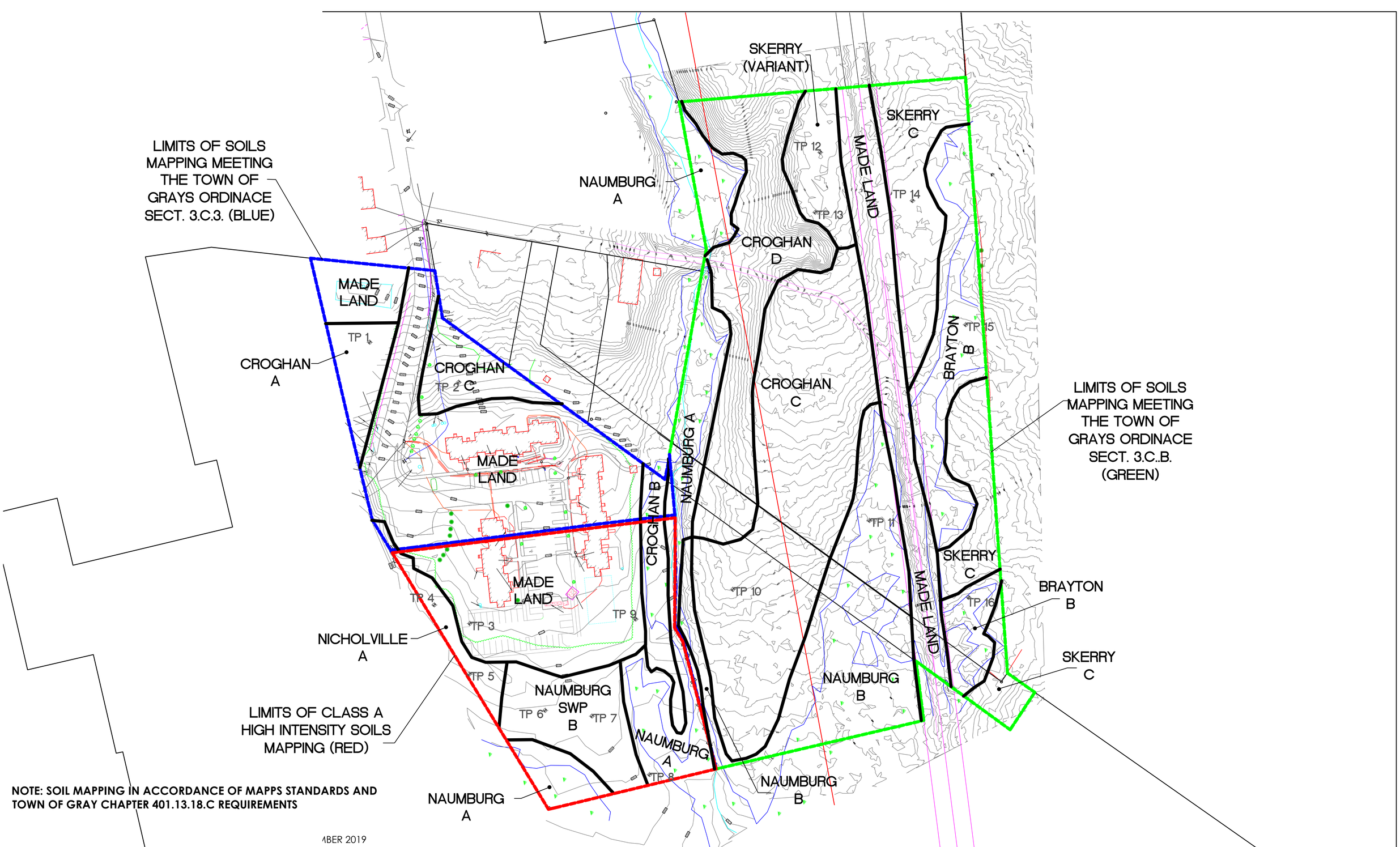
Soil Series Name:	Drainage Class:	Hydrologic Group:
BRAYTON (VARIANT)	POORLY DRAINED	D

[redacted]
Site Evaluator / Soil Scientist Signature

66
SE/CSS #

4/16/21
Date

ALBERT FRICK ASSOCIATES – 380-B MAIN STREET GORHAM, MAINE 04038 – (207) 839-5563



NOTE: SOIL MAPPING IN ACCORDANCE OF MAPPS STANDARDS AND TOWN OF GRAY CHAPTER 401.13.18.C REQUIREMENTS

ABER 2019

SOILS MAP LEGEND:

- SOIL TEST PIT (LOCATED BY SUBMETER GPS)
- SOIL BOUNDARY LINE
- LIMITS OF CLASS A HIGH INTENSITY SOILS MAPPING
- LIMITS OF SOILS MAPPING PER TOWN STANDARDS
- WETLAND AREA (BY OTHERS)
- STREAM / POND

SLOPE DESIGNATION

- A —— 0 - 3%
- B —— 3 - 8%
- C —— 8 - 20%
- D —— 20%+

NOTE: SEE ACCOMPANYING SOIL NARRATIVE REPORT, DATED APRIL, 2021

THE ACCOMPANYING SOILS SURVEY WAS DONE IN ACCORDANCE WITH THE STANDARDS ADOPTED BY THE MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS, FEBRUARY 1995, AS AMENDED.

STATE OF MAINE [redacted] SOIL SCIENTIST

DATE:	REVISIONS:

SOIL MAP
HIGH INTENSITY
PREPARED FOR
AVESTA HOUSING
16 HANCOCK STREET
GRAY, MAINE

Albert Frick Associates, Inc.
Environmental Consultants
Gorham, Maine

Drawn By: B.J.	Checked By: A.F.
Date: 4/7/21	Scale: 1" = 60'

NORTH

LEGEND

SLOPES 25% OR STEEPER – 100% DEDUCTION (20,416 SF)

POORLY DRAINED SOILS – 100% DEDUCTION (66,758 SF)

SOMEWHAT POORLY DRAINED SOILS – 50% DEDUCTION (25,584 SF)

FORESTED WETLANDS – 50% DEDUCTION (112,921 SF)

SOIL BOUNDARY

PROPERTY LINE

PARCEL C1
area=89,507
2.0 acres

PARCEL B1
area=7,092

PARCEL C
area= 172,949 square feet
4 acres

PARCEL B
area=22,413
0.5 acres

PARCEL A
area=313,141 square feet
7.2 acres

Hancock Street

SOIL TABLE		
SOIL NAME	HSG CLASS	DESCRIPTION
BRAYTON	D	POORLY DRAINED
CROGHAN	B	MODERATELY WELL-DRAINED
MADE LAND	C	NONE ASSIGNED
NAUMBERG	D	SOMEWHAT POORLY TO POORLY DRAINED
NICHOLVILLE (S.W.P.)	D	SOMEWHAT POORLY DRAINED
NICHOLVILLE	C	MODERATELY WELL-DRAINED
SKERRY	C	MODERATELY WELL-DRAINED

GENERAL NOTES:
1. TEST PIT ANALYSIS WAS COMPLETED BY LICENSED SOIL EVALUATOR AND CERTIFIED SOIL SCIENTIST ALBERT FRICK #66. OF ALBERT FRICK ASSOCIATES. AT 731 FOSS ROAD, LIMERICK, MAINE 04048.

Site:

AVESTA GRAY MEADOWVIEW II

16 HANCOCK STREET
GRAY, MAINE

Prepared for:

AVESTA HOUSING
307 CUMBERLAND AVENUE
PORTLAND, MAINE, 04101

Civil Engineer:

STAMP
STATE OF MAINE
MAUREEN P. McGLONE
[redacted]

MAUREEN P. MCGLONE, PE #7705
RANSOM CONSULTING, LLC
400 COMMERCIAL STREET, SUITE 404
PORTLAND, ME 04101
207-772-2891

Architect:

JSA DESIGN
273 CORPORATE DRIVE, SUITE 100
PORTSMOUTH, NH, 03801

Structural/Mechanical:

ALLIED ENGINEERING, INC.
160 VERANDA STREET
PORTLAND, MAINE, 04103

Soil Scientist/Site Evaluator:

ALBERT FRICK ASSOCIATES, INC.
380B MAIN STREET
GORHAM, MAINE, 04038

Landscape Architect:

RASOR LANDSCAPE ARCHITECTURE
87 MAIN STREET
YARMOUTH, MAINE, 04096

Surveyor:

OWEN HASKELL, INC.
390 US ROUTE 1, UNIT 10
FALMOUTH, MAINE, 04105

SCALE

0 25 50 100

SCALE in FEET
1"=50'

RANSOM
Consulting, LLC.
400 Commercial Street, Suite 404
Portland, ME 04101
Tel. (207) 772-2891
Fax (207) 772-3248
www.ransomenv.com

NET RESIDENTIAL AREA CALCULATIONS

No.	Revision/Issue	Date
B	PLANNING BOARD/DEP REVIEW	5/19/22
A	PERMITTING	1/28/22

Design by: DJV
Drawn by: DJV
Checked by: MPM
Approved by: JIM/MPM

Project: 191.06051
Date: DECEMBER 2019

Sheet No: 1
Sheet 1 of 1

P:\2019\191.06051\Drawings\Working Drawings\191.06051 SWP-SITE.dwg May 19, 2022 - 3:10pm

APPENDIX I

E911 Road Name Change Approval Letter

Meadowview II
Site Plan and Final Major Subdivision Review Submission
16 Hancock Street
Gray, Maine

David Vitali

From: Kristen Muszynski <kmuszynski@graymaine.org>
Sent: Thursday, May 19, 2022 9:42 AM
To: David Vitali
Cc: Doug Webster; Maureen P. McGlone; Nathaniel Howes; Tom Errico
Subject: RE: Meadowview Traffic Circulation Question: E911 Officer Approval

Hi David:
Our assessor handles the E-911 addressing, and I have already conferred with her and our public safety/public works crew on the road name as you noted below. I think we're all set, given the previous feedback and the road discontinuance, but it would be best if you could fill out the road name change form so we can formalize it. (Please note that not all of the steps outlined with this form will apply to your project.)
Road Name Approval Application | Town of Gray Maine

Kristen

From: David Vitali <david.vitali@ransomenv.com>
Sent: Wednesday, May 18, 2022 11:53 AM
To: Kristen Muszynski <kmuszynski@graymaine.org>
Cc: Doug Webster <dwebster@graymaine.org>; Maureen P. McGlone <maureen.mcglone@ransomenv.com>; Nathaniel Howes <NHowes@AvestaHousing.org>; Tom Errico <thomas.errico@tylin.com>
Subject: RE: Meadowview Traffic Circulation Question: E911 Officer Approval

Hello Kristen,

Looking through the final major subdivision application checklist, I'm seeing that the town requires *"Written Approval of Town E911 Officer"*.

Who is the Gray E911 officer that I should be reaching out to for this approval? Or would the email below be sufficient to meet this requirement?

Thank you.

David J. Vitali, **P.E.**
Project Engineer
RANSOM CONSULTING, LLC
400 Commercial Street | Suite 404 | Portland, ME 04101
(207) 772-2891 x 436 | phone
(207) 522-4845 | mobile
david.vitali@ransomenv.com
website | my linkedin | vCard | map

This email may contain confidential and/or private information. If you received this email in error please delete and notify sender.

From: Kristen Muszynski <kmuszynski@graymaine.org>
Sent: Tuesday, March 29, 2022 3:27 PM
To: John I. Mahoney <john.mahoney@ransomenv.com>; Nathaniel Howes <NHowes@AvestaHousing.org>; Tom Errico <thomas.errico@tylin.com>

Cc: Doug Webster <dwebster@graymaine.org>; David Vitali <david.vitali@ransomenv.com>; Maureen P. McGlone <maureen.mcglone@ransomenv.com>
Subject: RE: Meadowview Traffic Circulation Question: "Meadowview Drive" ??

Our Public Works director and assessor noted that this name is close to 'Marshview Dr' and 'May Meadow Dr.' but given that the development is already referred to as Meadowview Apartments, PW is OK with the name and so is our fire chief.
We do have a form for road name changes that we'll want to complete and have on file as part of this process, but it sounds like we're good to use this name on the plans.

Thanks
Kristen

From: John I. Mahoney <john.mahoney@ransomenv.com>
Sent: Monday, March 28, 2022 4:45 PM
To: Nathaniel Howes <NHowes@AvestaHousing.org>; Kristen Muszynski <kmuszynski@graymaine.org>; Tom Errico <thomas.errico@tylin.com>
Cc: Doug Webster <dwebster@graymaine.org>; David Vitali <david.vitali@ransomenv.com>; Maureen P. McGlone <maureen.mcglone@ransomenv.com>
Subject: RE: Meadowview Traffic Circulation Question: "Meadowview Drive" ??

Hi all:

Avesta would prefer the name "Meadowview Drive" for the subject section of roadway. I think this name would be better from a wayfinding/emergency response perspective because the "Meadowview" name has been associated with this site for 50 years, while Avesta owns multiple properties throughout Maine and New Hampshire. If this naming convention is acceptable to the Town, we will revise the plans accordingly. Please advise.

Best,
John Mahoney, **P.E.**
Project Manager, Project Engineer
RANSOM CONSULTING, LLC
400 Commercial Street | Suite 404 | Portland, ME 04101
(207) 772-2891 | phone
(207) 831-6165 | mobile
john.mahoney@ransomenv.com

From: Nathaniel Howes <NHowes@AvestaHousing.org>
Sent: Monday, March 28, 2022 4:09 PM
To: John I. Mahoney <john.mahoney@ransomenv.com>; Kristen Muszynski <kmuszynski@graymaine.org>; Tom Errico <thomas.errico@tylin.com>
Cc: Doug Webster <dwebster@graymaine.org>; David Vitali <david.vitali@ransomenv.com>; Maureen P. McGlone <maureen.mcglone@ransomenv.com>
Subject: RE: Meadowview Traffic Circulation Question

Also everyone, we don't want it called "Avesta Drive" as a reminder

Nate Howes
Development Officer
Avesta Housing
307 Cumberland Ave. | Portland, ME 04101

APPENDIX J

Fire Chief Letter

Meadowview II
Site Plan and Final Major Subdivision Review Submission
16 Hancock Street
Gray, Maine

David Vitali

From: Kurt Elkanich <kelkanich@graymaine.org>
Sent: Thursday, May 19, 2022 3:23 PM
To: David Vitali
Cc: Maureen P. McGlone; Kristen Muszynski; Peter Holmquist
Subject: Re: Meadowview II - Fire Chief Letter for Planning Board Application
Attachments: Meadowview II - Site Plan.pdf; Meadowview II - Utility Plan.pdf

Hi David,
The attached drawing has all the changes I have requested. Including hydrant location, one-way directional marking on the access road, a path to be kept clear year-round that goes around the back of the new building and adequate turning radius.

Things we agreed on that the drawing does not show include a Knox Box in the entry way (electronic key recommended), FDC (Fire Department Connection) for the sprinkler system (two 2 ½" connections as opposed to one 5-inch Stortz connection). We also expect that a fire alarm annunciator will be installed in the entryway.

That should do it.

Looks great!

Thanks,
Kurt

Kurt Elkanich
Gray Fire Rescue
Chief of Department/EMA Director
Public Safety Director
125 Shaker Rd.
Gray, Maine 04039
(207)657-3931
(207)274-0446 – cell

From: David Vitali <david.vitali@ransomenv.com>
Sent: Wednesday, May 18, 2022 11:46 AM
To: Kurt Elkanich <kelkanich@graymaine.org>
Cc: Maureen P. McGlone <maureen.mcglone@ransomenv.com>; Kristen Muszynski <kmuszynski@graymaine.org>
Subject: Meadowview II - Fire Chief Letter for Planning Board Application

Hello Kurt,

I'm writing you today with regards to the proposed development of an additional building on the existing Meadowview campus at 16 Hancock Street. We are preparing plans and documentation for final planning board approval to submit to the town by the end of this week.

The town requires that the application include a *"Fire Chief letter on hydrants or other fire protection measures"*. I've included the most recent Site Plan and Utility Plan for the development for your review. We have revised the circulation direction and signage for the proposed one-way access into the site. We are waiting on final confirmation from the landscape architect that the proposed vegetation won't interfere with access to the existing pathway adjacent to Building #2, but we don't foresee this being an issue.

Please review the attached plans and send back a letter for us to include with our submission to the town. Feel free to reach out with any questions or comments.

Thank you.

David J. Vitali, **P.E.**
Project Engineer

RANSOM CONSULTING, LLC
400 Commercial Street | Suite 404 | Portland, ME 04101

(207) 772-2891 x 436 | phone
(207) 522-4845 | mobile

david.vitali@ransomenv.com

website | my linkedin | vCard | map

This email may contain confidential and/or private information. If you received this email in error please delete and notify sender.

This electronic mail message and any attachments hereto, as well as any electronic mail message(s) that may be sent in response to it, may be considered public records, and may therefore be subject to public record requests for review and copying under Maine's Right to Know Law (Title 1, 401-521 of the Maine Revised Statutes).

This electronic mail message and any attachments hereto, as well as any electronic mail message(s) that may be sent in response to it, may be considered public records, and may therefore be subject to public record requests for review and copying under Maine's Right to Know Law (Title 1, 401-521 of the Maine Revised Statutes).

Total Control Panel Login

To: david.vitali@ransomenv.com Remove this sender from my allow list
From: kelkanich@graymaine.org

You received this message because the sender is on your allow list.

PLANS

Meadowview II
Site Plan and Final Major Subdivision Review Submission
16 Hancock Street
Gray, Maine

RANSOM
Project 191.06051

MEADOWVIEW II

16 HANCOCK STREET

GRAY, MAINE

ISSUED FOR PERMITTING



SHEET INDEX:

SHEET	DESCRIPTION
	COVER SHEET
	BOUNDARY & TOPOGRAPHIC SURVERY SHEET 1
	BOUNDARY & TOPOGRAPHIC SURVEY SHEET 2
C1.0	OVERALL SITE INVENTORY PLAN
C1.1	SUBDIVISION PLAN
C1.2	SITE PLAN
C1.3	GRADING AND DRAINAGE PLAN
C1.4	UTILITY PLAN
C1.5	STORMWATER AND EROSION CONTROL PLAN
C1.6	SEPTIC SECTION
C2.1	EROSION AND SEDIMENTATION CONTROL PLAN NOTES AND DETAILS
C2.2	SITE AND UTILITY DETAILS
C2.3	UTILITY DETAILS
C2.4	GRADING AND STORMWATER DETAILS
L-1	LANDSCAPE AND LIGHTING PLAN
	ARCHITECTURAL PLANS
	PHOTOMETRIC PLAN

OWNER:

AVESTA HOUSING

AVESTA HOUSING DEVELOPMENT CORPORATION
307 Cumberland Avenue
Portland, ME 04101

ENGINEER:

RANSOM Consulting Engineers and Scientists

400 Commercial Street, Suite 404
Portland, ME 04101
Tel. (207) 772-2891
Fax (207) 772-3248
www.ransomenv.com

ARCHITECT:

JSA

JSA DESIGN
273 Corporate Drive, Suite 100
Portsmouth, NH 03801

LANDSCAPE ARCHITECT:

_rasor

RASOR LANDSCAPE ARCHITECTURE
87 Main Street
Yarmouth, ME 04096

SURVEYOR:

OWEN HASKELL, INC. PROFESSIONAL LAND SURVEYORS

OWEN HASKELL, INC.
390 US Route 1, Unit 10
Falmouth, ME 04105

Site:

AVESTA GRAY
MEADOWVIEW II
16 HANCOCK STREET
GRAY, MAINE

Prepared for:

AVESTA HOUSING
307 CUMBERLAND AVENUE
PORTLAND, MAINE, 04101

Civil Engineer:

STAMP: STATE OF MAINE · MAUREEN P. McGLONE #7705 · LICENSED PROFESSIONAL ENGINEER

MAUREEN P. MCGLONE, PE #7705
RANSOM CONSULTING, LLC
400 COMMERCIAL STREET, SUITE 404
PORTLAND, ME 04101
207-772-2891

Architect:

JSA DESIGN
273 CORPORATE DRIVE, SUITE 100
PORTSMOUTH, NH, 03801

Structural/Mechanical:

ALLIED ENGINEERING, INC.
160 VERANDA STREET
PORTLAND, MAINE, 04103

Soil Scientist/Site Evaluator:

ALBERT FRICK ASSOCIATES, INC.
380B MAIN STREET
GORHAM, MAINE, 04038

Landscape Architect:

RASOR LANDSCAPE ARCHITECTURE
87 MAIN STREET
YARMOUTH, MAINE, 04096

Surveyor:

OWEN HASKELL, INC.
390 US ROUTE 1, UNIT 10
FALMOUTH, MAINE, 04105

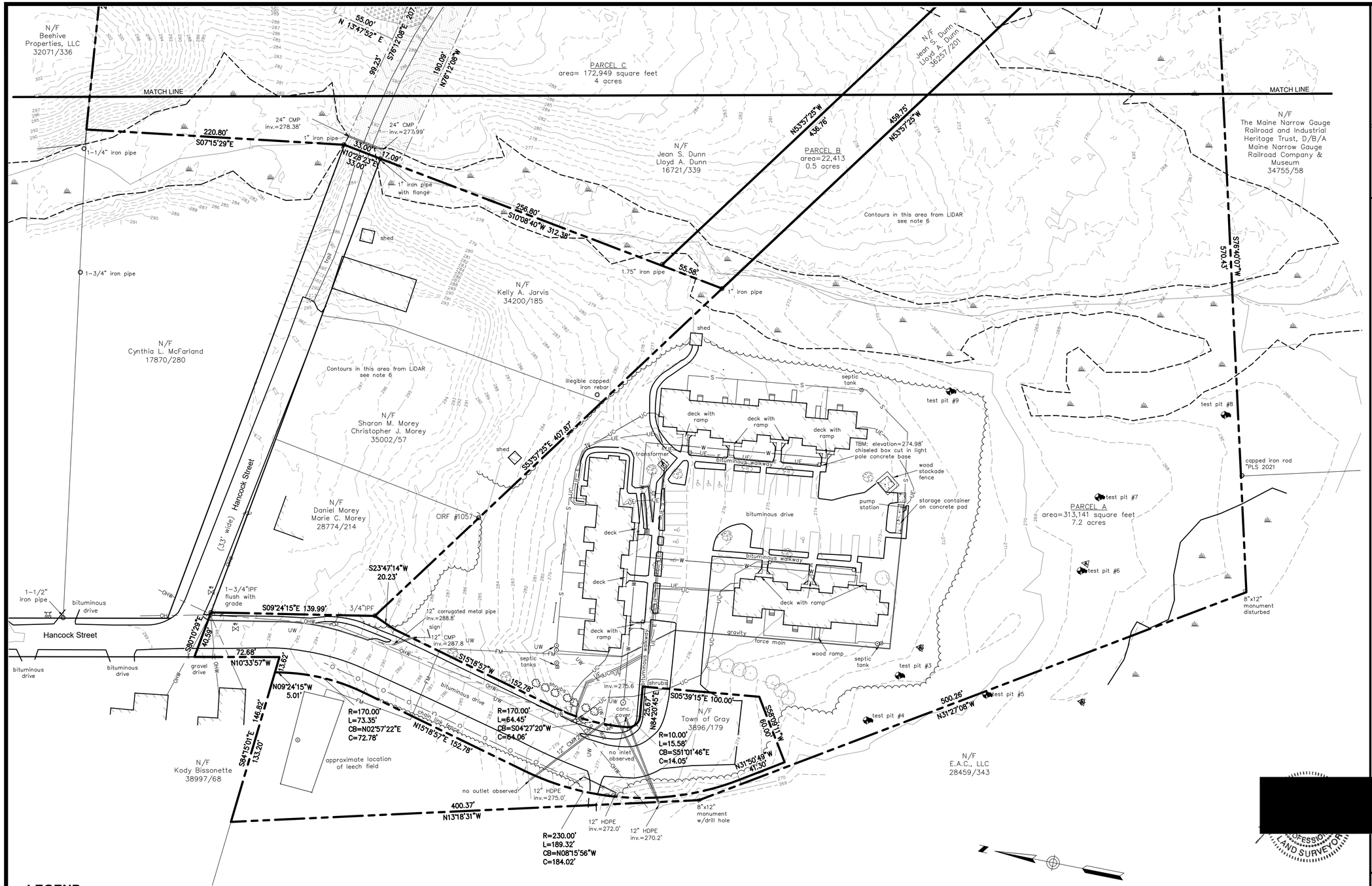
RANSOM Consulting, LLC.
400 Commercial Street, Suite 404
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No.	Revision/Issue	Date
B	PLANNING BOARD/DEP REVIEW	5/19/22
A	PERMITTING	1/28/22

Design by: DJV	Checked by: MPM
Drawn by: DJV	Approved by: JIM/MPM
Project: 191.06051	Date: DECEMBER 2019

Sheet No:

COVER



LEGEND

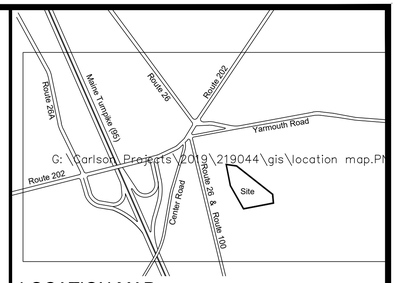
- Monument – found
- Iron marker – found
- Property line
- fence
- Stone wall
- Curb
- Sign
- Lamp or light pole
- Utility pole
- Guy wire
- Water valve
- Water shutoff
- Fire hydrant
- N/F — Now or formerly of
- 1234/567 — Deed reference (Book/Page)
- OHW — Overhead utility wires
- UW — Underground water line
- UE — Underground electric line
- UC — Underground communications line
- Contours (1ft)
- Contours (5ft)
- Stream
- Tree line
- Wetlands
- Shrubbery
- Deciduous tree
- Coniferous tree
- Existing building
- Concrete
- FM — Forcedmain Sewer
- S — Sanitary Sewer

SCALE : 1" = 40'

0' 20' 40' 80'

UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEY HAS NOT PHYSICALLY LOCATION THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.



LOCATION MAP N.T.S.

PLAN REFERENCES

1. BOUNDARY RETRACEMENT SURVEY OF THE GRAY MARKETPLACE OF THE PROPERTY LOCATED ALONG STATE ROUTES 26 & 100 GRAY, MAINE FOR DANIEL P. CRAFFEY BY PIONEER SURVEYING & MAPPING SERVICES, DATED FEBRUARY 2009 AND REVISED 11/23/09 & 02/02/2010 AS RECORDED IN PLAN BOOK 211, PAGE 34.

2. STANDARD BOUNDARY SURVEY PROPERTY PLAN OF LOT CONFIGURATION 20-24 SKILLINGS STREET-GRAY, MAINE MADE FOR RICHARD & PATRICIA BARTER 22 HANCOCK STREET-GRAY, MAINE 04039 BY JOHN D. PALMITER, PLS 1057 DATED NOVEMBER 12, 2008 AS RECORDED IN PLAN BOOK 209, PAGE 167.

3. PLAN OF PROPERTY FOR GRAY HOUSING INC. IN GRAY, MAINE BY JOHN D. PALMITER DATED JULY 1974 AS RECORDED IN PLAN BOOK 110, PAGE 9.

4. PLAN OF PROPERTY FOR OF GRAY PLAZA INC. DATED APRIL, 1974 AND REVISED THROUGH SEPTEMBER 27, 1995 AS RECORDED IN PLAN BOOK 197, PAGE 16.

5. SURVEY OF LEROY VERRILL PROPERTY IN GRAY, MAINE BY JOHN D. PALMITER R.L.S. #1057 DATED MARCH 1981 AS RECORDED IN PLAN BOOK 135, PAGE 21.

6. BOUNDARY AND TOPOGRAPHIC SURVEY OF MEADOWVIEW, 16 HANCOCK STREET, GRAY, MAINE MADE FOR RANSOM CONSULTING, INC. JULY 19, 2019 BY TITCOMB ASSOCIATES.

GENERAL NOTES

1. OWNERS OF RECORD:

   PARCEL A– GRAY SENIOR HOUSING, INC.
   C.C.R.D. BOOK 3676, PAGE 265 AND BOOK 3605, PAGE 257

   PARCEL B & B1– JEAN S. DUNN AND LLOYD A. DUNN
   C.C.R.D. BOOK 36257, PAGE 201

   PARCEL C AND C1– JEAN S. DUNN AND LLOYD A. DUNN
   C.C.R.D. BOOK 16721, PAGE 339

2. BEARINGS ARE REFERENCED TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD83.

3. ELEVATIONS ARE BASED ON GPS OBSERVATIONS, NAVD88 DATUM. BENCHMARK IS A CHISELED BOX CUT IN SOUTHEASTERN MOST LIGHT POLE CONCRETE BASE, AS DEPICTED ON THIS PLAN. ELEVATION: 274.98'.

4. UTILITY INFORMATION ON THIS PLAN IS APPROXIMATE, BASED ON LOCATION OF VISIBLE FEATURES, DIGSAFE AND/OR THE APPROPRIATE UTILITIES SHOULD BE CONTACTED PRIOR TO ANY CONSTRUCTION.

5. WETLAND DELINEATION BY C.C. DORIAN GEOLOGICAL SERVICES, LLC OF 200 HIGH STREET, SUITE #2D PORTLAND, MAINE 04101.

6. CONTOURS IN THIS AREA HAVE BEEN GENERATED WITH MAINE OFFICE OF GIS LIDAR DATA AND HAVE NOT BEEN FIELD VERIFIED.

7. SANITARY SEWER LINE LOCATIONS ARE APPROXIMATE BASED ON DESIGN PLANS AND HAVE NOT BEEN FIELD VERIFIED.

EASEMENTS / ENCUMBRANCES

1. PROPERTY IS SUBJECT TO A UTILITY EASEMENT CONVEYED TO THE PINE TREE TELEPHONE AND TELEGRAPH CO. BY GRAY PLAZA, INC. RECORDED IN BOOK 3798, PAGE 166.

2. PROPERTY IS SUBJECT TO A UTILITY EASEMENT CONVEYED TO CENTRAL MAINE POWER COMPANY, INC. BY GRAY SENIOR HOUSING, INC. RECORDED IN BOOK 3723, PAGE 1.

CERTIFICATE

OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

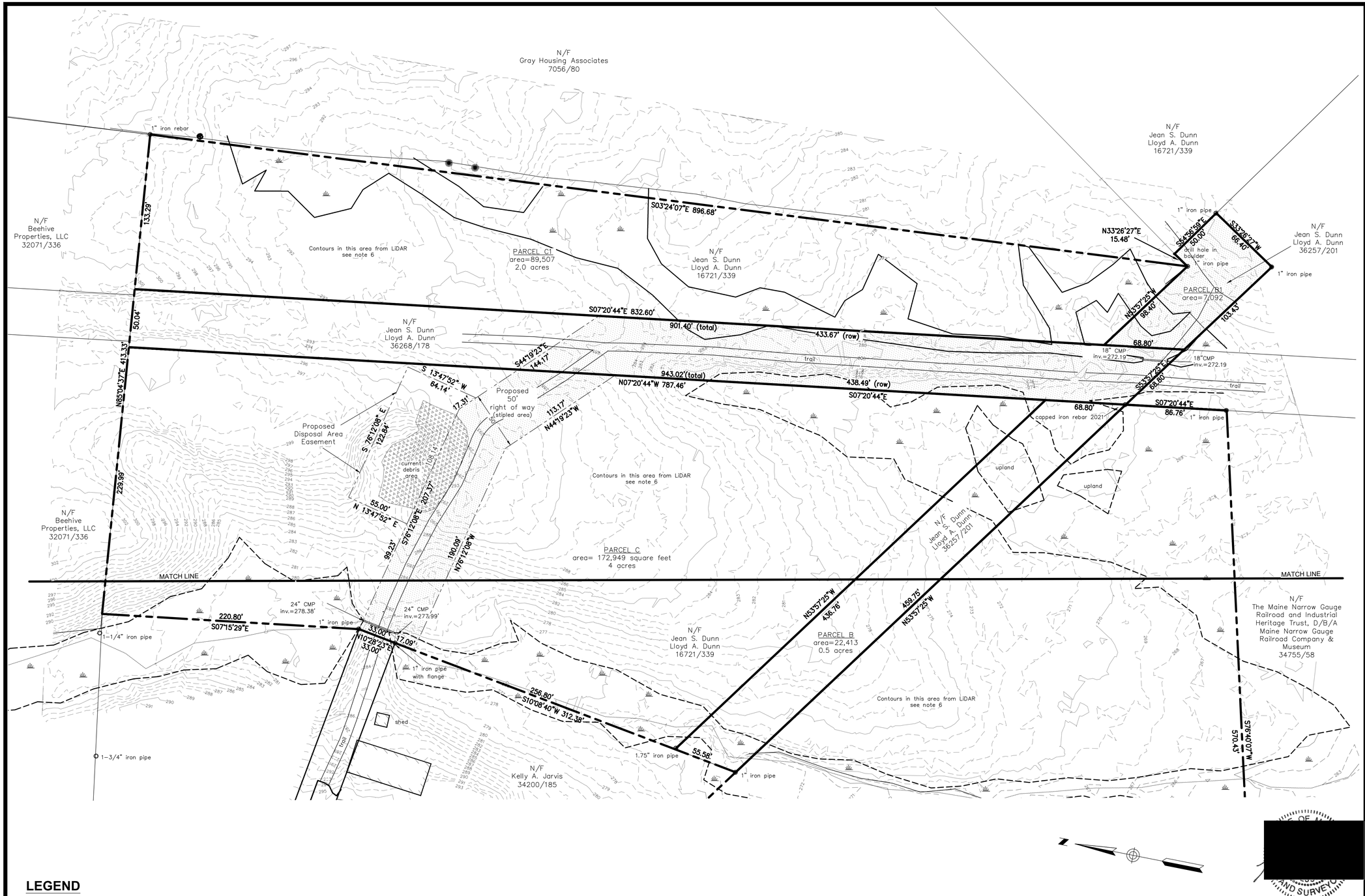
REX J. CROTEAU, PLS #2273

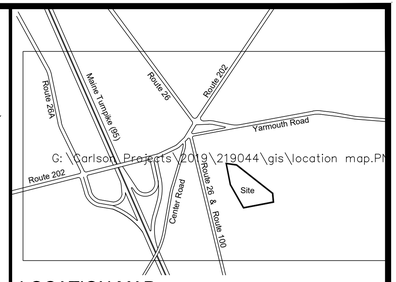
DATE

Boundary & Topographic Survey
Of
Meadowview
16 Hancock Street, Gray, Maine
Made for
Ransom Consulting, LLC
400 Commercial St., Ste 404, Portland, Maine

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424

DRAWN BY: RJC / JLW	DATE: JAN. 12, 2022	JOB NO. 2022-006 GR	
CHECKED BY: RJC	SCALE: 1" = 40'	DRWG. NO. 1	





LOCATION MAP

N.T.S.

PLAN REFERENCES

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   C.C.R.D. BOOK 3676, PAGE 265 AND BOOK 3605, PAGE 257

   PARCEL B & B1– JEAN S. DUNN AND LLOYD A. DUNN
   C.C.R.D. BOOK 36257, PAGE 201

   PARCEL C AND C1– JEAN S. DUNN AND LLOYD A. DUNN
   C.C.R.D. BOOK 16721, PAGE 339

2. BEARINGS ARE REFERENCED TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD83.

3. ELEVATIONS ARE BASED ON GPS OBSERVATIONS, NAVD88 DATUM. BENCHMARK IS A CHISELED BOX CUT IN SOUTHEASTERN MOST LIGHT POLE CONCRETE BASE, AS DEPICTED ON THIS PLAN. ELEVATION: 274.98'.

4. UTILITY INFORMATION ON THIS PLAN IS APPROXIMATE, BASED ON LOCATION OF VISIBLE FEATURES. DIGSAFE AND/OR THE APPROPRIATE UTILITIES SHOULD BE CONTACTED PRIOR TO ANY CONSTRUCTION.

5. WETLAND DELINEATION BY C.C. DORIAN GEOLOGICAL SERVICES, LLC OF 200 HIGH STREET, SUITE #2D PORTLAND, MAINE 04101.

6. CONTOURS IN THIS AREA HAVE BEEN GENERATED WITH MAINE OFFICE OF GIS LIDAR DATA AND HAVE NOT BEEN FIELD VERIFIED.

7. SANITARY SEWER LINE LOCATIONS ARE APPROXIMATE BASED ON DESIGN PLANS AND HAVE NOT BEEN FIELD VERIFIED.

EASEMENTS / ENCUMBRANCES

1. PROPERTY IS SUBJECT TO A UTILITY EASEMENT CONVEYED TO THE PINE TREE TELEPHONE AND TELEGRAPH CO. BY GRAY PLAZA, INC. RECORDED IN BOOK 3798, PAGE 166.

2. PROPERTY IS SUBJECT TO A UTILITY EASEMENT CONVEYED TO CENTRAL MAINE POWER COMPANY, INC. BY GRAY SENIOR HOUSING, INC. RECORDED IN BOOK 3723, PAGE 1.

CERTIFICATE

OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

REX J. CROTEAU, PLS #2273

DATE

LEGEND

- Monument – found
- Iron marker – found
- Property line
- fence
- Stone wall
- Curb
- Sign
- Lamp or light pole
- Utility pole
- Guy wire
- Water valve
- Water shutoff
- Fire hydrant
- N/F — Now or formerly of
- 1234/567 — Deed reference (Book/Page)
- OHW — Overhead utility wires
- UW — Underground water line
- UE — Underground electric line
- UC — Underground communications line
- Contours (1ft)
- Contours (5ft)
- Stream
- Tree line
- Wetlands
- Shrubbery
- Deciduous tree
- Coniferous tree
- Existing building
- Concrete
- FM — Forcedmain Sewer
- S — Sanitary Sewer

SCALE : 1" = 40'

0' 20' 40' 80'

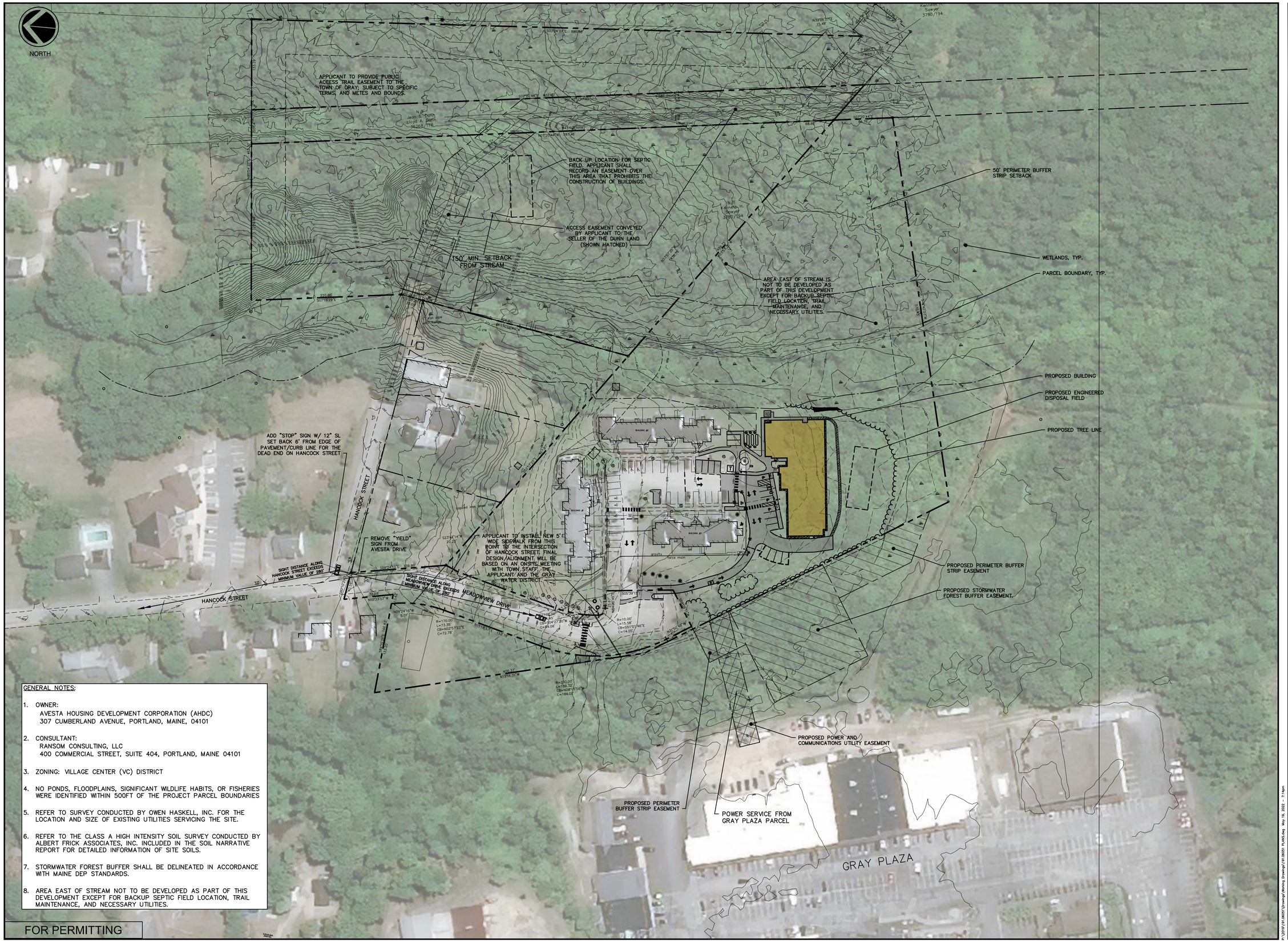
UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEY HAS NOT PHYSICALLY LOCATION THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

Boundary & Topographic Survey
Of
Meadowview
16 Hancock Street, Gray, Maine
Made for
Ransom Consulting, LLC
400 Commercial St., Ste 404, Portland, Maine

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424

DRAWN BY: RJC / JLW	DATE: JAN. 12, 2022	JOB NO. 2022-006 GR	
CHECKED BY: RJC	SCALE: 1" = 40'	DRWG. NO. 2	



GENERAL NOTES:

1. OWNER:
   AVESTA HOUSING DEVELOPMENT CORPORATION (AHDC)
   307 CUMBERLAND AVENUE, PORTLAND, MAINE, 04101
2. CONSULTANT:
   RANSOM CONSULTING, LLC
   400 COMMERCIAL STREET, SUITE 404, PORTLAND, MAINE 04101
3. ZONING: VILLAGE CENTER (VC) DISTRICT
4. NO PONDS, FLOODPLAINS, SIGNIFICANT WILDLIFE HABITS, OR FISHERIES WERE IDENTIFIED WITHIN 500FT OF THE PROJECT PARCEL BOUNDARIES
5. REFER TO SURVEY CONDUCTED BY OWEN HASKELL, INC. FOR THE LOCATION AND SIZE OF EXISTING UTILITIES SERVICING THE SITE.
6. REFER TO THE CLASS A HIGH INTENSITY SOIL SURVEY CONDUCTED BY ALBERT FRICK ASSOCIATES, INC. INCLUDED IN THE SOIL NARRATIVE REPORT FOR DETAILED INFORMATION OF SITE SOILS.
7. STORMWATER FOREST BUFFER SHALL BE DELINEATED IN ACCORDANCE WITH MAINE DEP STANDARDS.
8. AREA EAST OF STREAM NOT TO BE DEVELOPED AS PART OF THIS DEVELOPMENT EXCEPT FOR BACKUP SEPTIC FIELD LOCATION, TRAIL MAINTENANCE, AND NECESSARY UTILITIES.

FOR PERMITTING

Site:

AVESTA GRAY MEADOWVIEW II

16 HANCOCK STREET
GRAY, MAINE

Prepared for:

AVESTA HOUSING
307 CUMBERLAND AVENUE
PORTLAND, MAINE, 04101

Civil Engineer:

STAMP
STATE OF MAINE
MAUREEN P.

MAUR
RANSOM CONSULTING, LLC
400 COMMERCIAL STREET, SUITE 404
PORTLAND, ME 04101
207-772-2891

Architect:

JSA DESIGN
273 CORPORATE DRIVE, SUITE 100
PORTSMOUTH, NH, 03801

Structural/Mechanical:

ALLIED ENGINEERING, INC.
160 VERANDA STREET
PORTLAND, MAINE, 04103

Soil Scientist/Site Evaluator:

ALBERT FRICK ASSOCIATES, INC.
380B MAIN STREET
GORHAM, MAINE, 04038

Landscape Architect:

RASOR LANDSCAPE ARCHITECTURE
87 MAIN STREET
YARMOUTH, MAINE, 04096

Surveyor:

OWEN HASKELL, INC.
390 US ROUTE 1, UNIT 10
FALMOUTH, MAINE, 04105

SCALE

0 30 60 120

SCALE in FEET
1"=60'

RANSOM
Consulting, LLC.

400 Commercial Street, Suite 404
Portland, ME 04101
Tel: (207) 772-2891
Fax: (207) 772-3248
www.ransomenv.com

OVERALL SITE INVENTORY PLAN

No.	Revision/Issue	Date
B	PLANNING BOARD/DEP REVIEW	5/19/22
A	PERMITTING	1/28/22

Design by: DJV	Checked by: MPM
Drawn by: DJV	Approved by: JIM/MPM
Project: 191.06051	Date: DECEMBER 2019

Sheet No:

C1.0

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NORTH

N/F
Beehive Properties, LLC
32071/336

N/F
Gray Housing Associates
7056/80

1" iron rebar

S03°24'07"E 896.68'

APPLICANT TO PROVIDE PUBLIC ACCESS TRAIL EASEMENT TO THE TOWN OF GRAY; SUBJECT TO SPECIFIC TERMS, AND METES AND BOUNDS.

N/F
Jean S. Dunn
Lloyd A. Dunn
16721/339
(parcel 2)

1" iron pipe

drill hole in boulder

S54°58'59"E 24.00'

S33°26'27"W 96.40'

1" iron pipe

1" iron pipe

N33°26'27"E 15.48'

ACCESS EASEMENT CONVEYED BY APPLICANT TO THE SELLER OF THE DUNN LAND (SHOWN HATCHED)

172.34'

N53°57'25"W

trail

trail

S07°20'44"E 86.76'

1" iron pipe

capped iron rebar 2021

BACKUP LOCATION FOR SEPTIC FIELD. APPLICANT SHALL RECORD AN EASEMENT OVER THIS AREA THAT PROHIBITS THE CONSTRUCTION OF BUILDINGS.

N/F
Beehive Properties, LLC
32071/336

N05°04'07"E 413.33'

trail

220.80'
S07°15'29"E

1" iron pipe

S10°08'23"E 33.00'

24" CMP

N/F
The Maine Narrow Gauge Railroad and Industrial Heritage Trust, D/B/A Maine Narrow Gauge Railroad Company & Museum
34755/58

S79°43'07"W 570.43'

1" iron pipe with flange

S10°08'40"W 312.38'

1.75" iron pipe

1" iron pipe

shed

shed

N/F
Kelly A. Jarvis
34200/185

illegible capped iron rebar

PROPOSED COMMUNITY GARDEN

PROPOSED SHED

PROPOSED GAZEBO

CONDO UNIT #2 CONSISTS OF THE ONE PROPOSED BUILDING (26 APARTMENT UNITS TOTAL)

PROPOSED ENGINEERED DISPOSAL FIELD

PROPOSED SHED

N/F
Cynthia L. McFarland
17870/280

N/F
Sharon M. Morey
Christopher J. Morey
35002/57

S33°32'29"E 164.82'

transformer

bituminous walkway

CONDO UNIT #1 CONSISTS OF THE THREE EXISTING BUILDINGS (20 APARTMENTS TOTAL)

bituminous drive

PROPOSED PARKING AREA

bituminous walkway

capped iron rebar 2021

capped iron rebar 2021 0.9' above grade

12"X18" granite monument with drill hole laying on side

1" iron pipe

1-1/4" iron pipe

1-3/4" iron pipe

1" iron pipe

N/F
Daniel Morey
Marie C. Morey
28774/214

capped iron rebar 1057

Hancock Street

bituminous drive

1-1/2" iron pipe

bituminous drive

1-3/4" iron pipe

3/4" iron pipe

S09°24'15"E 139.99'

S23°47'14"W 20.23'

THAT PORTION OF HANCOCK STREET SOUTHERLY OF THIS LINE TO BE DISCONTINUED

S80°10'29"E 140.59'

N10°33'57"W 72.68'

S15°18'57"W 152.78'

CB=N 07°25'06" E L=46.87'

R=170.00' L=64.45' CB=S04°27'20"W C=64.06'

bituminous drive

bituminous drive

bituminous drive

OH

OH

OH

NORTH

STORAGE SHED WITH VEGETATIVE SCREENING. PLANTINGS TO BE DETERMINED BY LANDSCAPE ARCHITECT.

S53°57'25"E 407.87'

APPROXIMATE BOUNDARY OF VILLAGE MIXED USE GROWTH AREA BASED ON GEOREFERENCING OF FIGURE FROM GRAY COMPREHENSIVE PLAN SUMMARY 2020, PAGE 24

GENERAL RURAL VILLAGE MIXED USE GROWTH

75' STREAM SETBACK

GENERATOR PAD WITH FENCE

STORAGE AND GARDEN SHED

COMMUNITY GARDEN

BUILDING #2

TRASH/RECYCLING ENCLOSURE

9'X9' TRANSFORMER WITH VEGETATIVE SCREENING. REFER TO SHEET L-1 FOR DETAILS

PROTECT EXISTING TREE

GARDEN

TRASH

4' UTILITY WALKWAY IN PROXIMITY TO WETLAND

LARGE BOULDER. (TYP.) SEE DETAIL ON SHEET C2.2

5'-WDE WALKWAY (TYP.)

ACCESSIBLE BUILDING ENTRANCE GAZEBO

PROPOSED BUILDING #4 (26 UNITS) FFE 274.50

REMOVEABLE SPEED HUMP FOR TRAFFIC CALMING (TYP.)

ADA COMPLIANT CURB RAMP, TYP.

CURB TIPDOWN, TYP.

VAN ACCESSIBLE PARKING SPACE SIGN

BOLLARD, TYP.

ACCESSIBLE PARKING SPACE SIGN

SLIPFORM CONCRETE CURBUNG, TYP.

NO PARKING EMERGENCY ACCESS DRIVE

STONE DUST PATH TO ACCESS PUMP STATION. REFER TO UTILITY PLAN ON SHEET C1.4

SNOW STORAGE AREA (TYP.)

50' MULTI-FAMILY HOUSING PERIMETER BUFFER STRIP

DETECTABLE WARNING SURFACE (TYP.)

BUILDING #1

ONE PROPOSED PARKING SPACE

BUILDING #3

VEGETATED ISLAND

"DO NOT ENTER" "STOP" W/ 12"SL

SNOW STORAGE

SNOW STORAGE

MAINTAIN MIN. SETBACKS BETWEEN ACCESS AND STRUCTURES LISTED BELOW
BOLLARD: 2'
EXISTING SEPTIC TANK: 4'

BOLLARD

NO PARKING EMERGENCY ACCESS DRIVE

12'-WIDE PAVED ACCESS

VEHICLE OVERHANG (TYP.)

TIRE TRACKING PATH (TYP.)

GRASS ON GRAVEL AREA FOR POTENTIAL FUTURE PARKING SPACES, NEED NOT BE BUILT

APPLICANT TO INSTALL NEW 5' WIDE SIDEWALK FROM THIS POINT TO THE INTERSECTION OF HANCOCK STREET. FINAL DESIGN/ALIGNMENT WILL BE BASED ON AN ONSITE MEETING WITH TOWN STAFF, THE APPLICANT AND THE GRAY WATER DISTRICT.

SAWCUT, TYP.

PICK UP AND DROP OFF ACCESS FOR BUILDING #4 MEADOWVIEW II

SNOW STORAGE

SNOW STORAGE

50'

E-ONE HP100 Aerial GRAY FD

Overall Length	44.500ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.193ft
Track Width	8.323ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

FOR PERMITTING

GENERAL NOTES:

1. TOTAL SITE AREA: ±15.5 ACRES
2. ZONING DISTRICT: VILLAGE CENTER (VC)
3. RECORD OWNER: GRAY SENIOR HOUSING, INC.
   C/O AVESTA HOUSING
   307 CUMBERLAND AVENUE
   PORTLAND, ME 04101
4. APPLICANT: AVESTA HOUSING DEVELOPMENT CORPORATION
   307 CUMBERLAND AVENUE
   PORTLAND, ME 04101
5. TAX MAP: MAP 43, LOT 405-39; MAP 44, LOT 405-43
6. BOOK AND PAGE: PARCEL A: CCRD BOOK 3676, PAGE 265; CCRD BOOK 3605, PAGE 257;
   PARCEL B & B1: CCRD BOOK 3780, PAGE 194;
   PARCEL C & C1: CCRD BOOK 16721, PAGE 339
7. PROJECT ADDRESS: 16 HANCOCK STREET
8. SPACE AND BULK:

	ALLOWED	PROPOSED
FRONT SETBACK	0 FT	>0 FT
SIDE SETBACK	0 FT	>0 FT
REAR SETBACK	0 FT	>0 FT
LOT COVERAGE	75%	<75%
BUILDING HEIGHT	35 FT.	<35 FT

9. BOOK AND PAGE REFERENCES ARE TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS UNLESS OTHERWISE NOTED.
10. BEARINGS ARE REFERENCED TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, NAD83, WEST ZONE.
11. RESULTS OF NITRATE-NITROGEN MODELING PERFORMED FOR THE PROPOSED SEPTIC SYSTEM INDICATE THAT NITRATE-NITROGEN CONCENTRATIONS AT THE NEAREST DOWNGRADIENT PROPERTY LINE, 43 FEET FROM THE DISPOSAL FIELD EDGE, ARE ANTICIPATED TO BE 5.25 MILLIGRAMS PER LITER.

UNIT COUNT:

EXISTING UNITS: 20
PROPOSED UNITS: 27
TOTAL: 47 UNITS

PARKING CALCULATIONS:

EXISTING SPACES: 26 SPACES

REQUIRED SPACES:

SENIOR CITIZEN HOUSING, INDEPENDENT LIVING
0.6/DWELLING UNIT X 47 DWELLING UNITS= 29 SPACES

PROVIDED SPACES: 41 SPACES, MIN.
45 SPACES, MAX.

Site:

AVESTA GRAY MEADOWVIEW II

16 HANCOCK STREET
GRAY, MAINE

Prepared for:

AVESTA HOUSING
307 CUMBERLAND AVENUE
PORTLAND, MAINE, 04101

Civil Engineer:

STAMP
STATE OF MAINE
MAUREEN

MAUREEN P. MCGLONE, PE #7705
RANSOM CONSULTING, LLC
400 COMMERCIAL STREET, SUITE 404
PORTLAND, ME 04101
207-772-2891

Architect:

JSA DESIGN
273 CORPORATE DRIVE, SUITE 100
PORTSMOUTH, NH, 03801

Structural/Mechanical:

ALLIED ENGINEERING, INC.
160 VERANDA STREET
PORTLAND, MAINE, 04103

Soil Scientist/Site Evaluator:

ALBERT FRICK ASSOCIATES, INC.
380B MAIN STREET
GORHAM, MAINE, 04038

Landscape Architect:

RASOR LANDSCAPE ARCHITECTURE
87 MAIN STREET
YARMOUTH, MAINE, 04096

Surveyor:

OWEN HASKELL, INC.
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SCALE

0 10 20 40

SCALE in FEET
1"=20'

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SITE PLAN

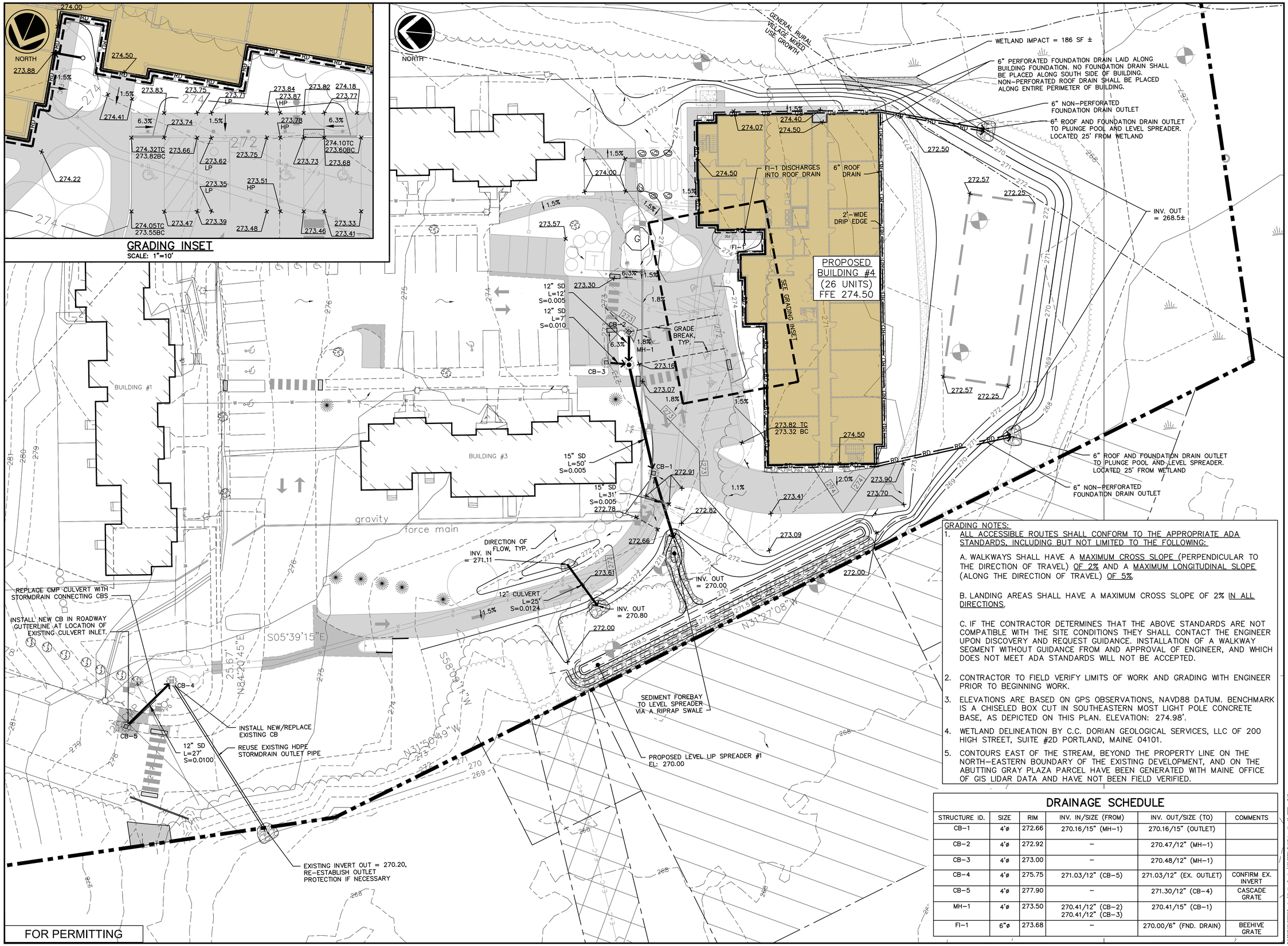
No.	Revision/Issue	Date
B	PLANNING BOARD/DEP REVIEW	5/19/22
A	PERMITTING	1/28/22

Design by: DJV	Checked by: MPM
Drawn by: DJV	Approved by: JIM/MPM
Project: 191.06051	Date: DECEMBER 2019

Sheet No: C1.2

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GRADING INSET
SCALE: 1"=10'



FOR PERMITTING

GRADING NOTES:

1. ALL ACCESSIBLE ROUTES SHALL CONFORM TO THE APPROPRIATE ADA STANDARDS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

   A. WALKWAYS SHALL HAVE A MAXIMUM CROSS SLOPE (PERPENDICULAR TO THE DIRECTION OF TRAVEL) OF 2% AND A MAXIMUM LONGITUDINAL SLOPE (ALONG THE DIRECTION OF TRAVEL) OF 5%.

   B. LANDING AREAS SHALL HAVE A MAXIMUM CROSS SLOPE OF 2% IN ALL DIRECTIONS.

   C. IF THE CONTRACTOR DETERMINES THAT THE ABOVE STANDARDS ARE NOT COMPATIBLE WITH THE SITE CONDITIONS THEY SHALL CONTACT THE ENGINEER UPON DISCOVERY AND REQUEST GUIDANCE. INSTALLATION OF A WALKWAY SEGMENT WITHOUT GUIDANCE FROM AND APPROVAL OF ENGINEER, AND WHICH DOES NOT MEET ADA STANDARDS WILL NOT BE ACCEPTED.

2. CONTRACTOR TO FIELD VERIFY LIMITS OF WORK AND GRADING WITH ENGINEER PRIOR TO BEGINNING WORK.
3. ELEVATIONS ARE BASED ON GPS OBSERVATIONS, NAVD88 DATUM. BENCHMARK IS A CHISELED BOX CUT IN SOUTHEASTERN MOST LIGHT POLE CONCRETE BASE, AS DEPICTED ON THIS PLAN. ELEVATION: 274.98'.
4. WETLAND DELINEATION BY C.C. DORIAN GEOLOGICAL SERVICES, LLC OF 200 HIGH STREET, SUITE #2D PORTLAND, MAINE 04101.
5. CONTOURS EAST OF THE STREAM, BEYOND THE PROPERTY LINE ON THE NORTH-EASTERN BOUNDARY OF THE EXISTING DEVELOPMENT, AND ON THE ABUTTING GRAY PLAZA PARCEL HAVE BEEN GENERATED WITH MAINE OFFICE OF GIS LIDAR DATA AND HAVE NOT BEEN FIELD VERIFIED.

DRAINAGE SCHEDULE

STRUCTURE ID.	SIZE	RIM	INV. IN/SIZE (FROM)	INV. OUT/SIZE (TO)	COMMENTS
CB-1	4'ø	272.66	270.16/15" (MH-1)	270.16/15" (OUTLET)	
CB-2	4'ø	272.92	–	270.47/12" (MH-1)	
CB-3	4'ø	273.00	–	270.48/12" (MH-1)	
CB-4	4'ø	275.75	271.03/12" (CB-5)	271.03/12" (EX. OUTLET)	CONFIRM EX. INVERT
CB-5	4'ø	277.90	–	271.30/12" (CB-4)	CASCADE GRATE
MH-1	4'ø	273.50	270.41/12" (CB-2) 270.41/12" (CB-3)	270.41/15" (CB-1)	
FI-1	6"ø	273.68	–	270.00/6" (FND. DRAIN)	BEEHIVE GRATE

Site:

AVESTA GRAY MEADOWVIEW II
16 HANCOCK STREET
GRAY, MAINE

Prepared for:

Prepared for:

AVESTA HOUSING
307 CUMBERLAND AVENUE
PORTLAND, MAINE, 04101

Civil Engineer:

STAMP
STATE OF MAINE
MAUREEN P. MCGLONE
[redacted]

MAUREEN P. MCGLONE, PE #7705
RANSOM CONSULTING, LLC
400 COMMERCIAL STREET, SUITE 404
PORTLAND, ME 04101
207-772-2891

Architect:

JSA DESIGN
273 CORPORATE DRIVE, SUITE 100
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Soil Scientist/Site Evaluator:

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RASOR LANDSCAPE ARCHITECTURE
87 MAIN STREET
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SCALE

0 10 20 40
SCALE in FEET
1"=20'

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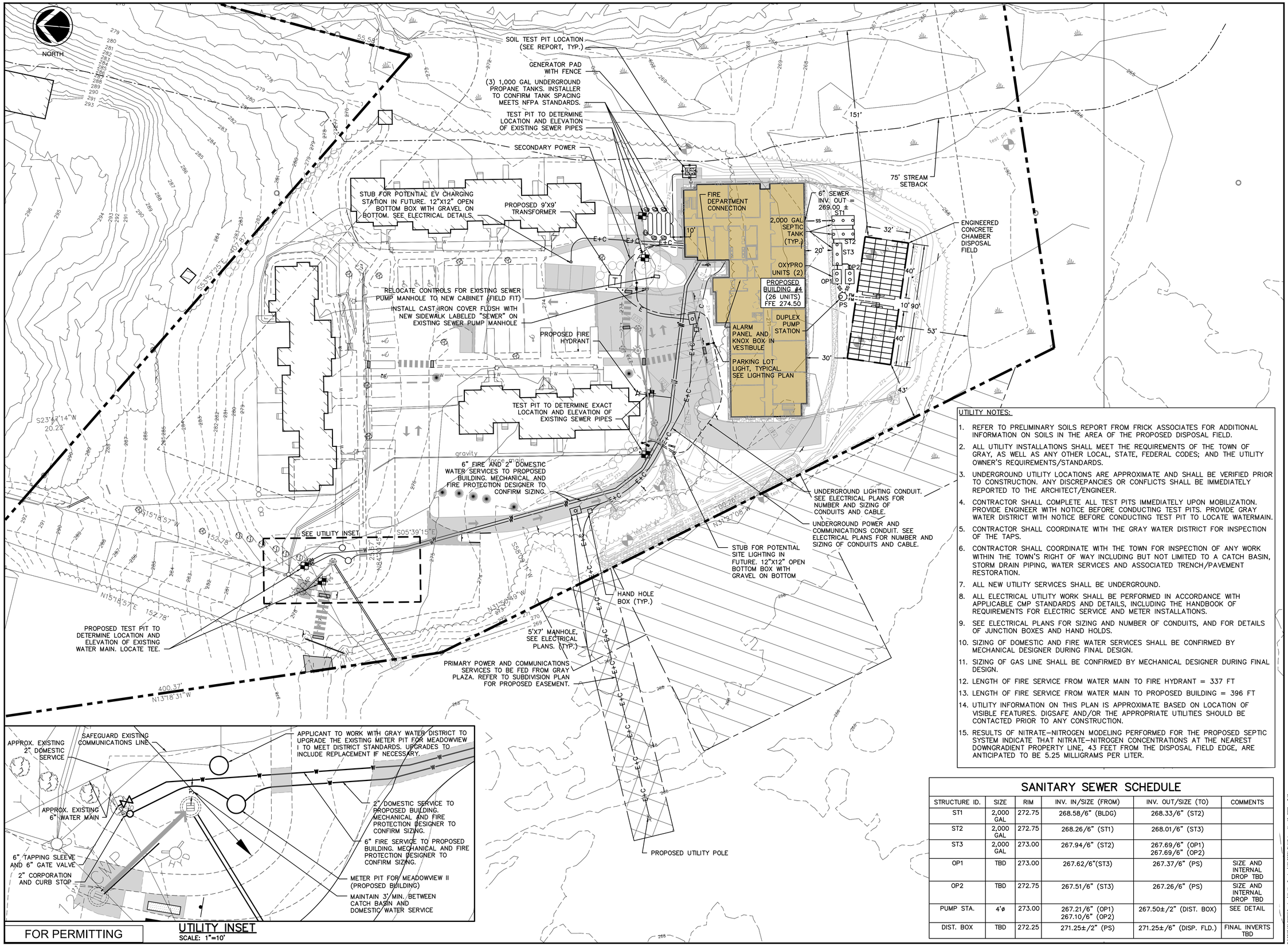
GRADING AND DRAINAGE PLAN

No.	Revision/Issue	Date
B	PLANNING BOARD/DEP REVIEW	5/19/22
A	PERMITTING	1/28/22

Design by: DJV	Checked by: MPM
Drawn by: DJV	Approved by: JIM/MPM
Project: 191.06051	Date: DECEMBER 2019

Sheet No: C1.3

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UTILITY INSET
SCALE: 1"=10'

FOR PERMITTING

UTILITY NOTES:

1. REFER TO PRELIMINARY SOILS REPORT FROM FRICK ASSOCIATES FOR ADDITIONAL INFORMATION ON SOILS IN THE AREA OF THE PROPOSED DISPOSAL FIELD.
2. ALL UTILITY INSTALLATIONS SHALL MEET THE REQUIREMENTS OF THE TOWN OF GRAY, AS WELL AS ANY OTHER LOCAL, STATE, FEDERAL CODES; AND THE UTILITY OWNER'S REQUIREMENTS/STANDARDS.
3. UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES OR CONFLICTS SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER.
4. CONTRACTOR SHALL COMPLETE ALL TEST PITS IMMEDIATELY UPON MOBILIZATION. PROVIDE ENGINEER WITH NOTICE BEFORE CONDUCTING TEST PITS. PROVIDE GRAY WATER DISTRICT WITH NOTICE BEFORE CONDUCTING TEST PIT TO LOCATE WATERMAIN.
5. CONTRACTOR SHALL COORDINATE WITH THE GRAY WATER DISTRICT FOR INSPECTION OF THE TAPS.
6. CONTRACTOR SHALL COORDINATE WITH THE TOWN FOR INSPECTION OF ANY WORK WITHIN THE TOWN'S RIGHT OF WAY INCLUDING BUT NOT LIMITED TO A CATCH BASIN, STORM DRAIN PIPING, WATER SERVICES AND ASSOCIATED TRENCH/PAVEMENT RESTORATION.
7. ALL NEW UTILITY SERVICES SHALL BE UNDERGROUND.
8. ALL ELECTRICAL UTILITY WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CMP STANDARDS AND DETAILS, INCLUDING THE HANDBOOK OF REQUIREMENTS FOR ELECTRIC SERVICE AND METER INSTALLATIONS.
9. SEE ELECTRICAL PLANS FOR SIZING AND NUMBER OF CONDUITS, AND FOR DETAILS OF JUNCTION BOXES AND HAND HOLDS.
10. SIZING OF DOMESTIC AND FIRE WATER SERVICES SHALL BE CONFIRMED BY MECHANICAL DESIGNER DURING FINAL DESIGN.
11. SIZING OF GAS LINE SHALL BE CONFIRMED BY MECHANICAL DESIGNER DURING FINAL DESIGN.
12. LENGTH OF FIRE SERVICE FROM WATER MAIN TO FIRE HYDRANT = 337 FT
13. LENGTH OF FIRE SERVICE FROM WATER MAIN TO PROPOSED BUILDING = 396 FT
14. UTILITY INFORMATION ON THIS PLAN IS APPROXIMATE BASED ON LOCATION OF VISIBLE FEATURES. DIGSAFE AND/OR THE APPROPRIATE UTILITIES SHOULD BE CONTACTED PRIOR TO ANY CONSTRUCTION.
15. RESULTS OF NITRATE-NITROGEN MODELING PERFORMED FOR THE PROPOSED SEPTIC SYSTEM INDICATE THAT NITRATE-NITROGEN CONCENTRATIONS AT THE NEAREST DOWNGRADIENT PROPERTY LINE, 43 FEET FROM THE DISPOSAL FIELD EDGE, ARE ANTICIPATED TO BE 5.25 MILLIGRAMS PER LITER.

SANITARY SEWER SCHEDULE

STRUCTURE ID.	SIZE	RIM	INV. IN/SIZE (FROM)	INV. OUT/SIZE (TO)	COMMENTS
ST1	2,000 GAL	272.75	268.58/6" (BLDG)	268.33/6" (ST2)	
ST2	2,000 GAL	272.75	268.26/6" (ST1)	268.01/6" (ST3)	
ST3	2,000 GAL	273.00	267.94/6" (ST2)	267.69/6" (OP1) 267.69/6" (OP2)	
OP1	TBD	273.00	267.62/6"(ST3)	267.37/6" (PS)	SIZE AND INTERNAL DROP TBD
OP2	TBD	272.75	267.51/6" (ST3)	267.26/6" (PS)	SIZE AND INTERNAL DROP TBD
PUMP STA.	4'ø	273.00	267.21/6" (OP1) 267.10/6" (OP2)	267.50±/2" (DIST. BOX)	SEE DETAIL
DIST. BOX	TBD	272.25	271.25±/2" (PS)	271.25±/6" (DISP. FLD.)	FINAL INVERTS TBD

Site:

AVESTA GRAY MEADOWVIEW II

16 HANCOCK STREET
GRAY, MAINE

Prepared for:

AVESTA HOUSING
307 CUMBERLAND AVENUE
PORTLAND, MAINE, 04101

Civil Engineer:

STAMP
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[redacted]

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Surveyor:

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SCALE

0 15 30 60
SCALE in FEET
1"=30'

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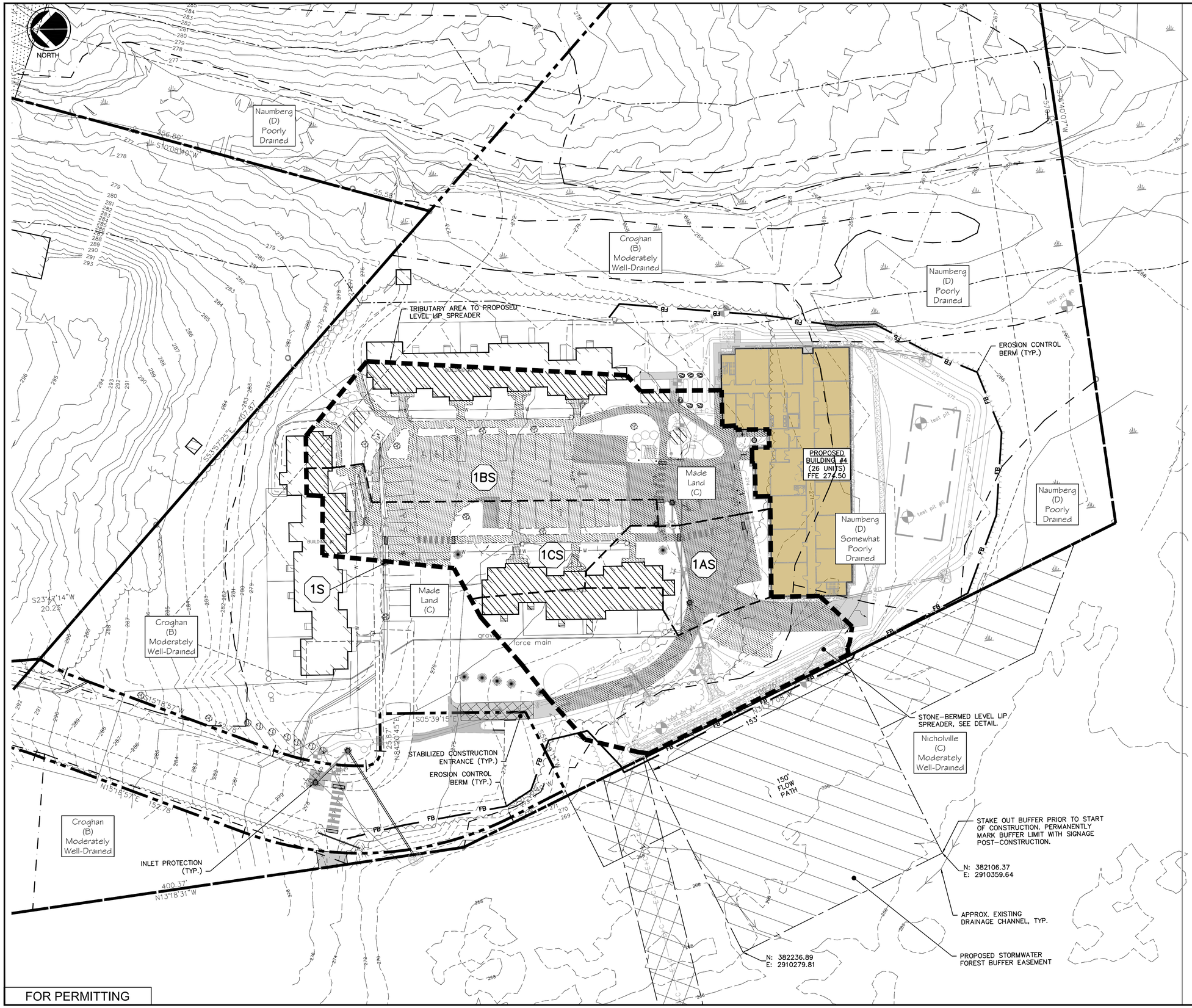
UTILITY PLAN

No.	Revision/Issue	Date
B	PLANNING BOARD/DEP REVIEW	5/19/22
A	PERMITTING	1/28/22

Design by: DJV | Checked by: MPM
Drawn by: DJV | Approved by: JIM/MPM
Project: 191.06051 | Date: DECEMBER 2019

Sheet No: C1.4

P:\2019\191.06051\Drawings\Working Drawings\191.06051 PLANS.dwg May 19, 2022 - 7:15am



FOR PERMITTING

LEGEND:

- SUBCATCHMENT AREA
- SOIL BOUNDARY
- test pit #4 — SOIL TEST PIT NUMBER
- ROOF, HSG C (8,671 SF/0.20 AC)
- EXISTING/PROPOSED PAVEMENT, HSG C (26,414 SF/0.61 AC)
- LAWN, HSG C (26,749 SF/0.61 AC)
- 1S — SUBCATCHMENT LABEL
- FB — EROSION CONTROL BERM
- STABILIZED CONSTRUCTION ENTRANCE

Site:

AVESTA GRAY MEADOWVIEW II

16 HANCOCK STREET
GRAY, MAINE

Prepared for:

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PORTLAND, MAINE, 04101

Civil Engineer:

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SCALE

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SCALE in FEET
1"=30'

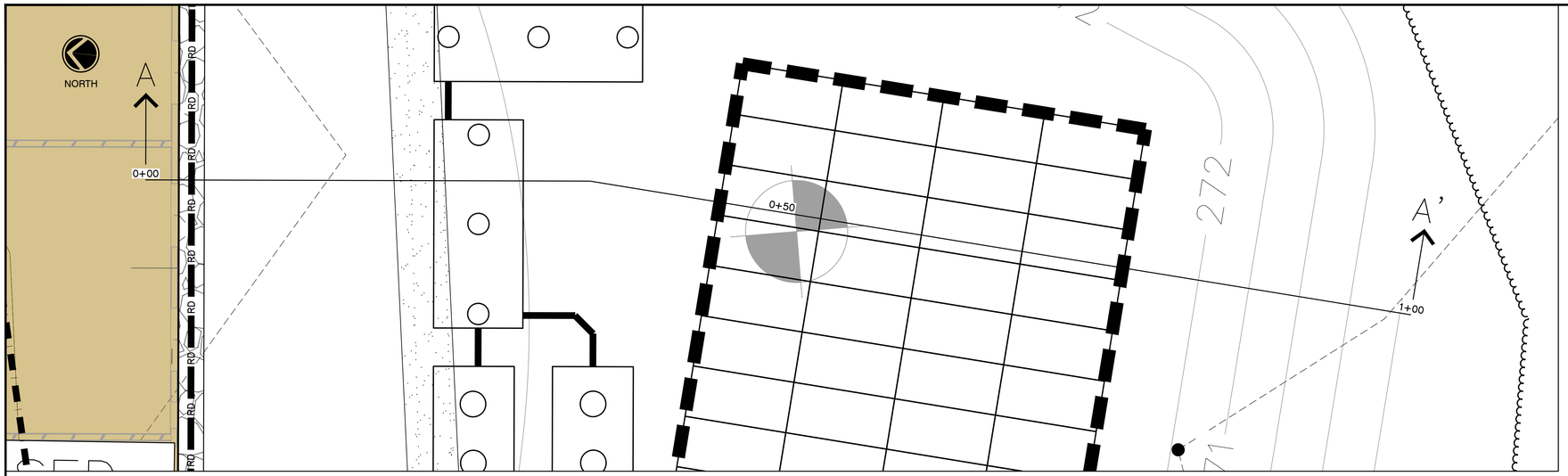
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STORMWATER AND EROSION CONTROL PLAN

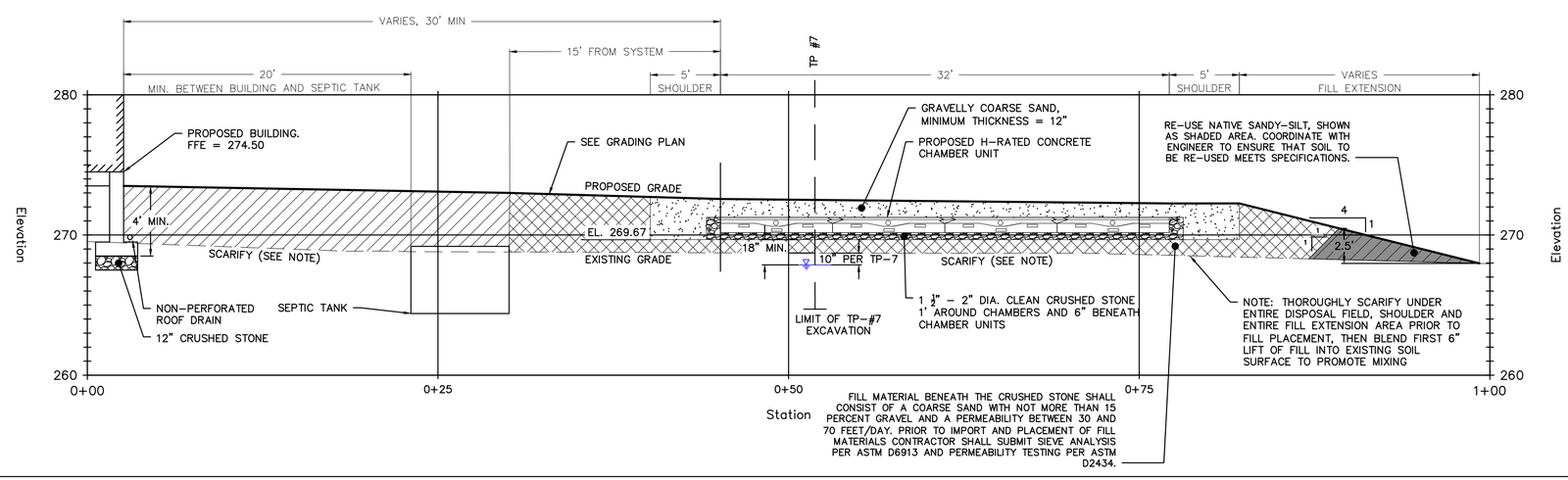
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Design by: DJV	Checked by: MPM
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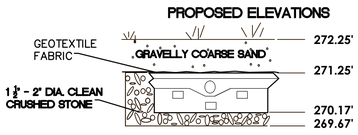
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PLAN
SCALE: 1"=5'



SECTION A-A'
SCALE: 1"=5'



CONCRETE CHAMBER DETAIL
NOT TO SCALE

FOR PERMITTING

LEGEND:

- SOIL BOUNDARY
- test pit #4 — SOIL TEST PIT NUMBER
- GRAVELLY COARSE SAND
- CRUSHED STONE
- COARSE SAND
- RE-USE NATIVE SOIL

Site:

AVESTA GRAY MEADOWVIEW II
16 HANCOCK STREET
GRAY, MAINE

Prepared for:

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PORTLAND, MAINE, 04101

Civil Engineer:

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SCALE

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SCALE in FEET
1"=5'

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SEPTIC SECTION

No.	Revision/Issue	Date
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A	PERMITTING	1/28/22

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Sheet No:

C1.6

EROSION AND SEDIMENTATION CONTROL NOTES

INSPECTION REQUIREMENTS

CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENTATION CONTROL MEASURES ON A WEEKLY BASIS AND AFTER RAIN/STORM EVENTS AND SHALL KEEP A LOG OF THESE INSPECTIONS. ANY ISSUES IDENTIFIED SHALL BE ADDRESSED AS SOON AS POSSIBLE AND BEFORE ADDITIONAL PRECIPITATION.

EROSION CONTROL MEASURES AND SITE STABILIZATION

THE PRIMARY EMPHASIS OF THE EROSION AND SEDIMENT CONTROL PLAN IS AS FOLLOWS:

- RAPID VEGETATION OF EXPOSED AREAS TO MINIMIZE THE PERIOD OF SOIL EXPOSURE.
- RAPID STABILIZATION OF DRAINAGE PATHS TO AVOID CHANNEL EROSION.
- THE USE OF ON–SITE MEASURES TO CAPTURE SEDIMENT (EROSION CONTROL BERM, STAKED HAY BALES ETC.)

THE FOLLOWING TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL DEVICES WILL BE IMPLEMENTED AS PART OF THE SITE DEVELOPMENT. THESE DEVICES SHALL BE INSTALLED AS INDICATED ON THE PLANS OR AS DESCRIBED WITHIN THIS REPORT. FOR FURTHER REFERENCE, SEE THE MAINE EROSION AND SEDIMENT CONTROL BMPS, (MOST RECENT REVISION).

TEMPORARY EROSION CONTROL MEASURES

THE FOLLOWING MEASURES ARE PLANNED AS TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION. THESE TEMPORARY EROSION CONTROL MEASURES SHOULD BE REMOVED WITHIN 30 DAYS AFTER PERMANENT STABILIZATION HAS BEEN ESTABLISHED.

1. CRUSHED STONE–STABILIZED CONSTRUCTION ENTRANCES SHALL BE PLACED AT SITE ENTRANCES.
2. WOOD WASTE COMPOST BERMS (EROSION CONTROL BERM) SHALL BE INSTALLED DOWNSTREAM OF ANY DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL THE TRIBUTARY AREAS ARE VEGETATED. THE EROSION CONTROL BERMS SHALL BE INSTALLED PER THE DETAILS PROVIDED AND INSPECTED REGULARLY, INCLUDING BEFORE AND AFTER A STORM EVENT OF 0.5 INCHES OR GREATER. REPAIRS SHALL BE MADE IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE OR BERM LINE. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND FENCE OR BERM, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM.
3. STRAW, HAY MULCH AND HYDROSEEDING IS INTENDED TO PROVIDE COVER FOR BARE OR SEEDED AREAS UNTIL VEGETATION IS ESTABLISHED AND SHOULD BE APPLIED WITHIN 7 DAYS AT A RATE OF 115 POUNDS PER 1000 SQUARE FEET. MULCH PLACED BETWEEN APRIL 15TH AND OCTOBER 15TH (ON SLOPES OF LESS THEN 15 PERCENT) SHALL BE ANCHORED BY APPLYING WATER. MULCH PLACED ON SLOPES OF EQUAL TO OR STEEPER THAN 15 PERCENT SHALL BE COVERED BY FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION. SLOPES STEEPER THAN 3:1 SHALL RECEIVE EROSION CONTROL BLANKETS OR RIP RAP.
4. USE STANDARD CONSERVATION SEED MIX OF 100% ANNUAL RYE GRASS OR FIELD BROMEGRASS. SEED APPLICATION RATE SHALL BE 40 LB/ACRE.
5. TEMPORARY STOCKPILES OF STUMPS, GRUBBINGS, OR COMMON EXCAVATION WILL BE PROTECTED AS FOLLOWS:

   STOCKPILES SHALL BE STABILIZED WITHIN SEVEN DAYS BY EITHER TEMPORARILY SEEDING THE STOCKPILE BY A HYDROSEED METHOD CONTAINING AN EMULSIFIED MULCH TACKIFIER OR BY COVERING THE STOCKPILE WITH MULCH, SUCH AS SHREDDED HAY, STRAW, OR EROSION CONTROL MIX.

   STOCKPILES SHALL BE SURROUNDED BY SEDIMENTATION BARRIER AT THE TIME OF FORMATION.
6. ALL DISTURBED AREAS THAT ARE WITHIN 75 FEET OF AN UNDISTURBED WETLAND SHALL RECEIVE MULCH OR EROSION CONTROL MESH FABRIC WITHIN 48 HOURS OF INITIAL DISTURBANCE OF SOIL. ALL AREAS WITHIN 75 FEET OF AN UNDISTURBED WETLAND SHALL BE MULCHED PRIOR TO ANY PREDICTED RAIN EVENT REGARDLESS OF THE 48 HOUR WINDOW. IN OTHER AREAS, THE TIME PERIOD MAY BE EXTENDED TO 7 DAYS.
7. STATE AND LOCAL ROADS SHALL BE SWEPT TO CONTROL MUD AND DUST AS NECESSARY. ADDITIONAL STONE SHALL BE ADDED TO THE STABILIZED CONSTRUCTION ENTRANCE TO MINIMIZE THE TRACKING OF MATERIAL OFF THE SITE AND ONTO THE SURROUNDING ROADWAYS.
8. WATER AND/OR CALCIUM CHLORIDE SHALL BE FURNISHED AND APPLIED IN ACCORDANCE WITH MDOT SPECIFICATIONS––SECTION 637–DUST CONTROL.
9. LOAM AND SEED IS INTENDED TO SERVE AS THE PRIMARY PERMANENT VEGETATIVE MEASURE FOR ALL BARE AREAS NOT PROVIDED WITH OTHER EROSION CONTROL MEASURES, SUCH AS RIPRAP.
10. WATER FROM CONSTRUCTION TRENCH DEWATERING OR TEMPORARY STREAM DIVERSION SHALL PASS FIRST THROUGH A FILTER BAG OR SECONDARY CONTAINMENT STRUCTURE (E.G. HAY BALE LINED POOL) PRIOR TO DISCHARGE. THE DISCHARGE SITE SHALL BE SELECTED TO AVOID FLOODING, ICING, AND SEDIMENT DISCHARGES TO A PROTECTED RESOURCE. IN NO CASE SHALL THE FILTER BAG OR CONTAINMENT STRUCTURE BE LOCATED WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE.

PERMANENT EROSION CONTROL MEASURES

THE FOLLOWING PERMANENT EROSION CONTROL MEASURES HAVE BEEN DESIGNED AS PART OF THE EROSION/SEDIMENTATION CONTROL PLAN:

ALL AREAS DISTURBED DURING CONSTRUCTION, BUT NOT SUBJECT TO OTHER RESTORATION (GRAVEL, PAVERS, RIPRAP, ETC.) WILL BE LOAMED, LIMED, FERTILIZED, MULCHED, AND SEEDED.

IMPLEMENTATION SCHEDULE

THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE REQUIRED TO INSURE THE EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES ARE OPTIMIZED:

NOTE: FOR ALL GRADING ACTIVITIES, THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO OVEREXPOSE THE SITE BY LIMITING THE DISTURBED AREA. THE CONSTRUCTION OF BMPS SHOULD EITHER BE PERFORMED AFTER THE TRIBUTARY AREA IS STABILIZED OR TEMPORARY EROSION CONTROL MEASURES NEED TO BE IMPLEMENTED TO PROTECT THE BMPS FROM BEING CLOGGED WITH CONSTRUCTION SEDIMENT.

1. INSTALL CRUSHED STONE TO STABILIZED CONSTRUCTION ENTRANCES.
2. INSTALL PERIMETER EROSION CONTROL BERM.
3. CLEAR AND GRUB SITE WITHIN THE SPECIFIED CLEARING LIMITS.
4. COMMENCE EARTHWORK AND GRADING TO SUBGRADE.
5. COMMENCE CONSTRUCTION OF BUILDING FOUNDATION.
6. CONTINUE EARTHWORK AND GRADING TO SUBGRADE AS NECESSARY FOR CONSTRUCTION.
7. COMPLETE INSTALLATION OF DRAINAGE INFRASTRUCTURE.
8. COMPLETE INSTALLATION OF UTILITY INFRASTRUCTURE.
7. COMPLETE REMAINING EARTHWORK OPERATIONS.
8. INSTALL SUBBASE AND BASE GRAVEL WITHIN PROPOSED PARKING LOT.
9. LOAM, LIME, FERTILIZE, SEED AND MULCH DISTURBED AREAS.
10. ONCE THE SITE IS STABILIZED AND A 90% CATCH OF VEGETATION HAS BEEN OBTAINED, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
11. TOUCH UP LOAM AND SEED.

NOTE: ALL BARE AREAS NOT SUBJECT TO RIPRAP, OR GRAVEL; SHALL BE VEGETATED.

PRIOR TO CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT TO THE OWNER A SCHEDULE FOR THE COMPLETION OF THE WORK, WHICH WILL SATISFY THE ABOVE CONSTRUCTION SEQUENCE IN THE SPECIFIED ORDER, HOWEVER, SEVERAL SEPARATE ITEMS MAY BE CONSTRUCTED SIMULTANEOUSLY. WORK MUST ALSO BE SCHEDULED OR PHASED TO REDUCE THE EXTENT OF THE EXPOSED AREAS AS SPECIFIED BELOW. THE INTENT OF THIS SEQUENCE IS TO PROVIDE FOR EROSION CONTROL AND TO HAVE STRUCTURAL MEASURES SUCH AS EROSION CONTROL BERM AND CONSTRUCTION ENTRANCES IN PLACE BEFORE LARGE AREAS OF LAND ARE STRIPPED.

THE WORK SHALL BE CONDUCTED IN SECTIONS WHICH SHALL:

1. LIMIT THE AMOUNT OF EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDERTAKEN DURING THE PRECEDING 30 DAYS.
2. VEGETATE THE DISTURBED AREAS AS RAPIDLY AS POSSIBLE. ALL AREAS SHALL BE PERMANENTLY STABILIZED WITHIN SEVEN DAYS OF FINAL GRADING OR BEFORE A STORM EVENT; OR TEMPORARILY STABILIZED WITHIN 48 HOURS OF INITIAL DISTURBANCE OF SOIL FOR AREAS WITHIN 75 FEET OF AN UNDISTURBED WETLAND AND 7 DAYS FOR ALL OTHER AREAS.
3. INCORPORATE PLANNED INLETS AND DRAINAGE SYSTEM AS EARLY AS POSSIBLE INTO THE CONSTRUCTION PHASE.

WINTER STABILIZATION PLAN

THE WINTER CONSTRUCTION PERIOD IS FROM NOVEMBER 1 THROUGH APRIL 15. IF THE CONSTRUCTION SITE IS NOT STABILIZED WITH A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15TH, THEN THE SITE SHALL BE PROTECTED WITH OVER–WINTER STABILIZATION.

WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT ANY AREA LEFT EXPOSED CAN BE CONTROLLED BY THE CONTRACTOR. EXPOSED AREAS SHALL BE LIMITED TO THOSE AREAS IN WHICH WORK IS EXPECTED TO COMMENCE AND COMPLETE IN THE NEXT FIFTEEN (15) DAYS AND THAT CAN BE MULCHED WITHIN ONE DAY PRIOR TO ANY SNOW EVENT.

ALL AREAS SHALL BE CONSIDERED TO BE BARE UNTIL THE SUBBASE GRAVEL IS INSTALLED WITHIN PAVEMENT/BUILDING AREAS OR THE AREAS HAVE BEEN LOAMED, SEEDED AND MULCHED. HAY AND STRAW MULCH RATE SHALL BE A MINIMUM OF 150 POUNDS PER 1,000 SQUARE FEET (3 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED.

THE CONTRACTOR SHALL INSTALL ANY ADDED MEASURES, WHICH MAY BE NECESSARY TO CONTROL EROSION/SEDIMENTATION FROM THE SITE DEPENDENT UPON THE ACTUAL SITE AND WEATHER CONDITIONS. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, IN ORDER TO MINIMIZE AREAS WITHOUT EROSION CONTROL PROTECTION.

1. SOIL STOCKPILES

   STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR AT 150 LBS/1,000 SF. (3 TONS PER ACRE) OR WITH A FOUR–INCH LAYER OF WOODWASTE EROSION CONTROL MIX. THIS SHALL BE DONE WITHIN 24 HOURS OF STOCKING AND RE–ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. ANY SOIL STOCKPILE SHALL NOT BE PLACED (EVEN COVERED WITH HAY OR STRAW) WITHIN 100 FEET FROM ANY NATURAL RESOURCES.

2. SEDIMENT BARRIERS

   DURING FROZEN CONDITIONS, SEDIMENT BARRIERS SHALL CONSIST OF WOODWASTE FILTER BERMS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES AND SEDIMENT SILT FENCES.

3. MULCHING

   AN AREA SHALL BE CONSIDERED BARE UNTIL AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOAMED, SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 150 LB. PER 1,000 SQUARE FEET OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE OF 75–LBS./1,000 SF. OR 1.5 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. THE SNOW SHALL BE REMOVED DOWN TO A ONE–INCH DEPTH OR LESS PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA SHALL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 150 LB. PER 1,000 SQUARE FEET (3 TONS/ACRE) AND ADEQUATELY ANCHORED THAT GROUND SURFACE IS NOT VISIBLE THOUGH THE MULCH.

   BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE ANCHORED BY PEG LINE, MULCH NETTING, TRACKING, OR WOOD CELLULOSE FIBER. WHEN GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH THEN COVER IS SUFFICIENT. AFTER NOVEMBER 1ST, MULCH AND ANCHORING OF ALL BARE SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

4. MULCHING ON SLOPES AND DITCHES

   SLOPES SHALL NOT BE LEFT EXPOSED FOR ANY EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY MULCHED AND ANCHORED WITH PEG AND NETTING OR WITH EROSION CONTROL BLANKETS. MULCHING SHALL BE APPLIED AT A RATE OF 230 LBS/1,000 S.F. ON ALL SLOPES GREATER THAN 8%.

   MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%. EROSION CONTROL BLANKETS SHALL BE USED IN LIEU OF MULCH IN ALL DRAINAGE WAYS WITH SLOPES GREATER THAN 8%. EROSION CONTROL MIX CAN BE USED TO SUBSTITUTE EROSION CONTROL BLANKETS ON ALL SLOPES EXCEPT DITCHES.

5. SEEDING

   BETWEEN THE DATES OF OCTOBER 15TH AND APRIL 1ST, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES, FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF THREE TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. DORMANT SEEDING MAY BE SELECTED TO BE PLACED PRIOR TO THE PLACEMENT OF MULCH AND FABRIC NETTING ANCHORED WITH STAPLES. IF DORMANT SEEDING IS USED FOR THE SITE, ALL DISTURBED AREAS SHALL RECEIVE 4" OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS/1000 SF. ALL AREAS SEEDED DURING THE WINTER SHALL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 90% CATCH) SHALL BE REVEGETATED BY REPLACING LOAM, SEED AND MULCH. IF DORMANT SEEDING IS NOT USED FOR THE SITE, ALL DISTURBED AREAS SHALL BE REVEGETATED IN THE SPRING.

6. DEWATERING

   WATER FROM CONSTRUCTION TRENCH DEWATERING SHALL PASS FIRST THROUGH A FILTER BAG OR SECONDARY CONTAINMENT STRUCTURE (E.G. HAY BALE LINED POOL) PRIOR TO DISCHARGE. THE DISCHARGE SITE SHALL BE SELECTED TO AVOID FLOODING, ICING, AND SEDIMENT DISCHARGES TO A PROTECTED RESOURCE.

7. INSPECTION AND MONITORING

   MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION. FOLLOWING THE TEMPORARY AND/OR FINAL SEEDING AND MULCHING, THE CONTRACTOR SHALL IN THE SPRING INSPECT AND REPAIR ANY DAMAGES AND/OR UNESTABLISHED SPOTS. ESTABLISHED VEGETATIVE COVER MEANS A MINIMUM OF 85% TO 90% OF AREAS VEGETATED WITH VIGOROUS GROWTH.

STANDARDS FOR TIMELY STABILIZATION OF CONSTRUCTION SITES DURING WINTER

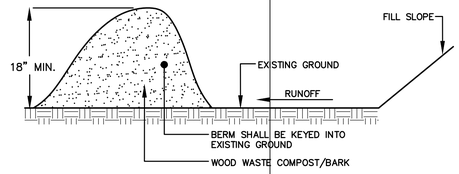
1. STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOILS

BY SEPTEMBER 15TH THE APPLICANT SHALL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15%. IF THE APPLICANT FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE APPLICANT SHALL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER.

STABILIZE THE SOIL WITH TEMPORARY VEGETATION––BY OCTOBER 1ST THE APPLICANT SHALL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF THREE POUNDS PER 1000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE APPLICANT SHALL MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 15TH, THEN THE APPLICANT SHALL MULCH THE AREA FOR OVER–WINTER PROTECTION AS DESCRIBED ABOVE.

STABILIZE THE SOIL WITH SOD––THE APPLICANT SHALL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.

STABILIZE THE SOIL WITH MULCH––BY NOVEMBER 15TH THE APPLICANT SHALL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. PRIOR TO APPLYING THE MULCH, THE APPLICANT SHALL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE APPLICANT WILL ANCHOR THE MULCH WITH PLASTIC NETTING TO 'PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.



EROSION CONTROL MULCH BERM

EROSION CONTROL MULCH CAN BE MANUFACTURED ON OR OFF THE PROJECT SITE. IT SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.

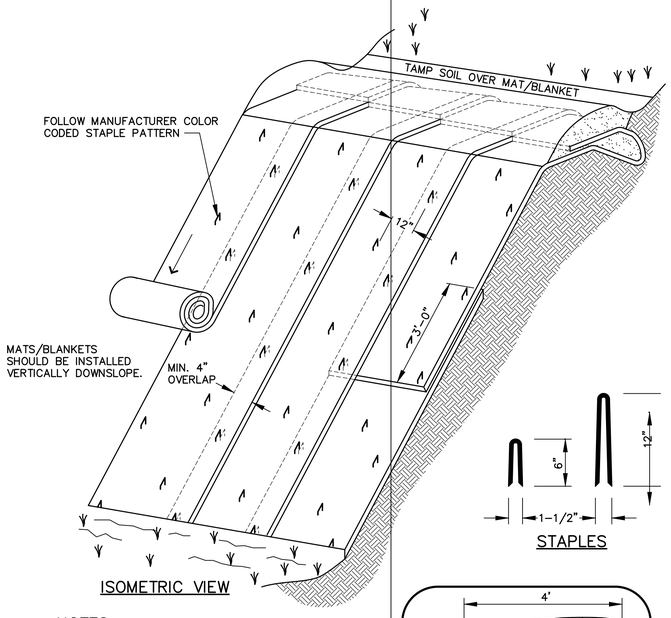
COMPOSITION

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:

- THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80 AND 100%, DRY WEIGHT BASIS.
- PARTICLE SIZE BY WEIGHT SHALL BE 100 % PASSING A 6" SCREEN AND A MINIMUM OF 70%, MAXIMUM OF 85%, PASSING A 0.75" SCREEN.
- THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
- LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
- SOLUBLE SALTS CONTENT SHALL BE < 4.0 MMHOS/CM.
- THE PH SHOULD FALL BETWEEN 5.0 AND 8.0.
- EROSION CONTROL MULCH BERM TO BE REMOVED AFTER SITE IS STABILIZED.

EROSION CONTROL MULCH BERM

NOT TO SCALE



NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. CHOOSE MATERIAL BASED ON SLOPE, SOILS, APPLICATION.

TYPICAL SLOPE SOIL STABILIZATION

NOT TO SCALE

Site:

AVESTA GRAY MEADOWVIEW II
16 HANCOCK STREET
GRAY, MAINE

Prepared for:

AVESTA HOUSING
307 CUMBERLAND AVENUE
PORTLAND, MAINE, 04101

Civil Engineer:

STAMP
STATE OF MAINE
MAUREEN P. MCGLONE

[redacted]

MAUREEN P. MCGLONE, PE #7705
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207-772-2891

Architect:

JSA DESIGN
273 CORPORATE DRIVE, SUITE 100
PORTSMOUTH, NH, 03801

Structural/Mechanical:

ALLIED ENGINEERING, INC.
160 VERANDA STREET
PORTLAND, MAINE, 04103

Soil Scientist/Site Evaluator:

ALBERT FRICK ASSOCIATES, INC.
380B MAIN STREET
GORHAM, MAINE, 04038

Landscape Architect:

RASOR LANDSCAPE ARCHITECTURE
87 MAIN STREET
YARMOUTH, MAINE, 04096

Surveyor:

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390 US ROUTE 1, UNIT 10
FALMOUTH, MAINE, 04105

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www.ransomenv.com

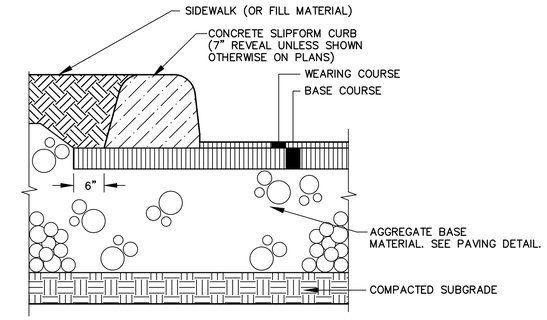
EROSION AND SEDIMENTATION CONTROL NOTES AND DETAILS

No.	Revision/Issue	Date
B	PLANNING BOARD/DEP REVIEW	5/19/22
A	PERMITTING	1/28/22

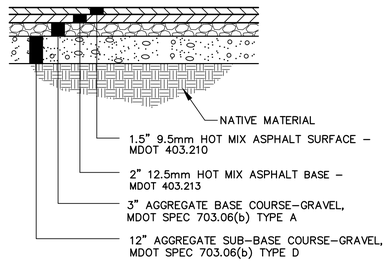
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Drawn by: DJV	Approved by: JIM/MPM
Project: 191.06051	Date: DECEMBER 2019

Sheet No: **C2.1**

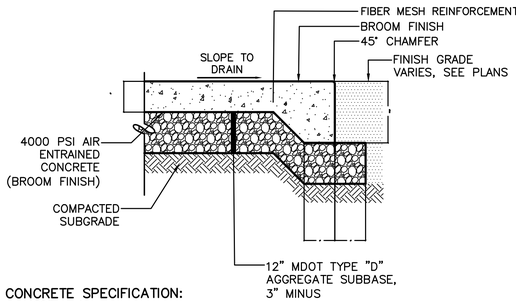
P:\2019\19-06051\Drawings\Working Drawings\19-06051 Details May 19, 2022 - 7:18pm



SLIPFORM CONCRETE CURBING
NOT TO SCALE

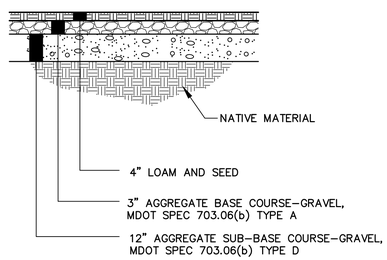


TYPICAL PARKING AREA AND ACCESS ROAD DETAIL
NOT TO SCALE

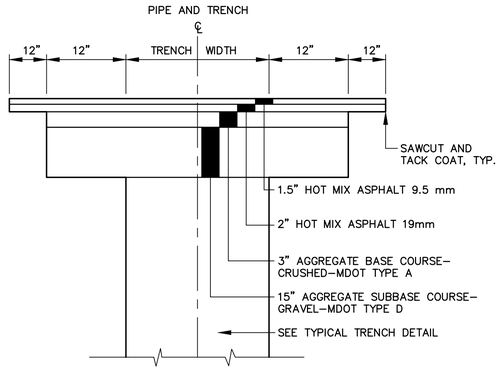


CONCRETE SPECIFICATION:
- 4000 p.s.i.
- 3/4" AGGREGATE
- 6 – 7 % AIR ENTRAINMENT
- SLUMP – 4" ± 1"
- SHALL MEET GENERATOR MANUFACTURER'S SPECIFICATIONS

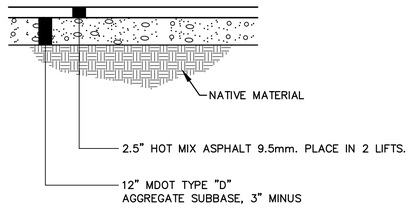
CONCRETE PAD FOR GENERATOR
NOT TO SCALE



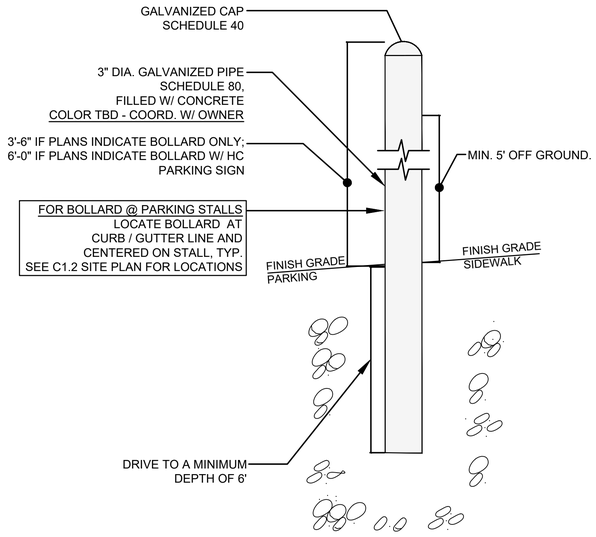
TYPICAL GRASS ON GRAVEL PARKING SPACE DETAIL
NOT TO SCALE



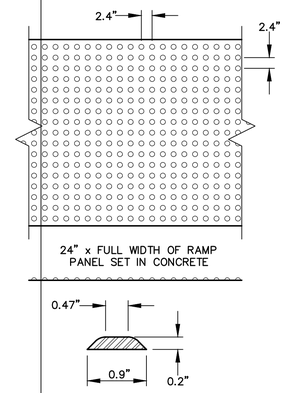
TYPICAL TRENCH PAVING IN ROW DETAIL
NOT TO SCALE



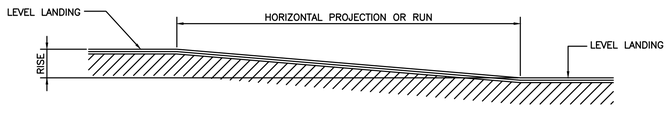
PAVED HMA WALKWAY DETAIL
NOT TO SCALE



BOLLARD/ACCESSIBLE PARKING SIGN POST
NOT TO SCALE



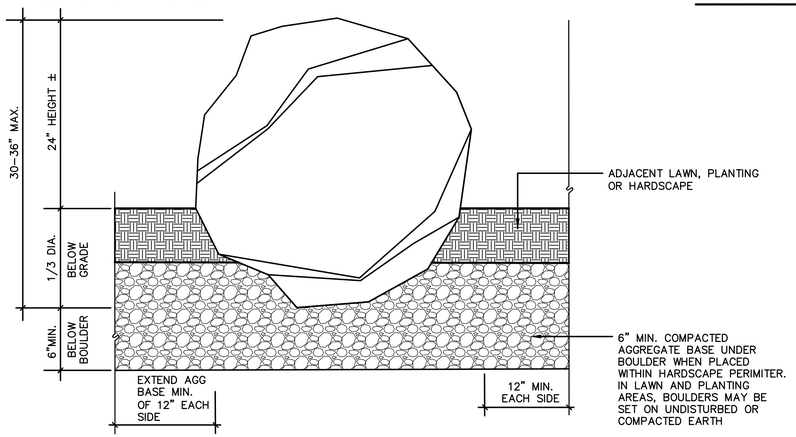
TRUNCATED DOMES DETAIL
NOT TO SCALE



SLOPE	MAXIMUM RISE (INCHES)	MAX. HORIZ. PROJECTION (FEET)
1:12 TO <1:16	30	30
1:16 TO <1:20	30	40

COMPONENTS OF A SINGLE ADA RAMP AND SAMPLE ADA RAMP DIMENSIONS
NOT TO SCALE

* BOULDERS SHALL BE APPROVED BY PROJECT LANDSCAPE ARCHITECT.



BOULDER PLACEMENT:
PLACE SELECTED BOULDERS AS SHOWN ON PLAN SO THEY LOOK AS IF THEY HAVE OCCURRED NATURALLY AND ARE IN A STABLE POSITION. SUBMERGE EACH BOULDER MIN. 1/3 OF THE DIAMETER INTO GROUND SO THAT NO UNDERCUTS ARE SHOWN. HANDLE WITH WOOD–LINED BUCKET OR CLOTH STRAPS TO MINIMIZE SCRATCHING.

LARGE BOULDER DETAIL
NOT TO SCALE

Site:

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GRAY, MAINE

Prepared for:

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Civil Engineer:

STAMP
STATE OF MAINE
MAUREEN P.
[redacted]
MAUR
RANSOM CONSULTING, LLC
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PORTLAND, ME 04101
207-772-2891

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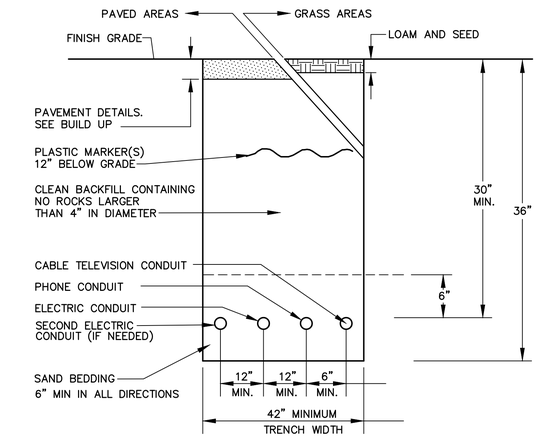
RANSOM Consulting, LLC.
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Portland, ME 04101
Tel. (207) 772-2891
Fax (207) 772-3248
www.ransomenv.com

SITE AND UTILITY DETAILS

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A	PERMITTING	1/28/22

Design by: DJV | Checked by: MPM
Drawn by: DJV | Approved by: JIM/MPM
Project: 191.06051 | Date: DECEMBER 2019
Sheet No: C2.2

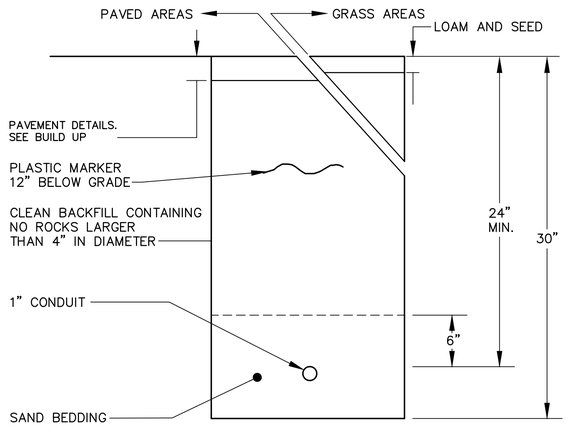
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* SEE ELECTRICAL DRAWINGS FOR CONDUIT SIZES AND DETAILS ON CONDUIT CONFIGURATION

UNDERGROUND ELECTRIC/COMUNICATIONS UTILITY TRENCH DETAIL

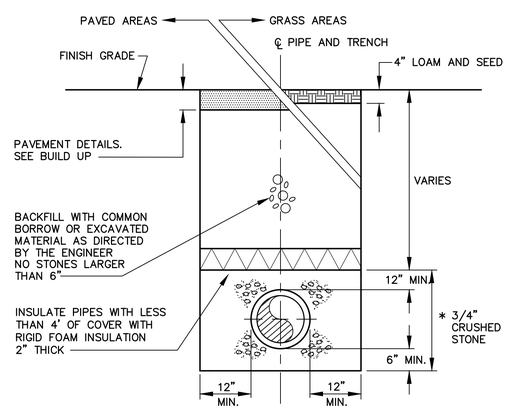
NOT TO SCALE



* SEE ELECTRICAL DRAWINGS FOR CONDUIT SIZES AND DETAILS ON CONDUIT CONFIGURATION

LIGHTING CONDUIT TRENCH DETAIL

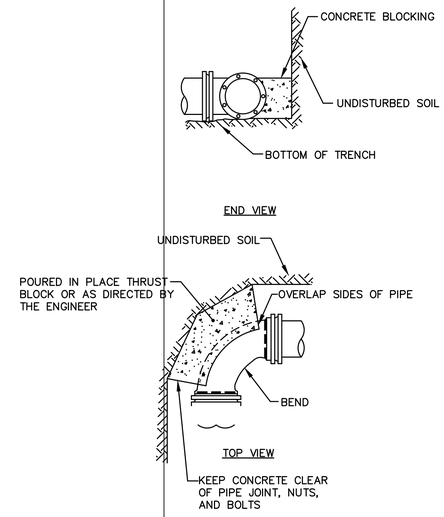
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* USE SAND BEDDING FOR WATER INFRASTRUCTURE

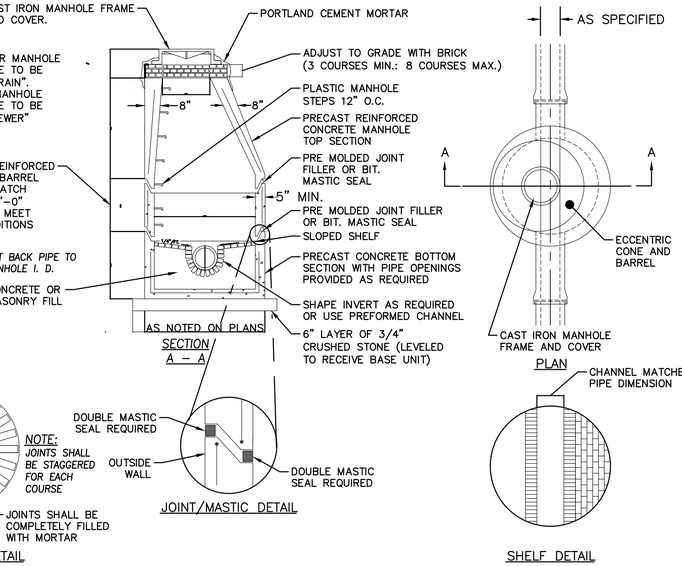
TYPICAL TRENCH DETAIL

NOT TO SCALE



STANDARD BEND BLOCKING

NOT TO SCALE

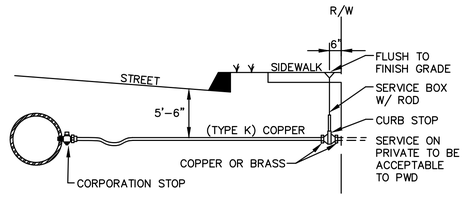


NOTE:

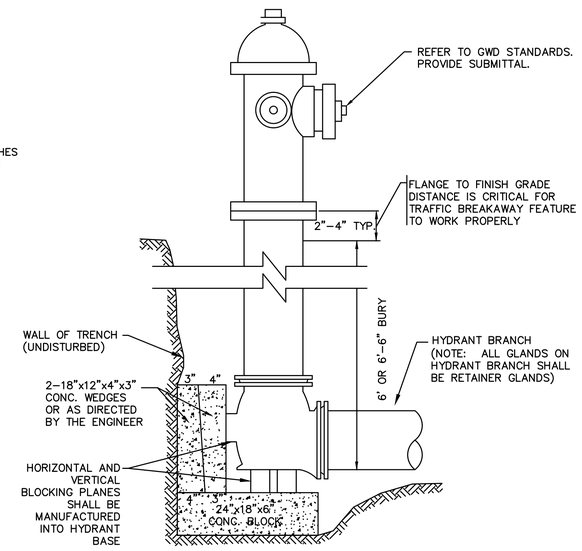
MANHOLE CHANNELS REQUIRING CHANGE OF ALIGNMENT, TO BE BUILT ON SMOOTH RADIUS. IF SIDE PIPES ENTER, CHANNEL TO BE SHAPED TO RECEIVE ADDED SIDE FLOW.

PRECAST CONCRETE MANHOLE

NOT TO SCALE

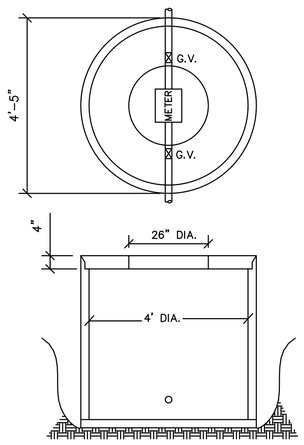


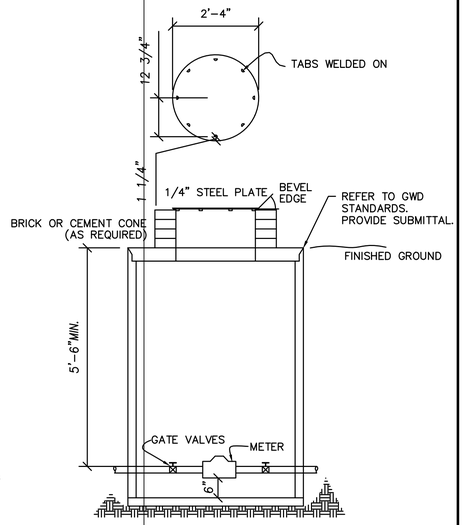
TYPICAL WATER SERVICE CONNECTION



TYPICAL HYDRANT INSTALLATION DETAIL

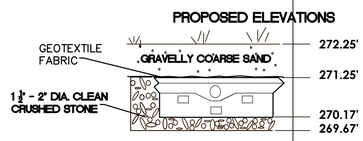
NOT TO SCALE





TYPICAL WATER METER PIT

NOT TO SCALE



CONCRETE CHAMBER DETAIL

NOT TO SCALE

Site:

AVESTA GRAY MEADOWVIEW II
16 HANCOCK STREET
GRAY, MAINE

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Civil Engineer:

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MAUREEN

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UTILITY DETAILS

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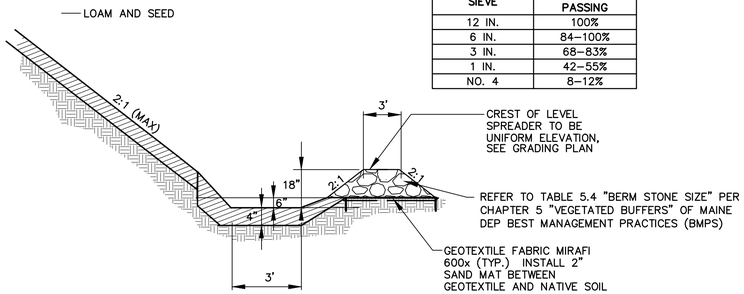
Design by: DJV | Checked by: MPM
Drawn by: DJV | Approved by: JIM/MPM
Project: 191.06051 | Date: DECEMBER 2019

Sheet No: C2.3

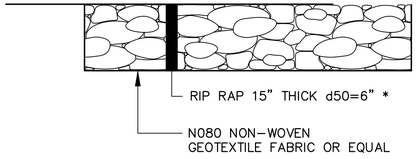
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TABLE 5.4
BERM STONE SIZE

SIEVE	% BY WEIGHT PASSING
12 IN.	100%
6 IN.	84–100%
3 IN.	68–83%
1 IN.	42–55%
NO. 4	8–12%



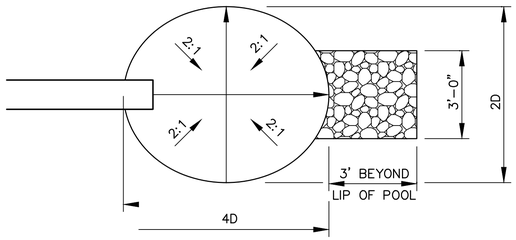
STONE BERMED LEVEL LIP SPREADER FOR FOREST BUFFER
NOT TO SCALE



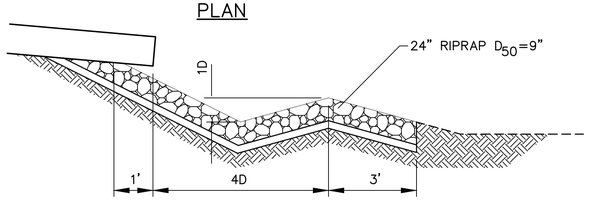
* RIP RAP TO CONSIST OF ANGULAR NATURAL STONE (SCREENINGS)

** SEE PLANS FOR SHAPE, SIZE & GRADING OF ENERGY DISSIPATERS/PLUNGE POOLS

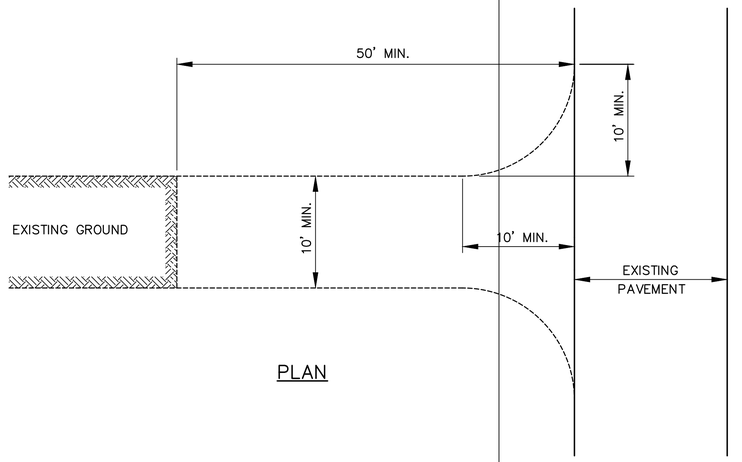
ENERGY DISSIPATER/PLUNGE POOL DETAIL
NOT TO SCALE



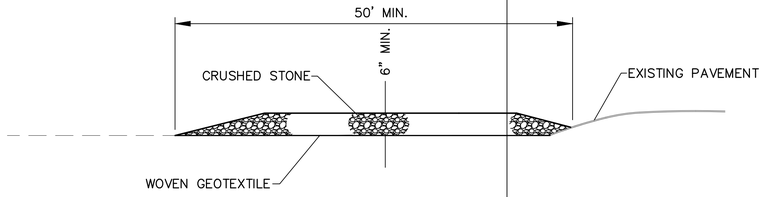
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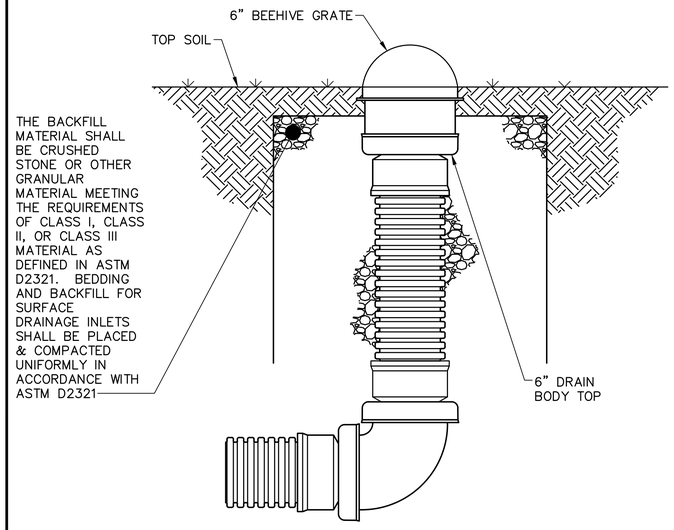
SECTION



PLAN



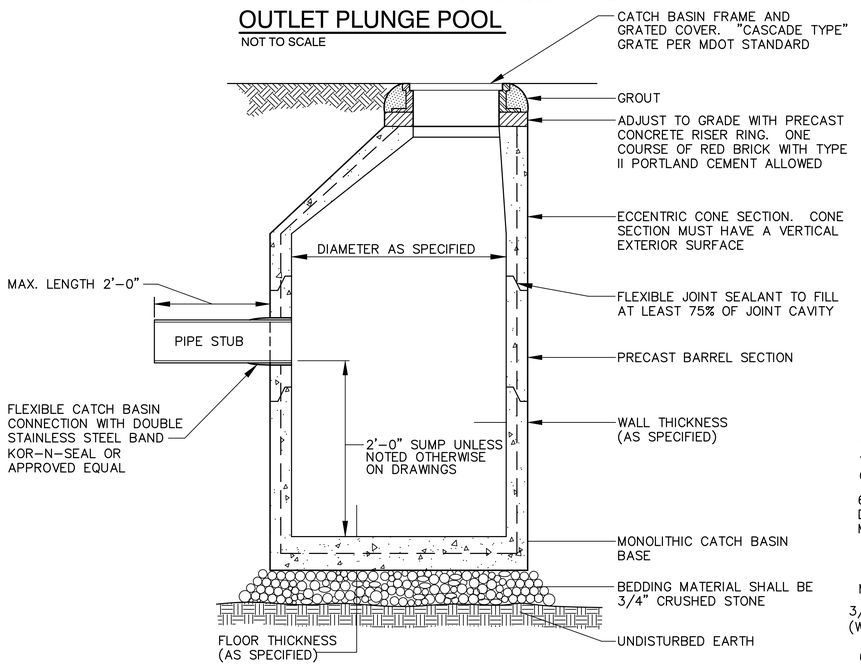
PROFILE



6" NYLOPLAST DRAIN DETAIL
NOT TO SCALE

D = DIAMETER OF PIPE

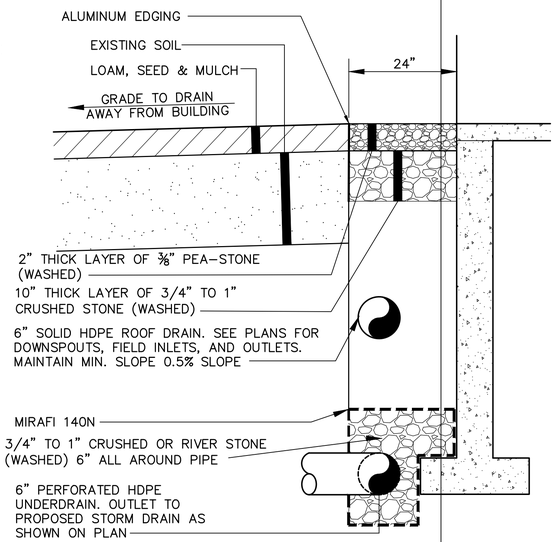
OUTLET PLUNGE POOL
NOT TO SCALE



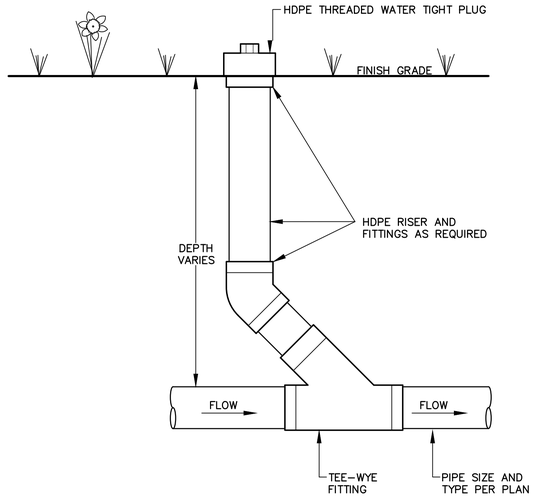
I.D.	WALL WIDTH	FLOOR THICKNESS
4'-0"	5"	6"

PRECAST CONCRETE CATCH BASIN
NOT TO SCALE

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



UNDERDRAINED DRIP EDGE DRAIN DETAIL (FOR NEW CONSTRUCTION)
NOT TO SCALE



DRAIN CLEANOUT DETAIL
NOT TO SCALE

Site:

AVESTA GRAY MEADOWVIEW II
16 HANCOCK STREET
GRAY, MAINE

Prepared for:

AVESTA HOUSING
307 CUMBERLAND AVENUE
PORTLAND, MAINE, 04101

Civil Engineer:

STAMP
STATE OF MAINE
MAUREEN P.

MAUREEN P. MCGLONE, PE #7705
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PORTLAND, ME 04101
207-772-2891

Architect:

JSA DESIGN
273 CORPORATE DRIVE, SUITE 100
PORTSMOUTH, NH, 03801

Structural/Mechanical:

ALLIED ENGINEERING, INC.
160 VERANDA STREET
PORTLAND, MAINE, 04103

Soil Scientist/Site Evaluator:

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380B MAIN STREET
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Landscape Architect:

RASOR LANDSCAPE ARCHITECTURE
87 MAIN STREET
YARMOUTH, MAINE, 04096

Surveyor:

OWEN HASKELL, INC.
390 US ROUTE 1, UNIT 10
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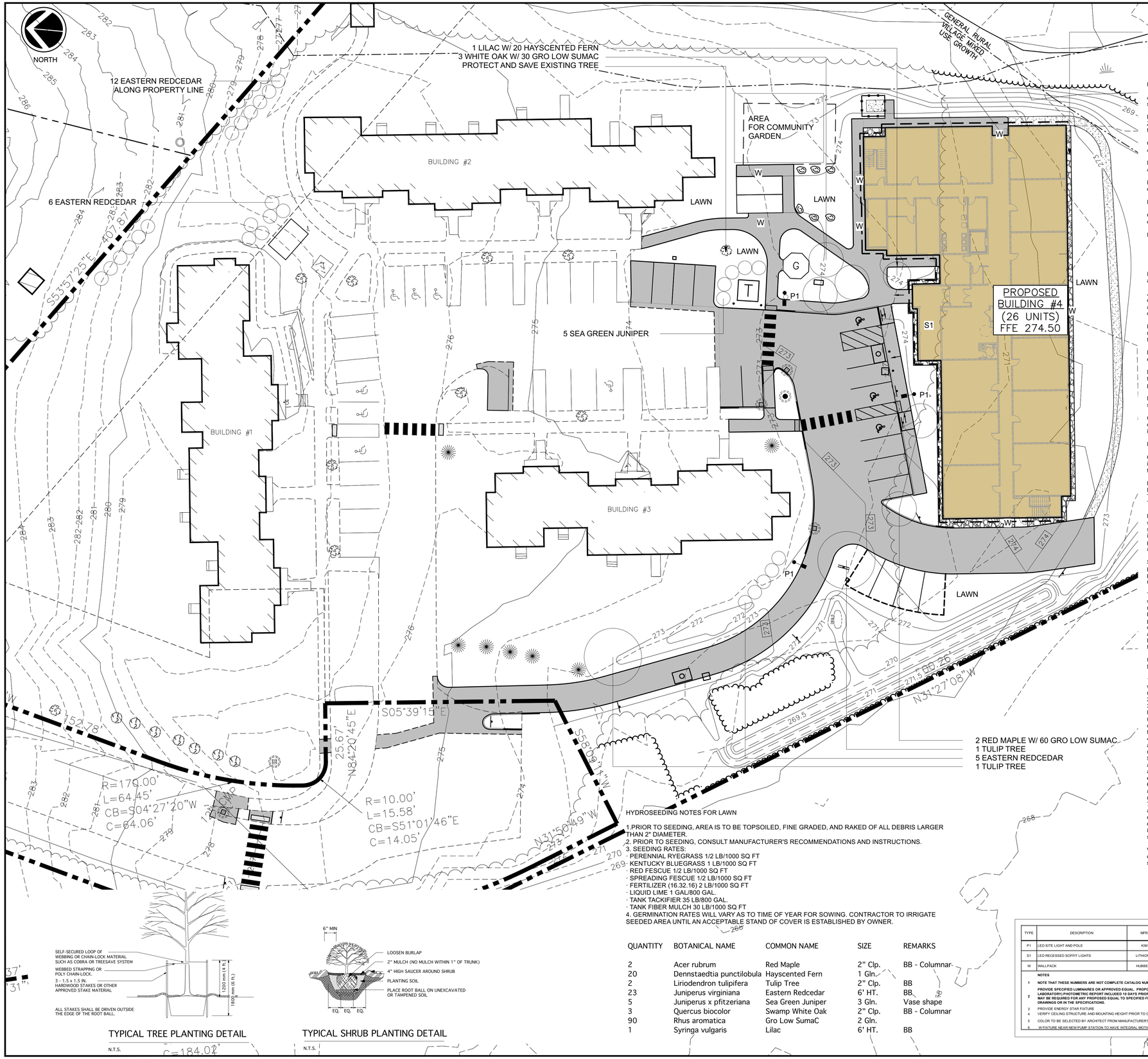
GRADING AND STORMWATER DETAILS

No.	Revision/Issue	Date
B	PLANNING BOARD/DEP REVIEW	5/19/22
A	PERMITTING	1/28/22

Design by: DJV | Checked by: MPM
Drawn by: DJV | Approved by: JIM/MPM
Project: 191.06051 | Date: DECEMBER 2019

Sheet No: C2.4

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2'-0" WIDE OF 3/4" CLEAN CRUSH STONE DRIP EDGE ALL SIDES OF BUILDING EXCEPT PAVED WALK AREAS. TYP. DRIP EDGE DETAIL

PLANTING SPECIFICATION

A. Call Dig Safe prior to any excavation work. The location and maintenance of landscaping and site amenities cannot conflict with site utilities. Coordinate with all other project drawings.

B. In any case where drawings or specifications vary from the Town of Gray Site Plan Review, Zoning, and Design Guidelines, municipal regulations take precedent. Report any discrepancies to Owner and Landscape Architect.

C.The location of all trees, shrubs, and grasses shall be staked and approved by the Landscape Architect prior to planting.

D.Flag the northern side of trees in the nursery and install trees oriented to the north. Landscape Architect to select plant material with contractor.

E. All plant material shall be healthy and full-branching, true to form and specified size, free of disease, pests and physical damage.

F. Employ only experienced personnel familiar with required work.

G. If deciduous trees are planted in - leaf, they shall be sprayed with an anti-desiccant prior to digging operation.

H. Landscape installation timeframe:

Balled and Burlapped:
Spring 4/1 to 7/15, and Fall 8/15 to 10/15

I. Specified plant material may be substituted by the use of alternate, similar plant material, with approval from the Landscape Architect.

J. All plant material and lawn shall be guaranteed for a period for two years from date of occupancy. All dead and non-vigorous material shall be replaced, without cost to the Owner, with a similar species, and these replacement plants shall be guaranteed for one year from the date of acceptance by the Owner.

K. Planting soil shall be 2/3 topsoil, free of debris and stones over 1" in diameter, and 1/3 peat moss. The pH shall be between 5. 5 - 7.0. Ground limestone shall be added to the planting soil to achieve specified pH.

L. Add compost in planting beds at a 1 part compost to 4 part existing soil ratio,tilled to a 12" depth per industry standards.

M. Fertilizer shall be applied when planting pits are 2/3 full of planting soil with a 5-10-10 fertilizer. After planting, slow release fertilizer, minimum 5 year, shall be applied using a 4 oz. packet system at rates recommended by the manufacturer.

N. Mulch shall be 100% fine shredded pine bark, 2" deep. Planting beds adjacent to buildings shall use 3/4" aggregate or less. Landscape and Owner to approve color.

O. Tree wrap shall be Osnaburg Cloth, 4 7/8" wide, unbleached, or approved equal. Cloth should only be used for material transport and installation and removed immediately following installation.

P. Loam and seed disturbed lawn areas per civil engineering plans.

Q. Trees normally do not need to be staked and staking can be harmful to the tree and a hazard in pedestrian locations. Staking should only be done if it is expected that the tree will not be able to support itself. The following are reasons why trees do not remain straight:

Root balls placed on soft soil: Tamp soils under root ball prior to planting
Root balls with very sandy soil or very wet clay soil: Staking advisable
Trees located in a place of extremely windy conditions: Staking advisable
Trees located in a place where vandalism may impact tree: Staking advisable

R. If tree stakes are required they shall be placed parallel to the curb. Trees will be secured with web strapping or polyester chain-lock. No wire or hose will be used. Assure that the bearing surface of the webbed strapping or poly chain lock against the trunk is a minimum of 12 MM (0.5 inches). Remove all staking as soon as the tree has grown sufficient roots to overcome the problem that required the tree to be staked. Stakes shall be in place no longer than one year or at least until the end of the growing season after planting.

S. Install black, molded, modular panels manufactured with 50 percent recycled polyethylene plastic with ultraviolet inhibitors, 85 mils (2.2 mm) thick, with vertical root deflecting ribs protruding _ inch (12 mm) to 3/4 inch (19 mm) out from panel, and each panel 24 inches (610 mm) wide by 18 inches in depth. Integrated zipper joining system for panel-to-panel connection.

T. Planting Pits and Trenches: Excavate circular planting pits with tapered sides. Excavations with vertical sides are not acceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit sheared or smoothed during excavation. Excavate two times as wide as ball diameter. Excavate at least 12 inches (300 mm) wider than root spread and deep enough to accommodate vertical roots for bare-root stock. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball. Subsoil and topsoil removed from excavations may not be used as planting media

U. Maintenance shall begin immediately after each plant is planted and shall continue until Maintenance required:

1. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring water saucers, resetting to proper grade or vertical position, and performing other operations as required to establish healthy, viable plantings.
2. Planting areas shall be kept free of weeds, grass, and other undesired vegetative growth.
3. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of settling. Do not place mulch within 3 inches (75 mm) of trunks or stems. A continuous, linear mulched area shall be maintained between closely spaced plants to avoid grassed strips less than 2 feet (600 mm) wide or scallops of grass that are difficult to maintain.
4. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use practices to minimize the use of chemicals and pesticides and reduce hazards.
5. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed. See Section V below.
6. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings without additional cost to the Owner.
7. Prune, thin, and shape woody materials according to standard professional horticultural and arboricultural practices and in accordance with ANSI A300 (Part 3) Pruning Standards. Unless otherwise indicated by Landscape Architect, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs. Prune to retain natural character.
8. Pruning shall be done with clean, sharp tools. Cuts shall be made at branch collars, leaving no stubs. No tree paint shall be used.

V. General Fertilizers and Pesticides Note: Utilize organic fertilizers, pesticides, or biological controls or substitute with OMRI approved materials. Obtain permission and notify Owner prior to substitutions and applications.

HYDROSEEDING NOTES FOR LAWN

1.PRIOR TO SEEDING, AREA IS TO BE TOPSOILED, FINE GRADED, AND RAKED OF ALL DEBRIS LARGER THAN 2" DIAMETER.
2. PRIOR TO SEEDING, CONSULT MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.
3. SEEDING RATES:
· PERENNIAL RYEGRASS 1/2 LB/1000 SQ FT
· KENTUCKY BLUEGRASS 1 LB/1000 SQ FT
· RED FESCUE 1/2 LB/1000 SQ FT
· SPREADING FESCUE 1/2 LB/1000 SQ FT
· FERTILIZER (16.32.16) 2 LB/1000 SQ FT
· LIQUID LIME 1 GAL/800 GAL.
· TANK TACKIFIER 35 LB/800 GAL.
· TANK FIBER MULCH 30 LB/1000 SQ FT
4. GERMINATION RATES WILL VARY AS TO TIME OF YEAR FOR SOWING. CONTRACTOR TO IRRIGATE SEEDED AREA UNTIL AN ACCEPTABLE STAND OF COVER IS ESTABLISHED BY OWNER.

QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
2	Acer rubrum	Red Maple	2" Clp.	BB - Columnar
20	Dennstaedtia punctilobula	Hayscented Fern	1 Gln.	
2	Liriodendron tulipifera	Tulip Tree	2" Clp.	BB
23	Juniperus virginiana	Eastern Redcedar	6' HT.	BB
5	Juniperus x pfitzeriana	Sea Green Juniper	3 Gln.	Vase shape
3	Quercus biocolor	Swamp White Oak	2" Clp.	BB - Columnar
90	Rhus aromatica	Gro Low SumaC	2 Gln.	
1	Syringa vulgaris	Lilac	6' HT.	BB

TYPICAL TREE PLANTING DETAIL

N.T.S.

TYPICAL SHRUB PLANTING DETAIL

N.T.S.

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MFR	CATALOG SERIES NUMBER SEE NOTE 1	MOUNTING	VOLTS	LAMP/LIGHT ENGINE			KEY NOTES
						WATTS	LUMENS	TYPE	
P1	LED SITE LIGHT AND POLE	KIM	FIXTURE: OURO LR20-86L-90-AK8-ZMUNV POLE: SSS-H-12-40-A-XX-XX	12' POLE	208	105.1	4,896	LED ARRAY 4000K	
S1	LED RECESSED SOFFIT LIGHTS	LITHONIA	WF4LED40KMVOLT90CRMW	RECESSED SOFFIT	208	10.5	762	LED ARRAY 4000K	
W	WALLPACK	HUBBELL	LNC-SL-U-4K-4-1	10'-0" AFG	208	22	2,059	LED ARRAY 4000K	6

NOTES

1 NOTE THAT THESE NUMBERS ARE NOT COMPLETE CATALOG NUMBERS. PROVIDE ALL REQUIREMENTS ON SCHEDULE, NOTES, SPECS, AND DRAWINGS COMBINED.

2 PROVIDE SPECIFIED LUMINAIRES OR APPROVED EQUAL. PROPOSED SUBSTITUTION OF ANY SPECIFIED FIXTURE MUST BE SUBMITTED FOR REVIEW AND PRE-APPROVAL WITH ITL (INDEPENDENT TESTING LABORATORY) PHOTOMETRIC REPORT INCLUDED 10 DAYS PRIOR TO THE BID DATE. POINT-BY-POINT PHOTOMETRIC LAYOUTS FOR ROOMS WHERE LIGHTING IS SUBSTITUTED OR SAMPLE FIXTURES FOR REVIEW MAY BE REQUIRED FOR ANY PROPOSED EQUAL TO SPECIFIED FIXTURES. SUBSTITUTION SUBMITTAL SHALL INCLUDE VERIFICATION OF ANY DLC OR ENERGY STAR RATINGS THAT ARE REQUESTED ON THE DRAWINGS OR IN THE SPECIFICATIONS.

3 PROVIDE ENERGY STAR FIXTURE

4 VERIFY CEILING STRUCTURE AND MOUNTING HEIGHT PRIOR TO ORDERING ANY LIGHT FIXTURES.

5 COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLORS

6 W FIXTURE NEAR NEW PUMP STATION TO HAVE INTEGRAL MOTION SENSOR AND BE CONTROLLED FROM PHOTOCELL

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16 HANCOCK STREET
GRAY, MAINE

Prepared for:

AVESTA HOUSING
307 CUMBERLAND AVENUE
PORTLAND, MAINE, 04101



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SCALE

0 10 20 40
SCALE in FEET
1"=20'

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LANDSCAPE AND LIGHTING PLAN

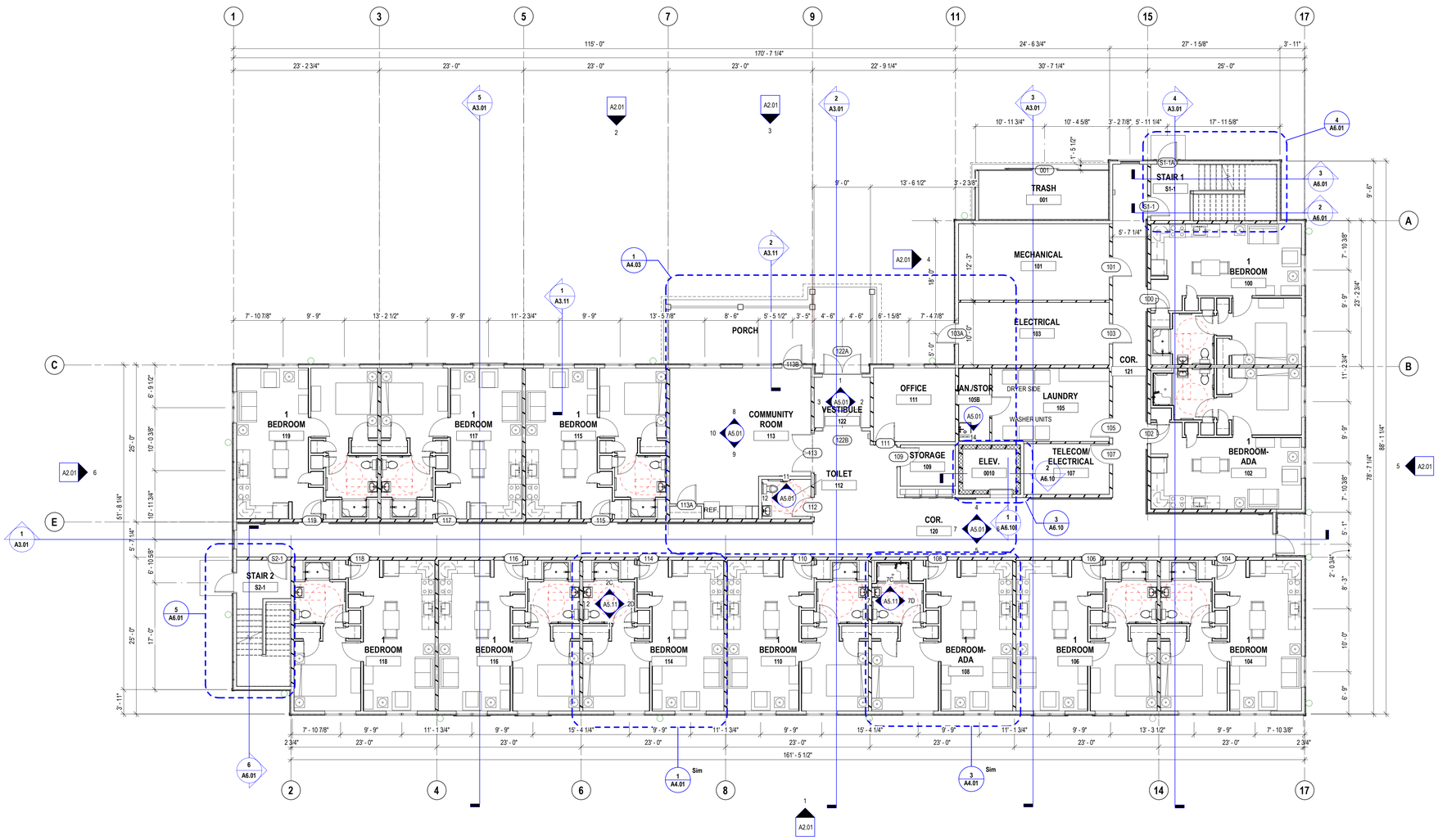
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Design by: DJV
Drawn by: DJV
Checked by: MPM
Approved by: JIM/MPM
Project: 191.06051
Date: DECEMBER 2019

Sheet No: L-1

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GENERAL PLAN NOTES	
1	GENERAL CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT IF FIELD CONDITIONS ARE DIFFERENT THAN SHOWN IN THE DRAWINGS.
2	REFERENCE LIFE SAFETY DRAWINGS LS.00/LS.03 FOR ADDITIONAL INFORMATION.
3	REFERENCE DRAWING A8.01, A8.02, & A8.03 FOR EXTERIOR WALL AND PARTITION TYPES.
4	REFERENCE CIVIL ENGINEERING AND LANDSCAPE ARCHITECTURAL DRAWINGS FOR SITE SPECIFIC INFORMATION. SITE INFORMATION SHOWN HERE FOR REFERENCE ONLY.
5	ACCESSIBLE CLEARANCES ARE REQUIRED AT ALL ACCESSIBLE FIXTURES AND EQUIPMENT.
6	EXTERIOR DIMENSION ARE GIVEN FROM FACE OF STUD TO FACE OF STUD, TYP.
7	INTERIOR DIMENSIONS ARE GIVEN FROM FACE OF STUD TO FACE OF STUD U.N.O.
8	ALL DOORS SHALL BE INSTALLED WITH HINGED SIDE OF FINISHED OPENING 6" FROM ADJACENT WALL, OR CENTERED WITHIN WALL, UNLESS NOTED OTHERWISE.
9	ALL DOORS INTENDED FOR PASSAGE MUST MEET ACCESSIBILITY MANEUVERING CLEARANCES.
10	EXTERIOR OPENINGS ARE DIMENSIONED TO CENTER LINE OF OPENING UNLESS NOTED OTHERWISE.
11	ALL WORK SHALL COMPLY WITH APPLICABLE LOCAL CODES AS WELL AS STATE AND FEDERAL GUIDELINES.
12	REFER TO A8.11 FOR DOOR AND FRAME TYPES.
13	REFER TO A8.31 FOR WINDOW AND LOUVER TYPES.
14	REFER TO A4 SERIES SHEETS FOR UNIT PLANS & ENLARGED PLANS.
15	SEE DETAIL 2/A1.01A FOR TYPICAL DETAIL AT ALL AL UNIT ENTRIES.
16	TYPICAL INTERIOR WALL PARTITION TO BE TYPE S6.S.A UNLESS NOTED OTHERWISE.



1 FIRST FLOOR
1/8" = 1'-0"

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AVESTA MEADOWVIEW II
GRAY, MAINE

AVESTA HOUSING

ARCHITECT'S STAMP

Scale: 1/8" = 1'-0"
Date: DECEMBER 30, 2021
Project Number: P19099.00

REVISIONS		
NO.	DESCRIPTION	DATE

VOLUME 1

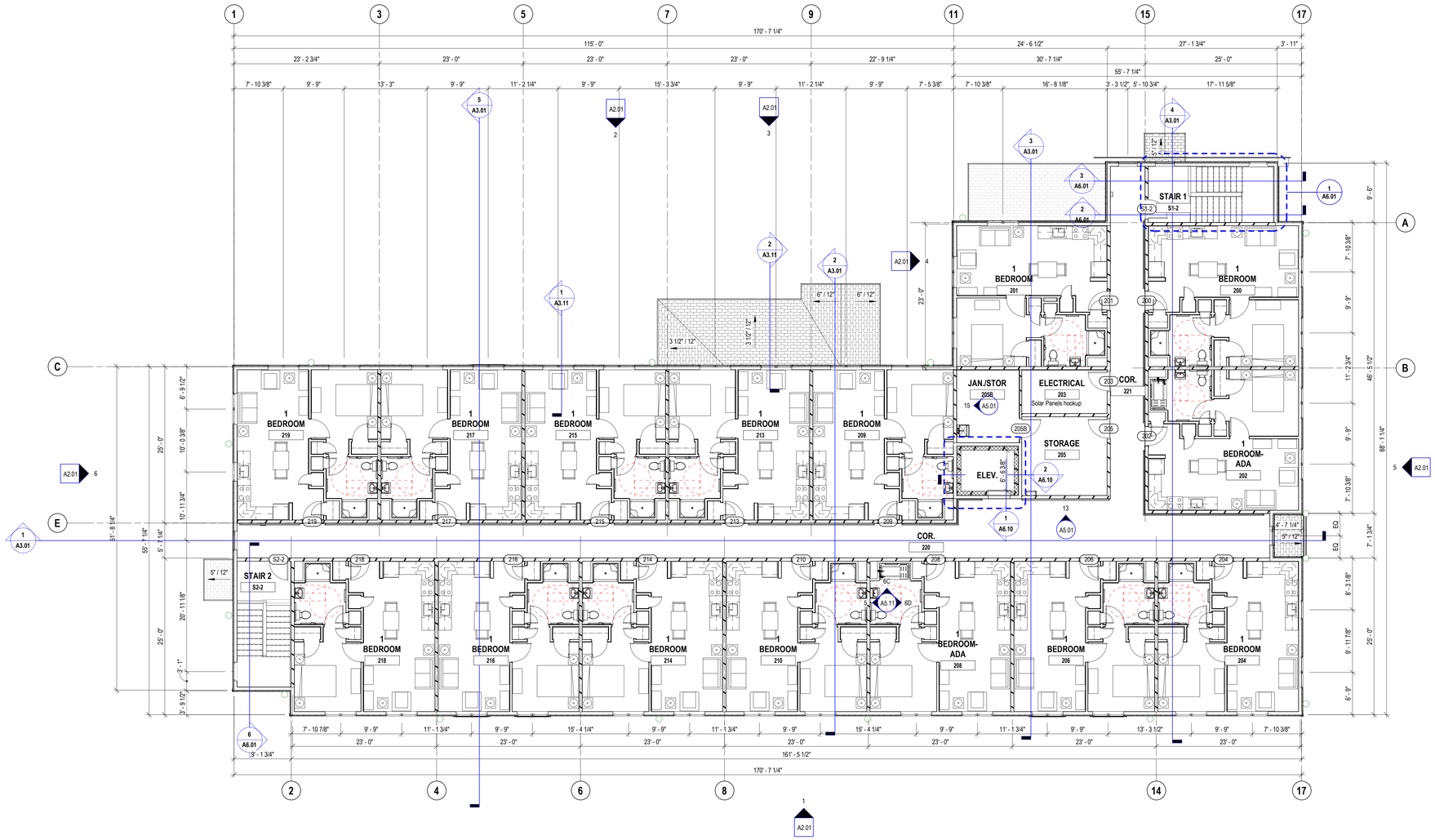
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FIRST FLOOR PLAN

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1 SECOND FLOOR
1/8" = 1'-0"

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15	SEE DETAIL 2/A1.01A FOR TYPICAL DETAIL AT ALL AL UNIT ENTRIES.
16	TYPICAL INTERIOR WALL PARTITION TO BE TYPE S6.S.A UNLESS NOTED OTHERWISE.

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AVESTA MEADOWVIEW II
GRAY, MAINE

AVESTA HOUSING

ARCHITECT'S STAMP

Scale: 1/8" = 1'-0"
Date: DECEMBER 30, 2021
Project Number: P19099.00

REVISIONS		
NO.	DESCRIPTION	DATE

VOLUME 1

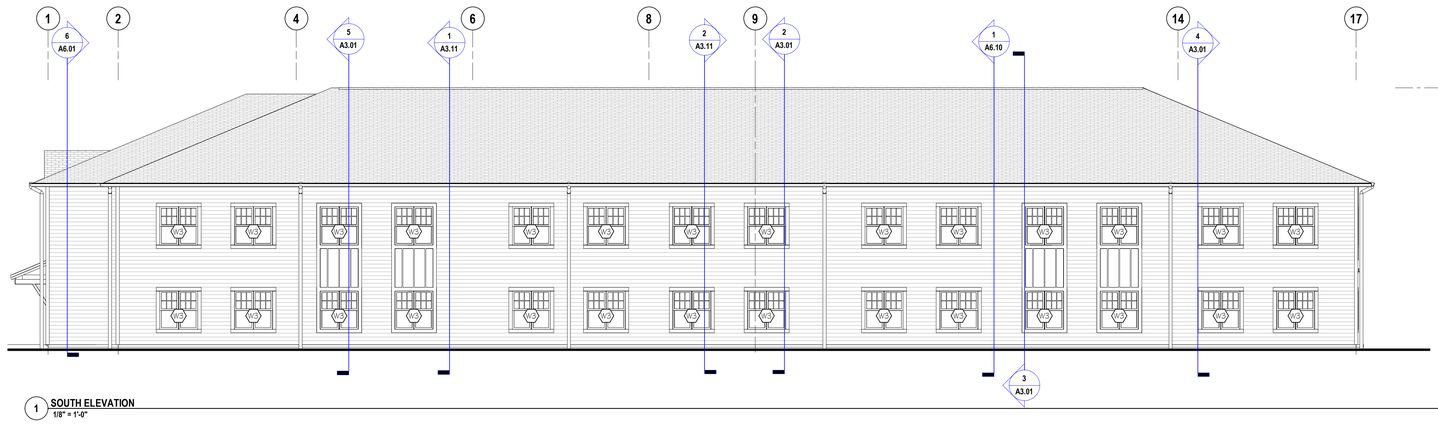
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SECOND FLOOR PLAN

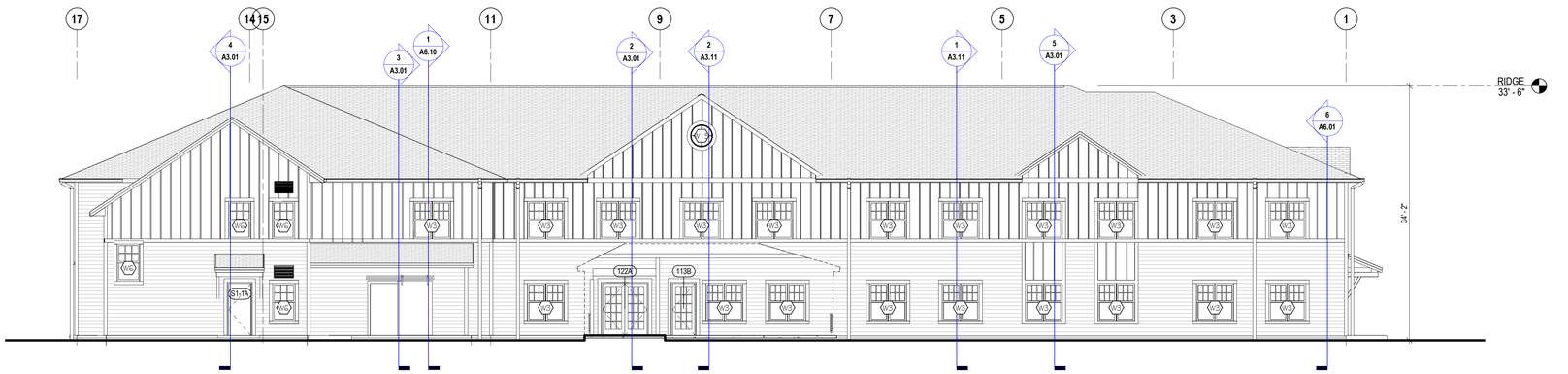
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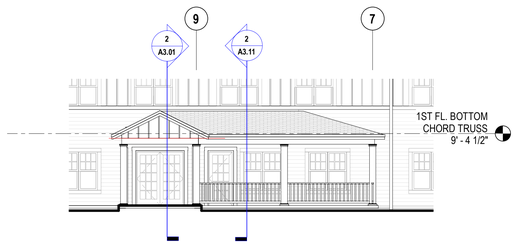
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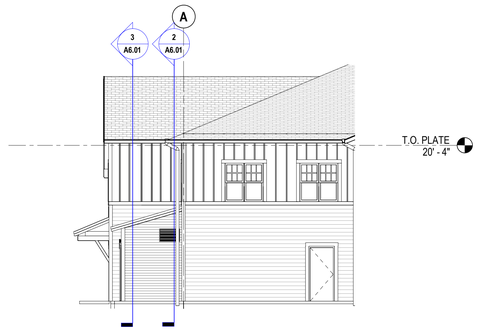
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1/8" = 1'-0"



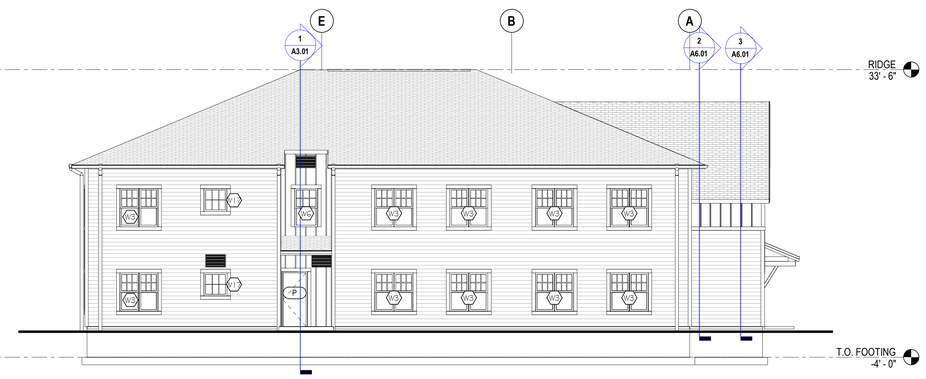
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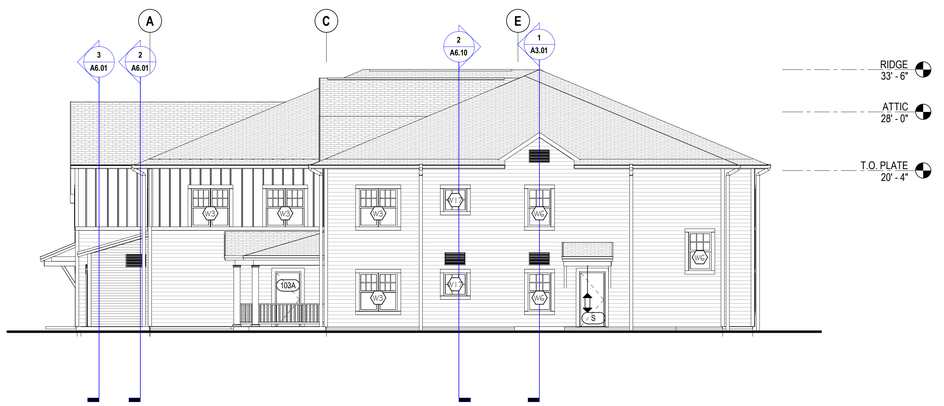
3 **NORTH ELEVATION DETAIL**
1/8" = 1'-0"



4 **WEST ELEVATION DETAIL**
1/8" = 1'-0"

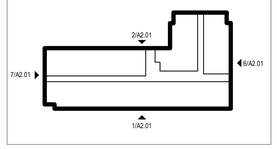


5 **EAST ELEVATION**
1/8" = 1'-0"



6 **WEST ELEVATION**
1/8" = 1'-0"

BUILDING ELEVATION KEY



ELEVATION KEY NOTES

1. ARCHITECTURAL ASPHALT SHINGLE ROOF
2. METAL ROOF
3. VINYL CLAPBOARD SIDING 4"
4. VINYL CLAPBOARD SIDING 7"
5. VERTICAL BOARD AND BATTEN 16" - (VINYL & PVC)
6. PVC TRIM

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VOLUME 1

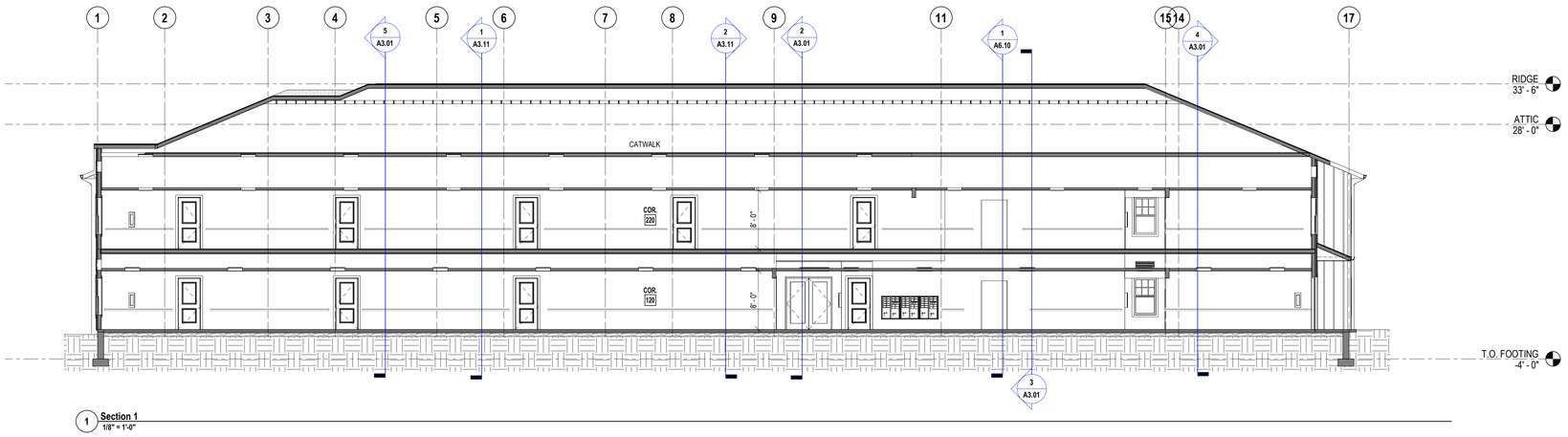
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EXTERIOR ELEVATIONS

A2.01

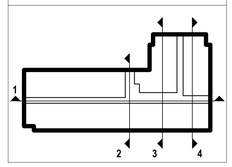
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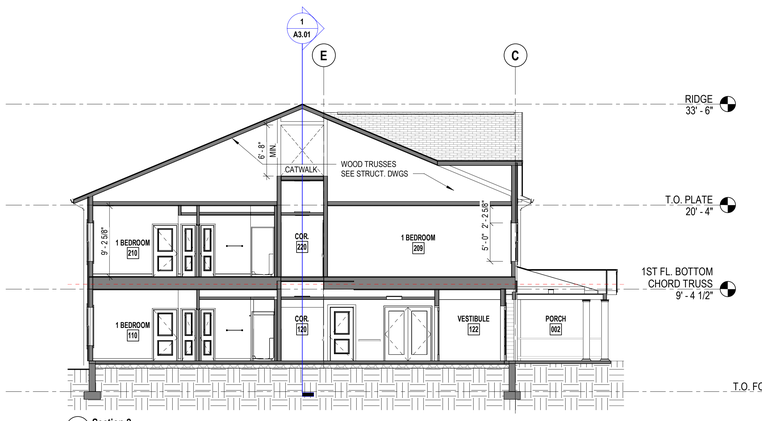
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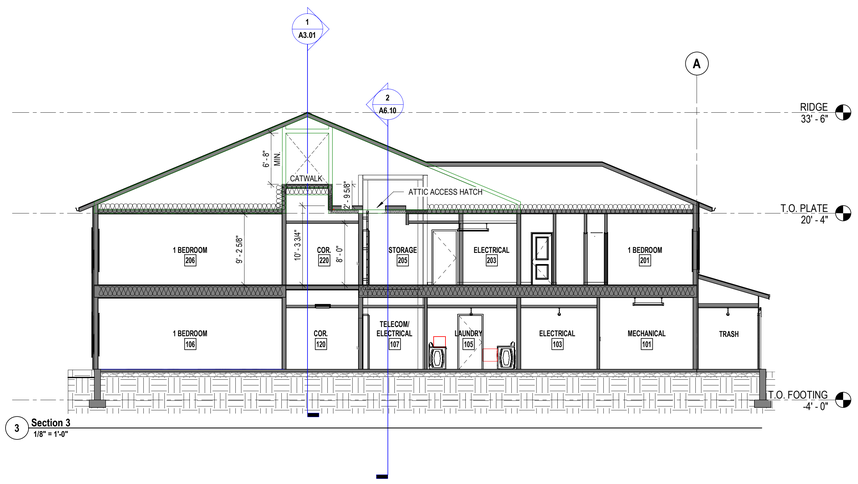
1 **Section 1**
1/8" = 1'-0"

BUILDING SECTION KEY PLAN

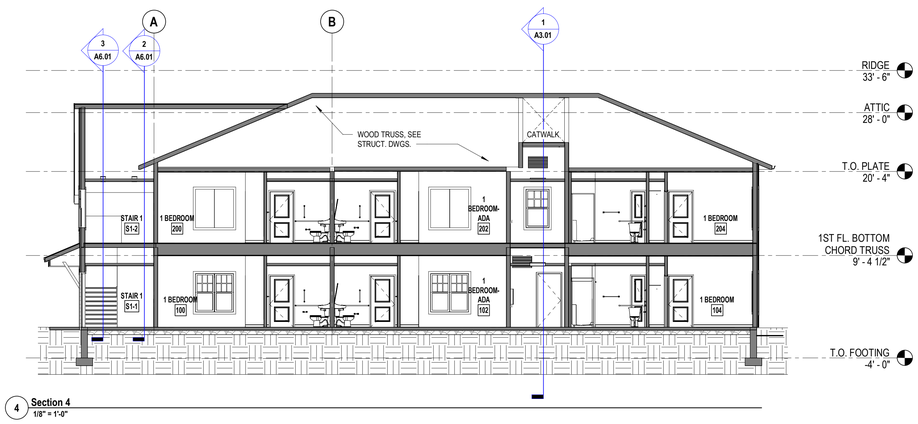




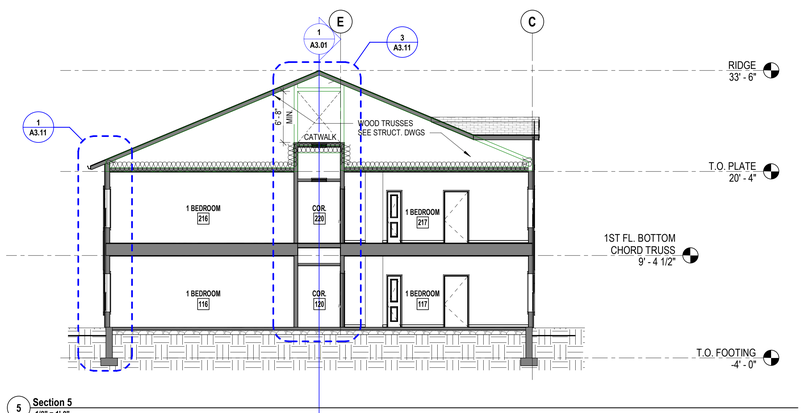
2 **Section 2**
1/8" = 1'-0"



3 **Section 3**
1/8" = 1'-0"



4 **Section 4**
1/8" = 1'-0"



5 **Section 5**
1/8" = 1'-0"

JSA
ARCHITECTS
INTERIORS
PLANNERS

273 CORPORATE DRIVE
PORTSMOUTH, NH 03801
T 603.436.2551
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STRUCTURAL, MECHANICAL, ELECTRICAL ENGINEER
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LANDSCAPE ARCHITECT
RASOR LANDSCAPE ARCHITECTURE
87 MAIN STREET
YARMOUTH, ME 04096
207.846.4966

AVESTA MEADOWVIEW II
GRAY, MAINE

AVESTA HOUSING

ARCHITECT'S STAMP

Scale: **As indicated**
Date: **DECEMBER 30, 2021**
Project Number: **P19099.00**

REVISIONS		
NO.	DESCRIPTION	DATE

VOLUME 1

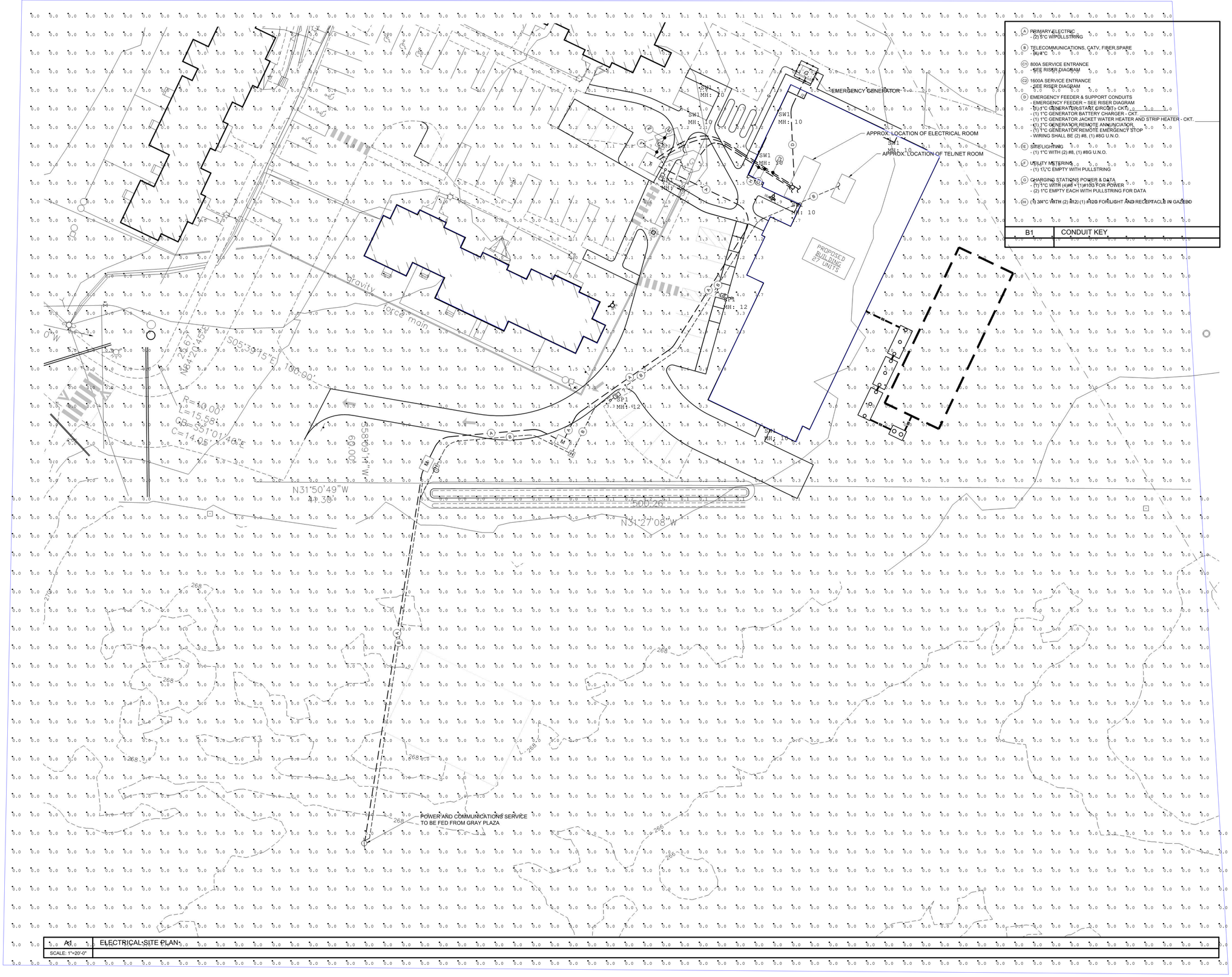
CONSTRUCTION DOCUMENTS 50%

BUILDING SECTIONS

A3.01

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12/30/2021 10:13:21 AM Revit projects\P099.00 - Avesta Meadowview (2021) - CTRL_lperczak2TBY5.rvt



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F: 207.221.2566
Web: www.allied-eng.com

AVESTA
MEADOWVIEW II
GRAY, MAINE

AVESTA HOUSING

ARCHITECT'S STAMP

Scale: AS SHOWN
Date: DECEMBER 30,2021
Project Number: 19099.00

REVISIONS

NO.	DESCRIPTION	DATE

SITE ELECTRICAL PLAN

ES1.0

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From:	Kristen Muszynski
To:	Kristen Muszynski
Subject:	FW: Lo - income housing at Meadowview
Date:	Friday, May 27, 2022 9:07:30 AM

From: Natalie Blake <natalieblake37@gmail.com>
Sent: Saturday, April 2, 2022 7:28 AM
To: Sandy Carder <iowacarder@securespeed.us>
Subject: Lo - income housing at Meadowview

Hi Sandy,
I would like to cast my vote for the council to please go ahead with the proposal for the new low - income housing units at Meadowview. With the long waiting list at present there is nowhere for me to go at present and I would love to be able to stay here in Gray as I have been here since 1992. Meadowview would be xo perfect as I could walk to wherever I needed to go and still be able to have a place where I could have friends visit. Please help us seniors get this passed. Thank you. Blessings.

Bless the Lord, O my soul: and all that is within me, bless his holy name. Psalm 103:1
Rev. Natalie Blake
First Congregational Church of East Baldwin
26 School Street, East Baldwin Me 04024
Phone 207 657-5216
www.EastBaldwincc.org

This electronic mail message and any attachments hereto, as well as any electronic mail message(s) that may be sent in response to it, may be considered public records, and may therefore be subject to public record requests for review and copying under Maine's Right to Know Law (Title 1, 401-521 of the Maine Revised Statutes).
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From: Kristen Muszynski
To: Kristen Muszynski
Subject: FW: [Gray, ME] Senior housing (Sent by Liz Beck, Nopcs@mac.com)
Date: Friday, May 27, 2022 9:06:58 AM

From: Contact form at Gray, ME <cmsmailer@civicplus.com>
Sent: Friday, April 8, 2022 1:58 PM
To: Anne Gass <Agass@graymaine.org>
Subject: [Gray, ME] Senior housing (Sent by Liz Beck, Nopcs@mac.com)

Hello annegass,

Liz Beck (Nopcs@mac.com) has sent you a message via your contact form (https://www.graymaine.org/user/3244/contact) at Gray, ME.

If you don't want to receive such e-mails, you can change your settings at https://www.graymaine.org/user/3244/edit.

Message:

We need more! I can see us moving there!

This electronic mail message and any attachments hereto, as well as any electronic mail message(s) that may be sent in response to it, may be considered public records, and may therefore be subject to public record requests for review and copying under Maine's Right to Know Law (Title 1, 401-521 of the Maine Revised Statutes).
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From: Kristen Muszynski
To: Kristen Muszynski
Subject: FW: Meadow View
Date: Friday, May 27, 2022 9:05:36 AM

From: Mary Underwood <sweeneyridgedesigns@gmail.com>
Sent: Friday, April 1, 2022 4:12 PM
To: Sandy Carder <scarder@graymaine.org>
Subject: Meadow View

Chairman Carder, I have been following the meetings about Meadow View's further development with great interest. When I first moved to Gray after my husband died the only senior housing unit available in this part of Maine was one in Cumberland. Waiting lists had been closed due to numbers on each list. Knowing with my eyesight I would not be driving that was out of the question and I found an apartment in Gray, 7 miles from my son in North Windham.

I found Gray was a perfect fit, I could walk to Shop and Save, Library, Town Office, although not Congregational I attend and am very involved in their activities, I joined the Gray Historical Society and also a Senior Sharing group that meets at the Town Office. I also became a member of the Rec. Committee. My art work is sold in LocalCentric and helps support that business staying in the Community.

My husband and I had a Maine manufacturing business in Maine for 50 years. I continue to sell products he cut out of metal from my designs. I would like to stay in Gray. Many of the people I have met and worked with on Gray projects are Baby Boomers like me. Many are widows or widowers and do not want to move to larger developments closer to Portland for housing. We want to live and stay involved in a small town.

I am impressed by Avest's willingness to make requested changes to fit codes and the comprehensive plan. I believe as the population of Gray ages it will be crucial to expand this type of safe housing. I ask that the Council support this project. Thank you for your time and please forward this to the other Council members, planning board and Gray Town manager.

Mary Sweeney Underwood Sweeney Ridge Designs
10 Beehive # 2 Gray, Maine 04039

This electronic mail message and any attachments hereto, as well as any electronic mail message(s) that may be sent in response to it, may be considered public records, and may therefore be subject to public record requests for review and copying under Maine's Right to Know Law (Title 1, 401-521 of the Maine Revised Statutes).
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WARRANTY DEED
(Statutory Short Form)

DLN: 1002240184617

LLOYD A. DUNN of Gray, Cumberland County, Maine, for consideration paid, grants to **AVESTA MEADOWVIEW II, LP,** a Maine limited partnership, whose mailing address is 307 Cumberland Avenue, Portland, ME, 04101, with warranty covenants, the land with any buildings thereon, located in Gray, Cumberland County, Maine described as follows:

Reference is made to the premises more particularly described in Exhibits A, A-1 and B attached hereto and incorporated herein

MAINE REAL ESTATE TAX PAID

Dated: February 26, 2022

[redacted]
Lloyd A. Dunn

STATE OF MAINE
Cumberland, ss

February 26, 2022

Personally appeared, before me, the above named Lloyd A. Dunn and acknowledged the foregoing instrument to be his free act and deed.

[redacted]
Notary Public/Attorney

Robert H. Avaunt, Esq.
Notary Public
State of Maine
My Commission Expires
7/29/2024

[redacted]
Print Name

342-05\WD 2-26-22

SEAL

EXHIBIT A

Certain lots or parcels of land (forming one contiguous lot) situated in Gray, in said County of Cumberland and State of Maine being more particularly bounded and described as follows:

PARCEL ONE:

A certain lot or parcel of land with any buildings thereon located in the Town of Gray, Cumberland County, Maine, more particularly described as follows:

BEGINNING at the Southeast corner of land now or formerly of Francis Hayes at the Southeasterly end of the right-of-way and four hundred twenty-seven (427) feet from the corner (more or less) of the Northerly side line of the right-of-way or Skillings Street, so-called;

Thence South seventeen (17°) degrees ten (10') minutes West 272 feet to land now or formerly of Hansen;

Thence South thirty-eight (38°) degrees East 616 feet, more or less, by land now or formerly of Hansen to the corner of a stone wall;

Thence North twelve (12°) degrees thirty (30') minutes East 902 feet, more or less, by land now or formerly of Doughty to an iron, 10 feet Northerly of an elm tree at the side of the stone wall;

Thence North seventy-eight (78°) degrees fifty (50') minutes West 428 feet to a stake at the Northwest corner of land now or formerly of Verrill, and Southeast corner of land now or formerly known as Town of Gray Hancock School Lot;

Thence South nine (9°) degrees fifty-five (55') minutes West 226 feet to the **POINT OF BEGINNING**.

Parcel One being the same premises conveyed to Kenneth H. Sawyer by the deed of Gertrude M. Libby and Charlotte I. Libby dated September 4, 1953, and recorded in the Cumberland County Registry of Deeds in Book 2147, Page 74; the same as Parcel One in the deed given by Kenneth H. Sawyer to Jean S. Dunn recorded in said Registry of Deeds in Book 14756, Page 38 and a part of the premises as described in the deed from Jean S. Dunn to Jean S. Dunn and Lloyd A. Dunn as joint tenants recorded in said Registry of Deeds in Book 16721, Page 339.

PARCEL TWO:

A certain lot or parcel of land with any buildings thereon abutting Parcel One above located in the Town of Gray, Cumberland County, Maine, more particularly described as

follows:

BEGINNING at a point marked by an iron pipe and located South 26° 53' West from a point where Skillings Street intersects the land now or formerly of Kenneth H. Sawyer for a distance of 306' where the most southerly point of Cole land meets the westerly point of the Sawyer land and then proceeding South 37° 9' 32" East along the line between the Sawyer and Gray Plaza, Inc. land for a distance of 603.56' to an iron pipe at the intersection of two stone walls and being the most southerly corner of the Sawyer property;

Then North 50° 14' 20" East along the stone wall to a drill hole in a large boulder at intersection of two stone walls and being the most southwesterly corner of Sawyer property and most southerly corner of the John Doughty property;

Then South 38° 9' 6" East along line between the Sawyer and Gray Plaza, Inc. property a distance of 50' to an iron pipe;

Then South 50° 14' 20" West along the land now or formerly of Gray Plaza, Inc. for a distance of 66.40' to an iron pipe;

Then North 37° 9' 32" West for a distance of 631.86' to an iron pipe;

Then North 27° 10' 48" East for a distance of 55.46' to an iron pipe and **POINT OF BEGINNING**.

All bearings are referenced to magnetic north in Year 1975.

MEANING AND INTENDING TO CONVEY an area of 0.757 acres, more or less, of the property described in the deed from Hansen Farms, Inc. to Gray Plaza, Inc. dated May 27, 1969, and recorded in Cumberland County Registry of Deeds Book 3087, Page 137.

For source of title to Parcel Two reference is made to the deed of Gray Plaza, Inc. to Kenneth H. Sawyer dated December 4, 1975 and recorded at the Cumberland County Registry of Deeds in Book 3780, Page 194; the deed from the estate of Kenneth H. Sawyer to Jean S. Dunn recorded in Book 36196, Page 111 and the deed of Jean S. Dunn to Jean S. Dunn and Lloyd A. Dunn as joint tenants recorded in in Book 36257, Page 201.

Parcel Two is conveyed **SUBJECT TO** the restriction set forth in such deed recorded in said Registry of Deeds in Book 3780, Page 194 that no structures of any type will be built upon Parcel Two and that it will be retained as a green belt between the now or formerly Sawyer property and the boundary of land now or formerly of Gray Senior Housing, Inc.

PARCEL THREE:

A certain lot or parcel of land with any buildings thereon located in the Town of Gray, Cumberland County, Maine, bisecting Parcels One and Two above and more particularly described as follows:

COMMENCING at a 1" iron pipe marking the westerly corner of the land described in the deed of Gray Plaza, Inc. to Kenneth H. Sawyer recorded at the Cumberland County Registry of Deeds in Book 3780, Page 194;

Thence South 53° 57' 25" East 459.75 feet to a point on the westerly sideline of land now or formerly of the Maine Narrow Gauge Railroad and Industrial Heritage Trust (Cumberland County Registry of Deeds Book 31701, Page 37) being the **POINT OF BEGINNING**;

Thence North 07° 20' 44" West 856.26 feet through land described in a deed recorded in said Registry of Deeds in Book 16721, Page 339 to a point on the southerly sideline of land now or formerly of Beehive Properties, LLC (Cumberland County Registry of Deeds Book 32071, Page 336);

Thence North 85° 04' 37" East 50.04 feet along said Beehive Properties land to a point;

Thence South 07° 20' 44" East 901.40 feet to a point of the southwesterly sideline of the land described in Book 3780, Page 194 referred to above;

Then North 53° 57' 25" West 68.80 feet to the point of beginning. Bearings are referenced to grid North, Maine State Plane Coordinate System, NAD83, West Zone.

Meaning and intending to convey, and hereby conveying as Parcel Three a portion and a portion only of the railroad corridor of the former Portland, Gray and Lewiston Railroad as described in the deed from The Ibderdrola USA Foundation, Inc. to The Maine Narrow Gauge Railroad and Industrial Heritage Trust, d/b/a Maine Narrow Gauge Railroad Company & Museum dated May 30, 2014 and recorded in said Registry of Deeds , in Book 31701, Page 37 and including in this conveyance any rights as may have been acquired by adverse possession pertaining to the portion of such corridor conveyed by this deed. For further source of title to the portion hereby conveyed, reference is made to the deed of B. F. Skillings to the Portland, Gray and Lewiston Railroad Company recorded in said Registry of Deeds in Book 855, Page 102.

Also conveying with Parcel Three all privileges, servitudes, easements and other rights appurtenant to the former Portland, Gray & Lewiston Railroad located in that portion of the Corridor hereby conveyed and any tracks, sidings, switches and other improvements thereon.

The rights excepted and reserved to The Iberdrola USA Foundation, Inc., its successors and assigns, as specified in such deed recorded in said Registry of Deeds in Book 31701, Page 37 for an "Easement Area" over, under and across a one hundred (100) foot wide strip of land being fifty (50) feet either side of the centerline of the existing transmission line corridor designated Section 102 do not encumber the premises conveyed by this deed due to the fact that such "Easement Area" is not located on the premises hereby conveyed.

For Grantor's source of title to Parcel Three reference is made to the deed from The Maine Narrow Gauge Railroad and Industrial Heritage Trust, d/b/a Maine Narrow Gauge Railroad Company & Museum, dated December 10, 2019 and recorded at the Cumberland County Registry of Deeds in Book 36268, Page 178.

Parcels One, Two and Three described above are conveyed reserving to the Grantor, his successors and assigns, owning the residential property located at 3 Hancock Street (composed of the combined parcels described in the in the deeds recorded at the Cumberland County Registry of Deeds in Book 2599, Page 367 and Book 9735, Page 265) and their invitees or guests, for access to the abutting land as described in the deed recorded at the Cumberland County Registry of Deeds in Book 16721, Page 339 (that portion referred to as Parcel Two described in a deed recorded in said Registry of Deeds in Book 14756, Page 38) a recreational easement over and across the premises hereby conveyed more particularly described as follows:

The right of access by foot and recreational vehicles over and across a 50 foot wide right of way extending from Hancock Street over and across the premises hereby conveyed to and from the premises as described in CCRD, Book 16721, Page 339 as being Parcel Two described in CCRD, Book 14756, Page 38 in the location as shown on the plan attached hereto as Exhibit A-1 and as more particularly described in Exhibit B attached hereto and made a part hereof (the "Recreation Easement"). The Recreation Easement shall include the right to cut trees and vegetation; remove obstacles and otherwise maintain and fill the easement area as necessary to provide continued access for such use.

Also reserving to the Grantor, his successors and assigns, owning the residential premises located at 3 Hancock Street (described above) the right to access the 50 foot wide right of way above described from Hancock Street to the disposal area marked in the location shown on Exhibit A-1 attached hereto by foot or vehicle for the disposal of lawn clipping and tree or bush trimmings from Grantor's 3 Hancock Street property or his 20 Yarmouth Road Property (described in a deed recorded in said Registry of Deeds in Book 9077, Page 124) (the "Disposal Easement;", collectively with the Recreational Easement, the "Reserved Easements").

The Reserved Easements are subject to the following terms and conditions:

1. Grantee, its successors and assigns, shall at its expense maintain the two culverts within the Recreational Easement area.

2. Grantor, his heirs and assigns owning the residential premises located at 3 Hancock Street (collectively the "Grantor Parties"), shall indemnify, defend and hold harmless Grantee and its tenants, successors and assigns, of and from all liability, loss, cost, expense or damages arising from or relating in any way to the use by the Grantor Parties or their invitees or guests of the Reserved Easements. The reserved easements shall forever expire in the event the Grantor Parties either release them to the Grantee, its successors and assigns or convey the 3 Hancock Street property without a conveyance of the reserved easements. In such events, the provisions of this paragraph shall cease to apply to claims arising after such expiration.

3. Grantee, its successors and assigns (collectively, and with Grantee's tenants and employees, the "Grantee Parties"), shall indemnify, defend and hold harmless Grantor, his heirs and assigns, of and from all liability, loss, cost, expense or damages arising from or relating in any way to the use by the Grantee Parties of the Recreational Easement.

4. Either party may request in writing changes to the terms of the foregoing easements. Any requested changes shall be negotiated in good faith with the costs and attorneys' fees incurred by the parties to be the responsibility of the party requesting such changes.

The above described Parcels One, Two and Three are further conveyed together with and subject to any and all rights, easements, restrictions, privileges, and appurtenances of record, insofar as the same are in force and applicable.

The Grantor Lloyd A. Dunn is the surviving joint tenant of the three parcels conveyed; his wife, Jean S. Dunn having died on May 19, 2021 a resident of Gray, Cumberland County, Maine.

Also hereby granting and conveying to Grantee, without covenants of warranty, all right, title and interest of Grantor in and to the following described real property intended to provide a survey description of the boundaries of the premises conveyed by this deed located in Gray, Cumberland County, Maine:

A certain lot or parcel of land located on the easterly terminus of Hancock Street in the Town of Gray, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a 1" iron pipe on the northerly side of said Hancock Street and the southeasterly corner of land now or formerly of Cynthia L. McFarland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17870, Page 280. Thence:

1) N 07°15'29" W by said land of McFarland a distance of Two Hundred Twenty and 80/100 (220.80) feet to a point at land now or formerly of Beehive Properties, LLC as described in a deed recorded in said Registry in Book 32071, Page 336;

2) N 85°04'37" E by said land of Beehive Properties, LLC a distance of Four Hundred Thirteen and 33/100 (413.33) feet to a 1" iron rebar on the westerly side of land now or formerly of Gray Housing Associates as described in a deed recorded in said Registry in Book 7056, Page 80;

3) S 03°24'07" E by said land of Gray Housing Associates a distance of Eight Hundred Ninety-Six and 68/100 (896.68) feet to a 1" iron pipe;

4) N 33°26'27" E by said land of Gray Housing Associates a distance of Fifteen and 48/100 (15.48) feet to a drill hole in a boulder at the westerly corner of land of Jean S. Dunn and Lloyd A. Dunn as described in a deed recorded in said Registry in Book 16721, Page 339;

5) S 54°56'59" E by said land of Dunn a distance of Fifty and 00/100 (50.00) feet to a 1" iron pipe at land now or formerly of The Maine Narrow Gauge Railroad and Industrial Trust (Trust);

6) S 33°26'27" W by said Trust a distance of Sixty-Six and 40/100 (66.40) feet to a 1" iron pipe;

7) N 53°57'25" W by said Trust and land now or formerly of Gray Senior Housing, Inc. as described in a deed recorded in said Registry in Book 3676, Page 265 a distance Six Hundred Thirty-One and 98/100 (631.98) feet to a 1" iron pipe at the southerly corner of land now or formerly of Kelly A. Jarvis as described in a deed recorded in said Registry in Book 34200, Page 185;

8) N 10°08'40" E by said land of Jarvis a distance of Three Hundred Twelve and 38/100 (312.38) feet to a 1" iron pipe on the southerly side of said Hancock Street;

9) N 10°28'23" E by the easterly terminus of said Hancock Street a distance of Thirty-Three and 00/100 (33.00) feet to the point of beginning.

Bearings are based on Grid North, Maine State Plane Coordinate System, West Zone, NAD83.

The above parcel contains 7.71 acres, and comprises a portion of the land conveyed to Jean S. Dunn and Lloyd A. Dunn as described in a deed recorded in the Cumberland County Registry of Deeds in Book 16721, Page 339 (being Parcel Two; and being the same as Parcel One of deed to Jean S. Dunn recorded in said Registry in Book 14756, Page 38); the same land conveyed to Jean S. Dunn and Lloyd A. Dunn as described in a deed recorded in said Registry in Book 36268, Page 178; and the same land conveyed to Jean S. Dunn and Lloyd A. Dunn as described in a deed recorded in said Registry in Book 36257, Page 201 with reference made to deed to Jean S. Dunn recorded in said Registry in Book 36196, Page 111.

Reference is herein made to a Boundary & Topographic Survey of Meadowview made for Ransom Consulting, LLC by Owen Haskell, Inc. dated January 12, 2022.

DunnL\342-05\Exh A for deed to Avesta 1—24-22

EXHIBIT A-1

(Plan of Recreation Easement location)

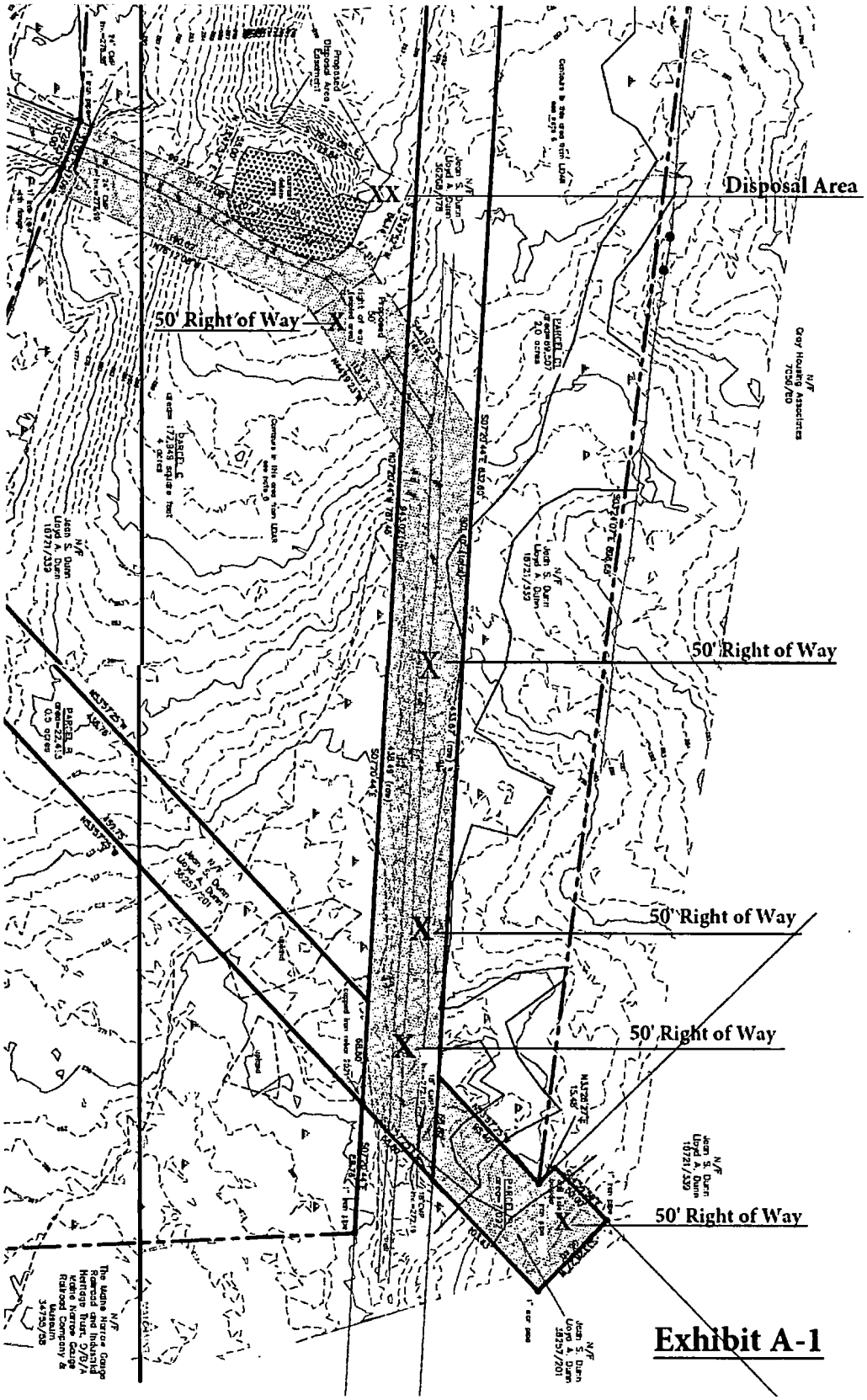

Disposal Area
50' Right of Way
50' Right of Way
50' Right of Way
50' Right of Way
50' Right of Way

Exhibit A-1

EXHIBIT B

A certain right of way on the easterly terminus of Hancock Street in the Town of Gray, County of Cumberland, State of Maine bounded and described as follows:

Beginning at a 1" iron pipe at the southeasterly corner of land now or formerly of Cynthia L. McFarland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17870, Page 280 and land now or formerly of Jean S. Dunn and Lloyd A. Dunn as described in a deed recorded in said Registry in Book 16721, Page 339 (Parcel 2). Thence:

1) S 76°12'08" E through said land of Dunn a distance of Two Hundred Seven and 37/100 (207.37) feet to a point;

2) S 44°19'23" E through said land of Dunn and across other land now or formerly of Jean S. Dunn and Lloyd A. Dunn as described in a deed recorded in said Registry in Book 36268, Page 178 a distance of One Hundred Forty-Four and 17/100 (144.17) feet to a point at said land of Dunn (Parcel 2 of Book 16721, Page 339);

3) S 07°20'44" E by said land of Dunn a distance of Four Hundred Thirty-Three and 67/100 (433.67) feet to a point at other land now or formerly of Jean S. Dunn and Lloyd A. Dunn as described in a deed recorded in said Registry in Book 36257, Page 201;

4) S 53°57'25" E by said land Dunn a distance of Ninety-Eight and 40/100 (98.40) feet to a 1" iron pipe at land now or formerly of Gray Housing Associates as described in a deed recorded in said Registry in Book 7056, Page 80;

5) N 33°26'27" E by said land of Gray Housing Associates a distance of Fifteen and 48/100 (15.48) feet to a drill hole in a boulder at other land of Jean S. Dunn and Lloyd A. Dunn as described in the deed recorded in said Registry in Book 16721, Page 339 (Parcel 3);

6) S 54°56'59" E by said land of Dunn a distance of Fifty and 00/100 (50.00) feet to a 1" iron pipe at land now or formerly of The Maine Narrow Gauge Railroad and Industrial Heritage Trust, D/B/A Maine Narrow Gauge Railroad Company & Museum as described in a deed recorded in said Registry in Book 34755, Page 58(The Trust);

7) S 33°26'27" W by said land of The Trust a distance of Sixty-Six and 40/100 (66.40) feet to a 1" iron pipe;

8) N 53°57'25" W by said land of The Trust a distance of One Hundred Seventy-Two and 23/100 (172.23) feet to said land of Dunn (Book 36257, Page 201);

9) N 07°20'44" W by said land of Dunn and other land of Dunn (Parcel 2 of Book 16721, Page 339) a total distance of Four Hundred Thirty-Eight and 49/100 (438.49) feet to a point;

10) N 44°19'23" W through said land of Dunn (Parcel 2 of Book 16721, Page 339) a distance of One Hundred Thirteen and 17/100 (113.17) feet to a point;

11) N 76°12'08" W through said land of Dunn a distance of One Hundred Ninety and 09/100 (190.09) feet to a point at land now or formerly of Kelly A. Jarvis as described in a deed recorded in said Registry in Book 34200, Page 185;

12) N 10°08'40" E by said land of Jarvis a distance of Seventeen and 09/100 (17.09) feet to a 1" iron pipe at the westerly terminus of said Hancock Street;

13) N 10°28'23" E by said Hancock Street a distance of Thirty-Three and 00/100 (33.00) feet to the point of beginning.

Bearings are referenced to grid north, Maine State Plane Coordinate System, West Zone, NAD83.

The above described right of way contains 46,988 square feet or 1.08 acres lying over a portion of land now or formerly of Jean S. Dunn and Lloyd A. Dunn as described in deeds recorded in the Cumberland County Registry of Deeds in Book 16721, Page 339, Book 36268, Page 178, and Book 36257, Page 201.

Reference is herein made to a plan entitled "Boundary and Topographic Survey of Meadowview" made for Ransom Consulting, LLC by Owen Haskell, Inc. dated January 12, 2022. (Copy attached hereto as Exhibit A-1).

Received
Recorded Register of Deeds
Feb 28,2022 02:44:04P
Cumberland County
Jessica M. Spaulding





GRAY SELF STORAGE

PORTLAND ROAD - GRAY, MAINE

PREPARED BY:

CIVIL ENGINEER:
TERRADYN CONSULTANTS, LLC
41 CAMPUS DR. SUITE 301
NEW GLOUCESTER, MAINE 04260
(207)926-5111

SURVEYOR:
WAYNE T. WOOD & COMPANY
30 WOOD DRIVE
GRAY, MAINE 04039
(207) 657-3330

WETLANDS SURVEY:
MARK CENCI GEOLOGIC INC.
NORTH YARMOUTH, MAINE 04097
(207) 329-3524

APPLICANT:

BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, MAINE 04097

OWNERS:

EQUITY TRUST COMPANY CUSTODIAN
FBO BETH CURETON

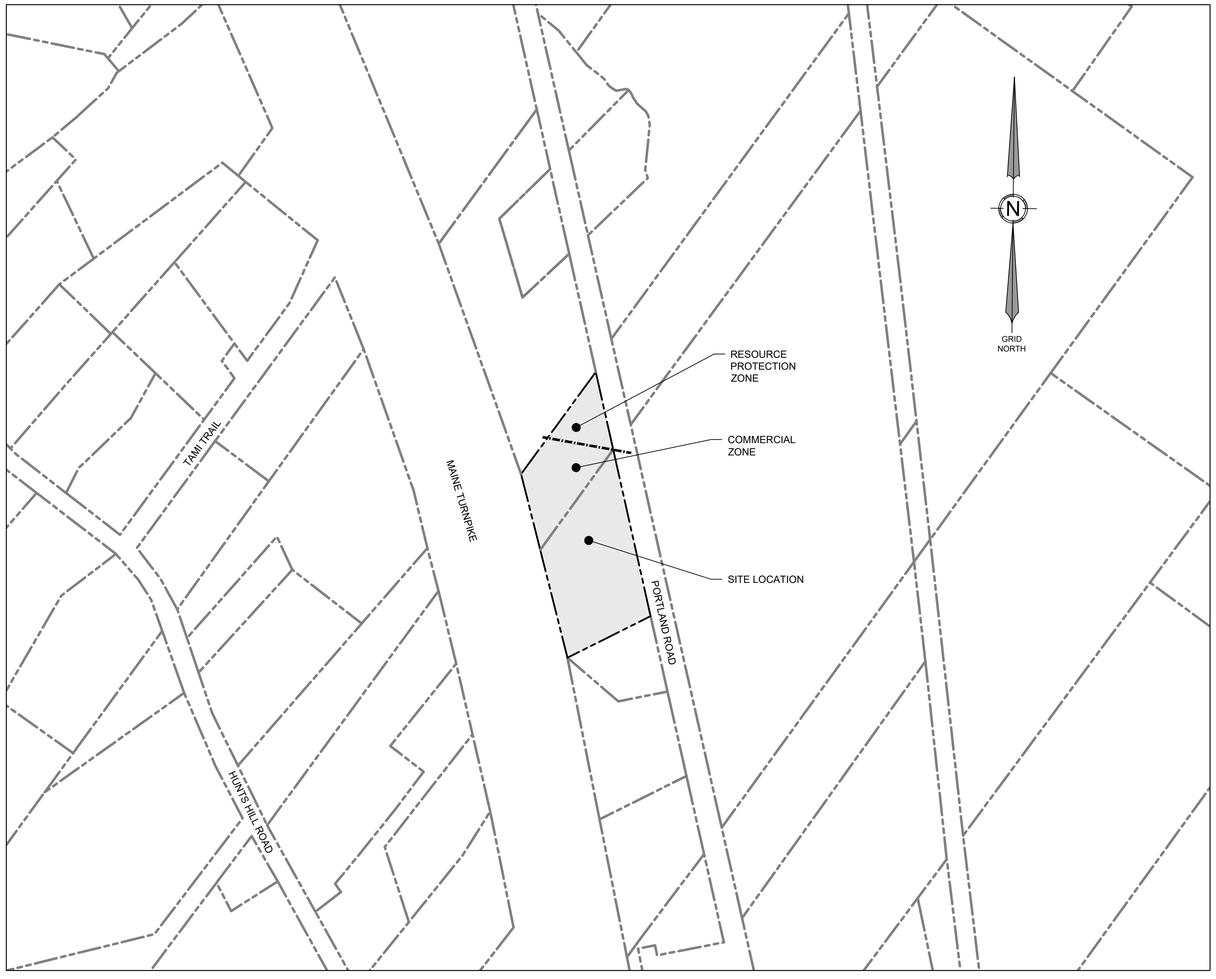
PROJECT PARCEL SITE

TOWN OF GRAY TAX ASSESSOR'S MAP & LOT NUMBERS

MAP	LOT
59	31-10
	31-14

SHEET INDEX

C-0.0	COVER SHEET & LOCATION MAP
S-1.0	BOUNDARY SURVEY
C-1.0	OVERALL PLAN
C-1.1	SITE LAYOUT & LANDSCAPING PLAN
C-2.0	GRADING & UTILITY PLAN
C-3.0	EROSION CONTROL NOTES & DETAILS
C-3.1	SITE DETAILS
C-3.2	DETAILS & NOTES



LOCATION MAP
1" = 200'

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- PROPOSED SETBACK LINE
- EXISTING SETBACK LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- ROAD CENTERLINE
- 124 EXISTING MINOR CONTOUR
- 124 EXISTING MAJOR CONTOUR
- 124 PROPOSED CONTOUR
- SD EXISTING STORMDRAIN
- SD PROPOSED STORMDRAIN
- OHE EXISTING OVERHEAD ELECTRIC & TELEPHONE
- OHE PROPOSED OVERHEAD ELECTRIC & TELEPHONE
- UGE EXISTING UNDERGROUND ELECTRIC & TELEPHONE
- UGE PROPOSED UNDERGROUND ELECTRIC & TELEPHONE
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- PROPOSED EDGE OF GRAVEL
- EXISTING TREE LINE
- PROPOSED TREE LINE
- CHAIN LINK FENCE
- PROPOSED FENCE
- EXISTING GUARDRAIL
- PROPOSED GUARDRAIL
- MB MULCH BERM
- PROPOSED TRANSFORMER
- PROPOSED LIGHT POLE
- EXISTING UTILITY POLE
- PROPOSED CATCH BASIN
- 30.20 EXISTING SPOT GRADE
- 30.20 PROPOSED SPOT GRADE
- EXISTING SIGN
- PROPOSED SIGN
- EXISTING BUILDING
- PROPOSED BUILDING
- WETLAND AREA
- PROPOSED PAVEMENT
- RIPRAP
- PROPOSED GRAVEL

APPROVED: TOWN OF GRAY
PLANNING BOARD

_____ DATE

_____

_____

_____

_____

_____

_____

_____

DATE: 3/16/2022
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102

41 CAMPUS DRIVE
SUITE 301
NEW GLOUCESTER, ME 04260

OFFICE: (207) 926-5111
www.terradynconsultants.com

TERRADYN CONSULTANTS, LLC

CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE:
COVER/LOCATION MAP

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	3/16/2022
SCALE:	
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125 C.DWG
SHEET	C-0.0

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCELS IS EQUITY TRUST COMPANY, FBO BETH CURETON BY DEED RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 38,413, PAGE 249 & BOOK 38,125 PAGE 201.

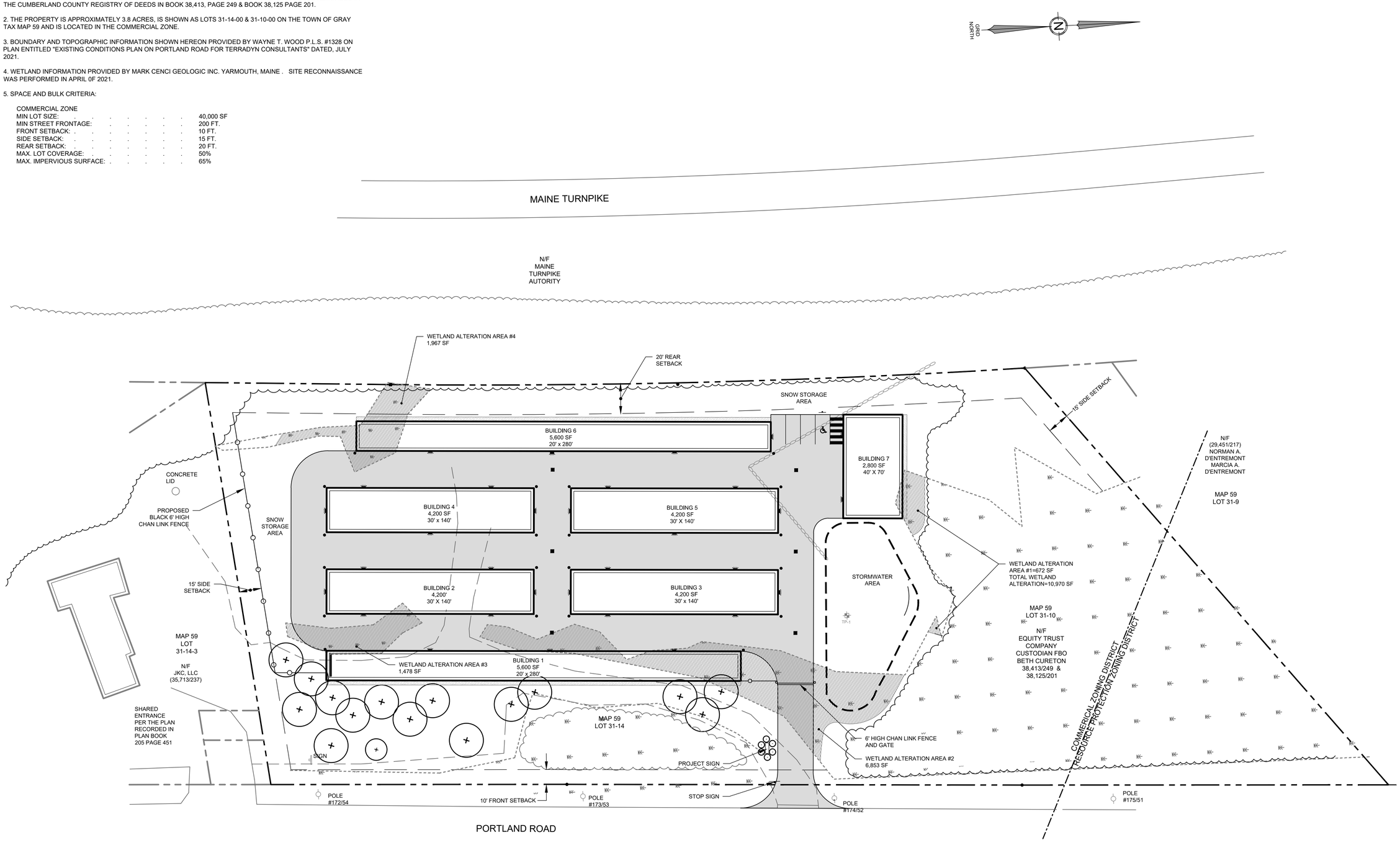
2. THE PROPERTY IS APPROXIMATELY 3.8 ACRES, IS SHOWN AS LOTS 31-14-00 & 31-10-00 ON THE TOWN OF GRAY TAX MAP 59 AND IS LOCATED IN THE COMMERCIAL ZONE.

3. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON PROVIDED BY WAYNE T. WOOD P.L.S. #1328 ON PLAN ENTITLED "EXISTING CONDITIONS PLAN ON PORTLAND ROAD FOR TERRADYN CONSULTANTS" DATED, JULY 2021.

4. WETLAND INFORMATION PROVIDED BY MARK CENCI GEOLOGIC INC. YARMOUTH, MAINE . SITE RECONNAISSANCE WAS PERFORMED IN APRIL 0F 2021.

5. SPACE AND BULK CRITERIA:

COMMERCIAL ZONE	
MIN LOT SIZE:	40,000 SF
MIN STREET FRONTAGE:	200 FT.
FRONT SETBACK:	10 FT.
SIDE SETBACK:	15 FT.
REAR SETBACK:	20 FT.
MAX. LOT COVERAGE:	50%
MAX. IMPERVIOUS SURFACE:	65%



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch =30 ft.

DATE: 3/16/2022
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY
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565 CONGRESS STREET
SUITE 201
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TERRADYN CONSULTANTS, LLC
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

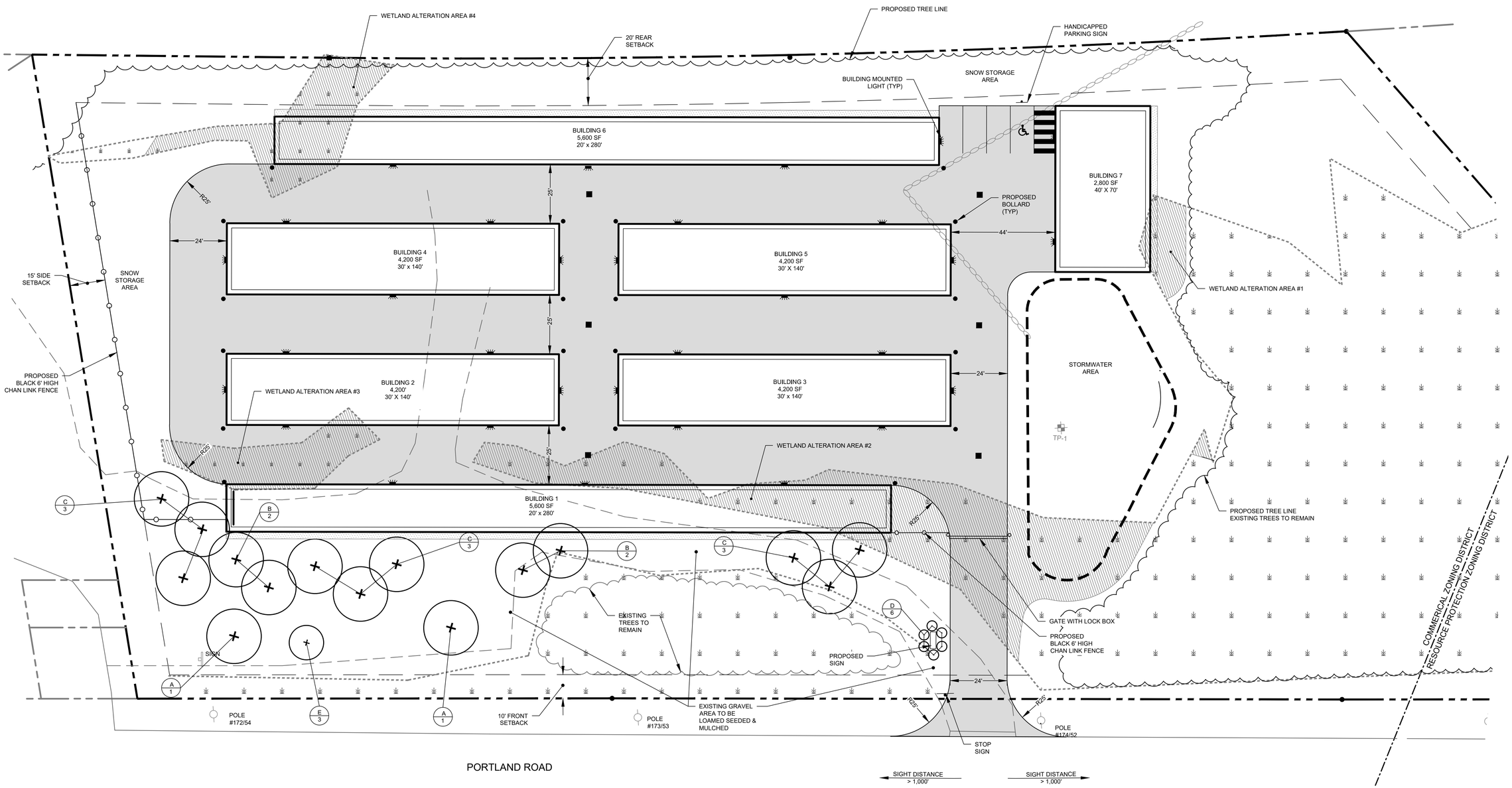
SHEET TITLE:
OVERALL PLAN

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	3/16/2022
SCALE:	1"=30'
DESIGNED:	JDA
JOB NO:	2125
FILE:	
SHEET	C-1.0

PLANT LIST:

KEY	COMMON & BOTANICAL NAME	SIZE	ROOT	QTY	NOTES
A	RED MAPLE - ACER RUBRUM	2 ½" CAL.	B & B	2	
B	WHITE SPRUCE - P. GLAUCA	5'-6' HT..	B & B	4	
C	WHITE PINE - P. STROBUS	4'-5' HT.	B & B	9	
D	N. BAYBERRY - M. PENSLVANICA	30" HT.	CONT.	6	3 CANES
E	DOGWOOD (OR SIMILAR FLOWERING TREE)	5'-6' HT..	B & B	1	



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DATE: 3/16/2022
P.E.: 10167

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1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

TERRADYN CONSULTANTS, LLC
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING
41 CAMPUS DRIVE SUITE 201 NEW GLOUCESTER, ME 04260
OFFICE: (207) 926-5111
www.terradynconsultants.com
565 CONGRESS STREET SUITE 201 PORTLAND, ME 04102

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: GRAY SELF STORAGE
PORTLAND ROAD, GRAY, ME

SHEET TITLE: SITE LAYOUT & LANDSCAPING PLAN

CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	3/16/2022
SCALE:	1"=20'
DESIGNED:	JDA
JOB NO:	2125
FILE:	
SHEET	C-1.1

HOUSEKEEPING NOTES:

1. 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.

2. GROUNDWATER PROTECTION. 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.

3. FUGITIVE SEDIMENT AND DUST. 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.

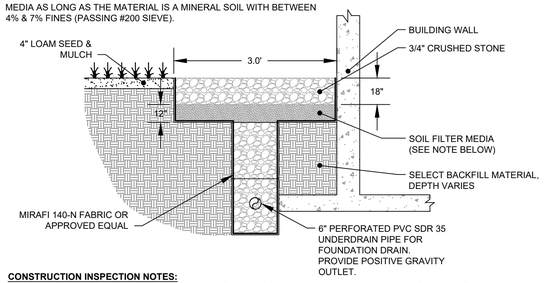
4. DEBRIS AND OTHER MATERIALS. LITTER, CONSTRUCTION DEBRIS, AND CHEMICALS EXPOSED TO STORMWATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

5. TRENCH OR FOUNDATION DE-WATERING. TRENCH DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER MUST BE REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, AND MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

6. NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES.

7. ADDITIONAL REQUIREMENTS. ADDITIONAL REQUIREMENTS MAY BE APPLIED ON A SITE-SPECIFIC BASIS.

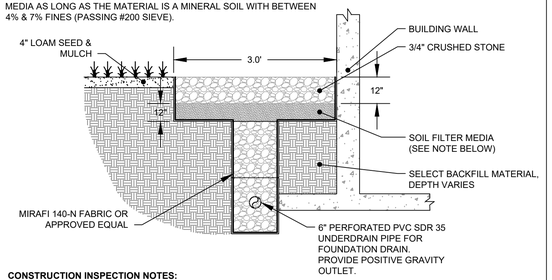
NOTE:
THE BACKFILL FOR THE FOUNDATION MAY BE USED AS THE FILTER MEDIA AS LONG AS THE MATERIAL IS A MINERAL SOIL WITH BETWEEN 4% & 7% FINES (PASSING #200 SIEVE).



CONSTRUCTION INSPECTION NOTES:
Inspections by a professional engineer shall consist of weekly visits to the site to inspect each the roof drip edge filter's underdrain construction, filter material placement, and overflow from initial ground disturbance to final stabilization of the filter.

BUILDING #7 ROOF DRIPLINE FILTER BED
NOT TO SCALE

NOTE:
THE BACKFILL FOR THE FOUNDATION MAY BE USED AS THE FILTER MEDIA AS LONG AS THE MATERIAL IS A MINERAL SOIL WITH BETWEEN 4% & 7% FINES (PASSING #200 SIEVE).

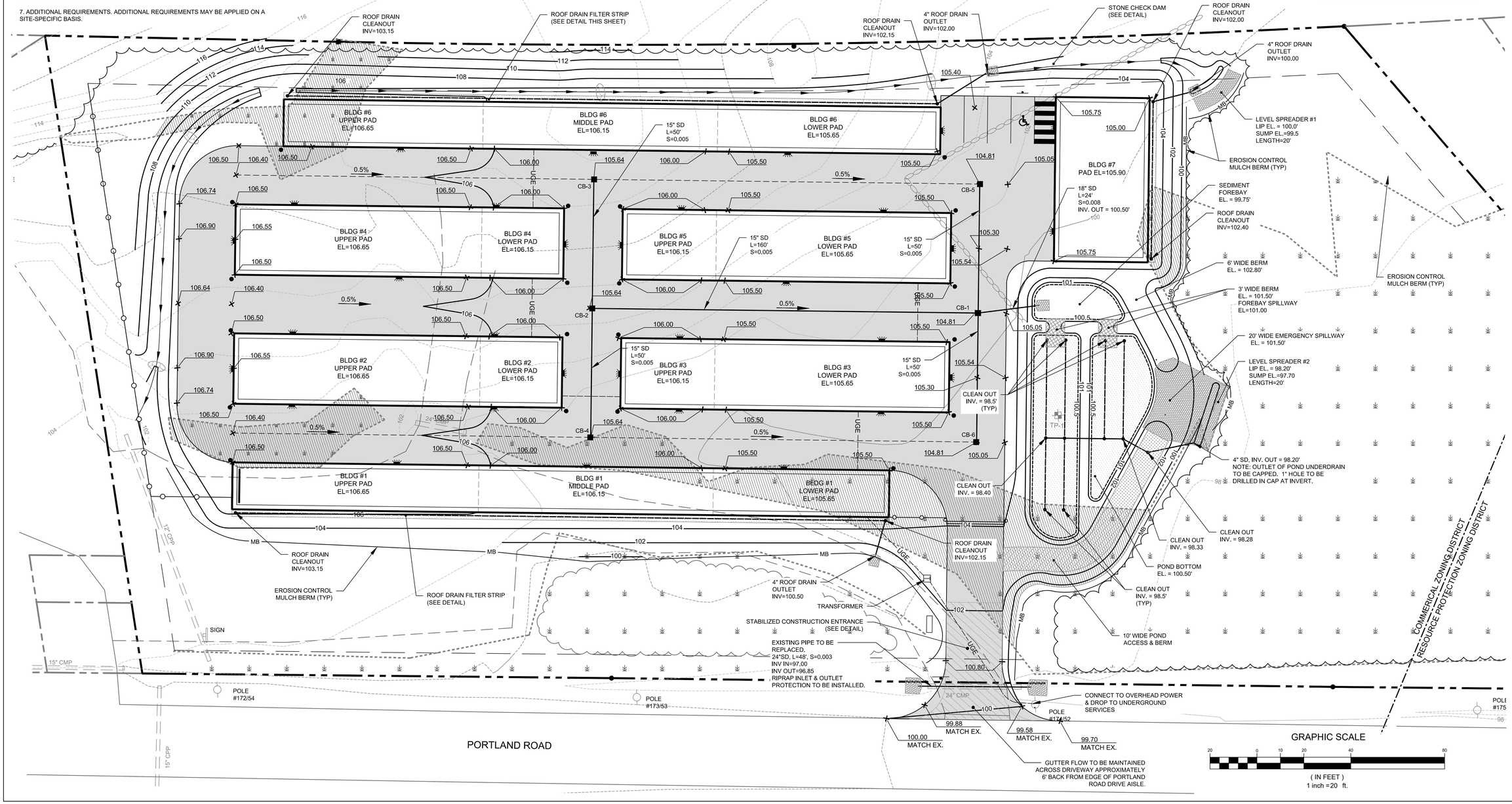


CONSTRUCTION INSPECTION NOTES:
Inspections by a professional engineer shall consist of weekly visits to the site to inspect each the roof drip edge filter's underdrain construction, filter material placement, and overflow from initial ground disturbance to final stabilization of the filter.

BUILDINGS #1&6 ROOF DRIPLINE FILTER BED
NOT TO SCALE

CATCH BASIN TABLE:

NAME	RIM	INV. IN	INV. OUT
CB-1	104.71	100.70(3)	100.70
CB-2	105.54	101.50(2)	101.50
CB-3	105.54	----------	101.75
CB-4	105.54	----------	101.75
CB-5	104.71	----------	100.95
CB-6	104.71	----------	100.95



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DATE: 3/16/2022
P.E.: 10167

565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102

41 CAMPUS DRIVE
SUITE 201
NEW GLOUCESTER, ME 04260

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CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE:
GRADING & UTILITY PLAN

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	3/16/2022
SCALE:	1"=20'
DESIGNED:	JDA
JOB NO:	2125
FILE:	
SHEET	C-2.0

EROSION AND SEDIMENT CONTROL PLAN

PRE-CONSTRUCTION PHASE
A PERSON WHO CONDUCTS, OR CAUSES TO BE CONDUCTED, AN ACTIVITY THAT INVOLVES FILLING, DISPLACING OR EXPOSING SOIL OR OTHER EARTHEN MATERIALS SHALL TAKE MEASURES TO PREVENT UNREASONABLE EROSION OF SOIL OR SEDIMENT BEYOND THE PROJECT SITE OR INTO A PROTECTED NATURAL RESOURCE AS DEFINED IN 38 MRSA § 480-B. EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE THE ACTIVITY BEGINS. MEASURES MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL THE SITE IS PERMANENTLY STABILIZED. ADEQUATE AND TIMELY TEMPORARY AND PERMANENT STABILIZATION MEASURES MUST BE TAKEN. THE SITE MUST BE MAINTAINED TO PREVENT UNREASONABLE EROSION AND SEDIMENTATION. MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE.

BMP CONSTRUCTION PHASE
A. SEDIMENT BARRIERS. PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE EDGE OF ANY DOWNGRADIENT DISTURBED AREA AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE PROPOSED DISTURBED AREA. MAINTAIN THE SEDIMENT BARRIERS UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.

B. CONSTRUCTION ENTRANCE: PRIOR TO ANY CLEARING OR GRUBBING, A CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT THE INTERSECTION WITH THE PROPOSED ACCESS DRIVE AND THE EXISTING ROADWAY TO AVOID TRACKING OF MUD, DUST AND DEBRIS FROM THE SITE.

C. RIPRAP: SINCE RIPRAP IS USED WHERE EROSION POTENTIAL IS HIGH, CONSTRUCTION MUST BE SEQUENCED SO THAT THE RIPRAP IS PUT IN PLACE WITH THE MINIMUM DELAY. DISTURBANCE OF AREAS WHERE RIPRAP IS TO BE PLACED SHOULD BE UNDERTAKEN ONLY WHEN FINAL PREPARATION AND PLACEMENT OF THE RIPRAP CAN FOLLOW IMMEDIATELY BEHIND THE INITIAL DISTURBANCE. WHERE RIPRAP IS USED FOR OUTLET PROTECTION, THE RIPRAP SHOULD BE PLACED BEFORE OR IN CONJUNCTION WITH THE CONSTRUCTION OF THE PIPE OR CHANNEL SO THAT IT IS IN PLACE WHEN THE PIPE OR CHANNEL BEGINS TO OPERATE. MAINTAIN TEMPORARY RIPRAP, SUCH AS TEMPORARY CHECK DAMS UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.

D. TEMPORARY STABILIZATION. STABILIZE WITH TEMPORARY SEEDING, MULCH, OR OTHER NON-ERODABLE COVER ANY EXPOSED SOILS THAT WILL REMAIN UNWORKED FOR MORE THAN 14 DAYS EXCEPT, STABILIZE AREAS WITHIN 100 FEET OF A WETLAND OR WATERBODY WITHIN 7 DAYS OR PRIOR TO A PREDICTED STORM EVENT, WHICHEVER COMES FIRST. IF HAY OR STRAW MULCH IS USED, THE APPLICATION RATE MUST BE 2 BALES (70-90 POUNDS) PER 1000 SF OR 1.5 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 75 TO 90% OF THE GROUND SURFACE. HAY MULCH MUST BE KEPT MOIST OR ANCHORED TO PREVENT WIND BLOWING. AN EROSION CONTROL BLANKET OR MAT SHALL BE USED AT THE BASE OF GRASSED WATERWAYS, STEEP SLOPES (15% OR GREATER) AND ON ANY DISTURBED SOIL WITHIN 100 FEET OF LAKES, STREAMS AND WETLANDS. GRADING SHALL BE PLANNED SO AS TO MINIMIZE THE LENGTH OF TIME BETWEEN INITIAL SOIL EXPOSURE AND FINAL GRADING. ON LARGE PROJECTS THIS SHOULD BE ACCOMPLISHED BY PHASING THE OPERATION AND COMPLETING THE FIRST PHASE UP TO FINAL GRADING AND SEEDING BEFORE STARTING THE SECOND PHASE, AND SO ON.

E. VEGETATED WATERWAY. UPON FINAL GRADING, THE DISTURBED AREAS SHALL BE IMMEDIATELY SEEDED TO PERMANENT VEGETATION AND MULCHED AND WILL NOT BE USED AS OUTLETS UNTIL A DENSE, VIGOROUS VEGETATIVE COVER HAS BEEN OBTAINED. ONCE SOIL IS EXPOSED FOR WATERWAY CONSTRUCTION, IT SHOULD BE IMMEDIATELY SHAPED, GRADED AND STABILIZED. VEGETATED WATERWAYS NEED TO BE STABILIZED EARLY DURING THE GROWING SEASON (PRIOR TO SEPTEMBER 15). IF FINAL SEEDING OF WATERWAYS IS DELAYED PAST SEPTEMBER 15, EMERGENCY PROVISIONS SUCH AS SOD OR RIPRAP MAY BE REQUIRED TO STABILIZE THE CHANNEL. WATERWAYS SHOULD BE FULLY STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

PERMANENT STABILIZATION DEFINED
A. SEEDED AREAS. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS AN 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

B. SODDED 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 APPROVED APPLICATION RATES AND LIMITATIONS.

D. RIPRAP. FOR 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. STONE MUST BE SIZED APPROPRIATELY. IT IS RECOMMENDED THAT ANGULAR STONE BE USED.

E. AGRICULTURAL USE. FOR CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL PURPOSES (E.G., PIPELINES ACROSS CROP LAND), PERMANENT STABILIZATION MAY BE ACCOMPLISHED BY RETURNING THE DISTURBED LAND TO AGRICULTURAL USE.

F. PAVED AREAS. FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED.

G. DITCHES, CHANNELS, AND SWALES. FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH WELL-GRADED RIPRAP, OR WITH ANOTHER NON-EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE LINING, UNDERCUTTING OF THE BANKS, OR DOWN-CUTTING OF THE CHANNEL.

GENERAL CONSTRUCTION PHASE
THE FOLLOWING EROSION CONTROL MEASURES SHALL BE FOLLOWED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION OF THIS PROJECT:

A. ALL TOPSOIL SHALL BE COLLECTED, STOCKPILED, SEEDED WITH RYE AT 3 POUNDS/1,000 SF AND MULCHED, AND REUSED AS REQUIRED. SILT FENCING SHALL BE PLACED DOWN GRADIENT FROM THE STOCKPILED LOAM. STOCKPILE TO BE LOCATED BY DESIGNATION OF THE OWNER AND INSPECTING ENGINEER.

B. THE INSPECTING ENGINEER AT HIS/HER DISCRETION, MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES AND/OR SUPPLEMENTAL VEGETATIVE PROVISIONS TO MAINTAIN STABILITY OF EARTHWORKS AND FINISH GRADED AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY SUPPLEMENTAL MEASURES AS DIRECTED BY THE INSPECTING ENGINEER. FAILURE TO COMPLY WITH THE ENGINEER'S DIRECTIONS WILL RESULT IN DISCONTINUATION OF CONSTRUCTION ACTIVITIES.

C. EROSION CONTROL MESH SHALL BE APPLIED IN ACCORDANCE WITH THE PLANS OVER ALL FINISH SEEDED AREAS AS SPECIFIED ON THE DESIGN PLANS.

D. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN UNTIL THEY ARE ADEQUATELY STABILIZED.

E. ALL EROSION, AND SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

F. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIALS.

G. AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL.

H. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC., SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.

I. ALL FILLS SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS.

J. EXCEPT FOR APPROVED LANDFILLS OR NON-STRUCTURAL FILLS, FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS.

K. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL FILLS.

L. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION.

M. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED APPROPRIATELY.

N. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

O. REMOVE ANY TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE.

PERMANENT VEGETATION
PERMANENT VEGETATIVE COVER SHOULD BE ESTABLISHED ON DISTURBED AREAS WHERE PERMANENT, LONG LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL, TO REDUCE DAMAGES FROM SEDIMENT AND RUNOFF, AND TO ENHANCE THE ENVIRONMENT.

SEEDBED PREPARATION
A. GRADE AS FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE.

B. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS SUCH AS THOSE OFFERED BY THE UNIVERSITY OF MAINE SOIL TESTING LABORATORY. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL COOPERATIVE EXTENSION SERVICE OFFICE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED 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 SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.D. REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.

E. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED; THE AREA MUST BE TILLED AND FIRMED AS ABOVE.

F. PERMANENT SEEDING SHOULD 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 SHOULD BE HARD SEED (UNSCARIFIED). IF SEEDING CANNOT BE DONE WITHIN THE SEEDING DATES, MULCH ACCORDING TO THE TEMPORARY MULCHING BMP AND OVERWINTER STABILIZATION AND CONSTRUCTION TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

G. FOLLOWING SEED BED PREPARTATION, SWALE AREAS, FILL AREAS AND BACK SLOPES SHALL BE SEEDED AT A RATE OF 3 LBS./1,000 S.F. WITH A MIXTURE OF 35% CREEPING RED FESCUE, 6% RED TOP, 24% KENTUCKY BLUEGRASS, 10% PERENNIAL RYEGRASS, 20% ANNUAL RYEGRASS AND 5% WHITE DUTCH CLOVER.

I. AREAS WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING.

J. AREAS WHICH CANNOT BE SEEDED WITHIN THE GROWING SEASON SHALL BE MULCHED FOR OVER-WINTER PROTECTION AND THE AREA SHOULD BE SEEDED AT THE BEGINNING OF THE GROWING SEASON.

WINTER CONSTRUCTION PHASE
IF AN AREA IS NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES BY NOVEMBER 15, THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES.

A. PERMANENT STABILIZATION CONSISTS OF AT LEAST 90% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.

B. DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH.

C. APPLY HAY MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST BE ANCHORED.

D. USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR ALL SLOPES GREATER THAN 8 % OR OTHER AREAS EXPOSED TO DIRECT WIND.

E. INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGEWAYS (BOTTOM AND SIDES) WITH A SLOPE GREATER THAN 3 %.

F. SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.

G. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SO THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.

H. AN AREA WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.

I. TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.

J. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED THAT SAME DAY.

K. IF SNOWFALL IS GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.

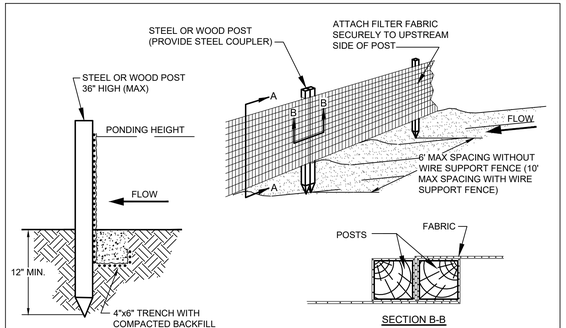
L. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.

M. ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.

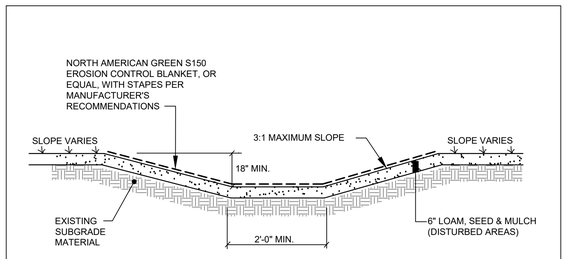
MAINTENANCE AND INSPECTION PHASE
A. MINIMUM EROSION CONTROL MEASURES WILL NEED TO BE IMPLEMENTED AND THE APPLICANT WILL BE RESPONSIBLE TO MAINTAIN ALL COMPONENTS OF THE EROSION CONTROL PLAN UNTIL THE SITE IS FULLY STABILIZED. HOWEVER, BASED ON SITE AND WEATHER CONDITIONS DURING CONSTRUCTION, ADDITIONAL 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

B. A LOG (REPORT) MUST BE KEPT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME(S) AND QUALIFICATIONS OF THE PERSONNEL MAKING THE INSPECTION, THE DATE(S) OF THE INSPECTION, AND MAJOR OBSERVATIONS RELATING TO OPERATION OF EROSION AND SEDIMENTATION CONTROLS AND POLLUTION PREVENTION MEASURES. MAJOR OBSERVATIONS MUST INCLUDE: BMPS THAT NEED TO BE MAINTAINED; LOCATION(S) OF BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION; AND LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED THAT DID NOT EXIST AT THE TIME OF INSPECTION. FOLLOW-UP TO CORRECT DEFICIENCIES OR ENHANCE CONTROLS MUST ALSO BE INDICATED IN THE LOG AND DATED, INCLUDING WHAT ACTION WAS TAKEN AND WHEN.

DEWATERING
A DEWATERING PLAN IS NEEDED TO ADDRESS EXCAVATION DE-WATERING 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.

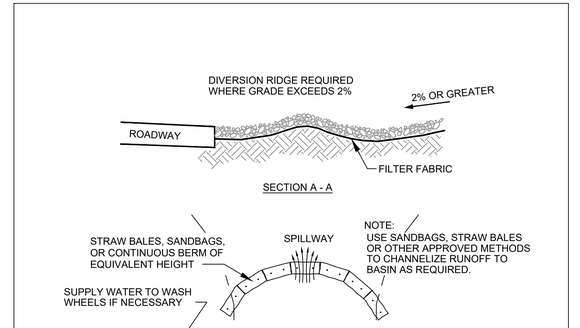


SILT FENCE
NOT TO SCALE



NOTE: REFER TO GRADING PLAN FOR DITCH WIDTH AND SIDE SLOPES

GRASSED SWALE
NOT TO SCALE

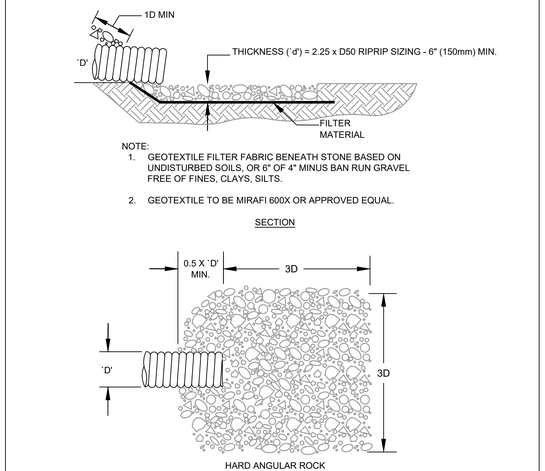


NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.

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

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

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



NOTE:
1. GEOTEXTILE FILTER FABRIC BENEATH STONE BASED ON UNDISTURBED SOILS, OR 6" OF 4" MINUS BAN RUN GRAVEL FREE OF FINES, CLAYS, SILTS.

2. GEOTEXTILE TO BE MIRAFI 600X OR APPROVED EQUAL.

SECTION

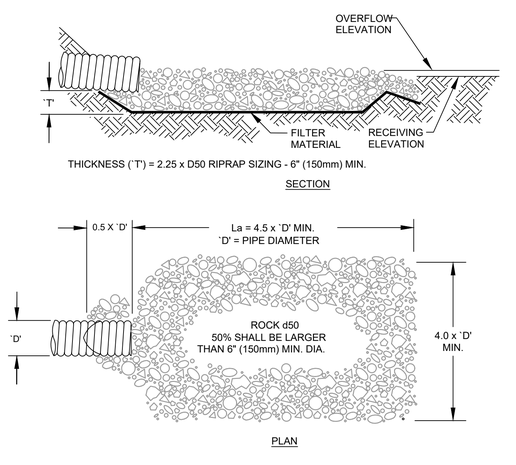
PLAN

PIPE INLET PROTECTION SIZING TABLE

PIPE SIZE (IN)	RIRAP SIZING (D50)	LENGTH (FT)	WIDTH (FT)
6	3	2.0	1.5
12	5	3.5	3.0
15	6	4.5	3.75
18	8	5.25	4.5
24	10	7.0	6.0
30	12	8.75	7.5
36	14	10.5	9.0

NOTES:
1. IN DEFINED CHANNELS, APRON SHALL EXTEND FULL WIDTH OF BOTTOM AND ONE FOOT ABOVE MAX. HEADWATER OR UP TO BANK FULL, WHICHEVER IS LESS.

PIPE INLET PROTECTION



PIPE OUTLET PROTECTION SIZING TABLE

PIPE SIZE (IN)	RIP RAP SIZING (D50)	LENGTH (FT)	WIDTH (FT)
6	3	2.5	2.0
12	5	5.0	4.0
15	6	6.25	5.0
18	8	7.5	6.0
24	10	10.0	8.0
30	12	13.0	10.0
36	14	15.0	12.0

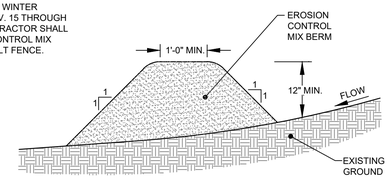
NOTES:
1. `La' = LENGTH OF APRON. DISTANCE `La' SHALL BE OF SUFFICIENT LENGTH TO DISSIPATE ENERGY.

2. APRON SHALL BE SET AT A ZERO GRADE AND ALIGNED STRAIGHT.

3. FILTER MATERIAL SHALL BE FILTER FABRIC (MIRAFI 600X OR APPROVED EQUAL) OR 6" (150mm) THICK MINIMUM GRADED GRAVEL LAYER.

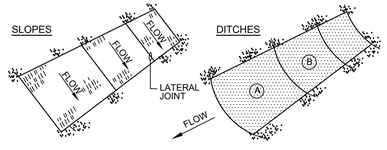
PIPE OUTLET PROTECTION
NOT TO SCALE

NOTE:
DURING PERIODS OF WINTER CONSTRUCTION (NOV. 15 THROUGH APRIL 15), THE CONTRACTOR SHALL INSTALL EROSION CONTROL MIX BERMS IN LIEU OF SILT FENCE.



EROSION CONTROL MIX:
EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES & 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:
- THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80% - 100% DRY WEIGHT BASIS
- PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70%, MAXIMUM OF 85% PASSING A 0.75" SCREEN
- THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED
- LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
- SOLUBLE SALTS CONTENT SHALL BE < 4.0 mmhos/cm.
- ph SHALL FALL BETWEEN 5.0 - 8.0.

EROSION CONTROL MIX BERM
NOT TO SCALE



NOTES:
1. BURY THE TOP END OF THE MESH MATERIAL IN A 6" TRENCH AND BACKFILL AND TAMP TRENCHING SECURE END WITH STAPLES AT 6" SPACING, 4" DOWN FROM EXPOSED END.

2. FLOW DIRECTION JOINTS TO HAVE UPPER END OF LOWER STRIP BURIED WITH UPPER LAYERS OVERLAPPED 4" AND STAPLED. OVERLAP B OVER A.

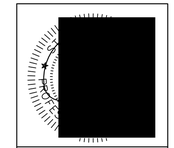
3. LATERAL JOINTS TO HAVE 4" OVERLAP OF STRIPS. STAPLE 18" ON CENTER.

4. STAPLE OUTSIDE LATERAL EDGE 2' ON CENTER.

5. WIRE STAPLES TO BE MIN. OF #11 WIRE, 6" LONG & 1-1/2" WIDE.

6. USE NORTH AMERICAN GREEN DS 150 (OR APPROVED EQUAL) ON SLOPES BETWEEN 4:1-2:1. USE NORTH AMERICAN GREEN VMAX SC250 PERMANENT TURF REINFORCEMENT MAT (OR APPROVED EQUAL) ON SLOPES 2:1 AND STEEPER..

EROSION CONTROL BLANKET
NOT TO SCALE



DATE: 3/16/2022
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

565 CONGRESS STREET
SUITE 301
PORTLAND, ME 04102

41 CAMPUS DRIVE
SUITE 305
NEW GLOUCESTER, ME 04260

OFFICE: (207) 926-5111
www.terradynconsultants.com

TERRADYN CONSULTANTS, LLC
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

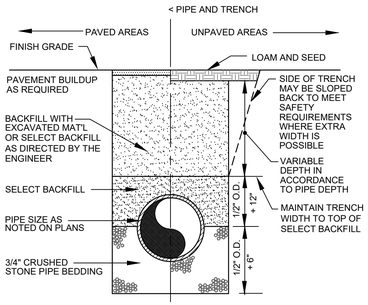
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE:
EROSION CONTROL NOTES & DETAILS

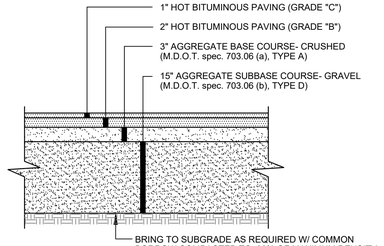
CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	3/16/2022
SCALE:	AS NOTED
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125-D
SHEET	C-3.0



TYPICAL TRENCH SECTION

NOT TO SCALE

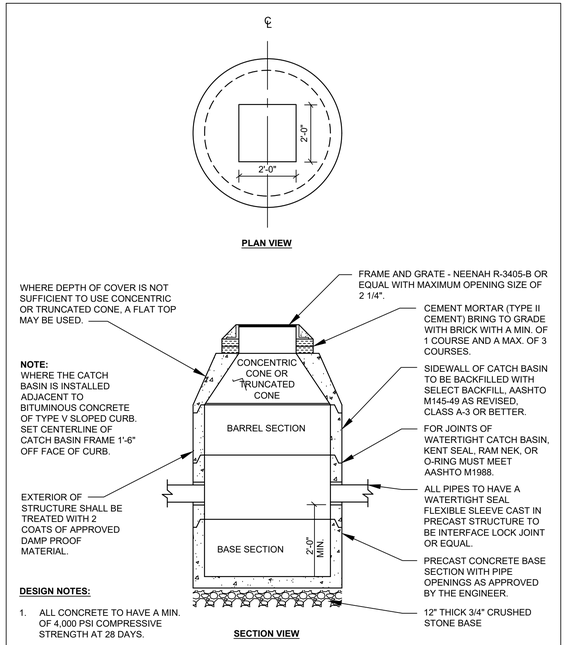


NOTES:

1. COMPACT GRAVEL SUBBASE COURSE TO 92% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

TYP. PAVED PARKING LOT SECTION

NOT TO SCALE



NOTE:
WHERE THE CATCH BASIN IS INSTALLED ADJACENT TO BITUMINOUS CONCRETE OF TYPE V SLOPED CURB. SET CENTERLINE OF CATCH BASIN FRAME 1'-6" OFF FACE OF CURB.

SECTION VIEW

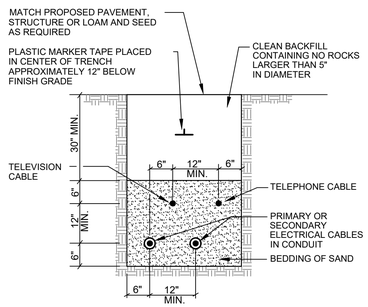
DESIGN NOTES:

1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.12 IN SQ./LF..

NOTE:
CASCADE GRATES SHALL BE INSTALLED ON GRADIENT OF GUTTER IF PROFILE GRADE EXCEEDS 5% GRATES SHALL BE DEPRESSED 2" BELOW NORMAL GUTTER GRADE UNLESS THIS DEPRESSION INTERFERES WITH TRAFFIC. PARALLEL BAR GRATES SHALL BE INSTALLED ON A LEVEL GRADIENT.

TYPICAL CATCH BASIN

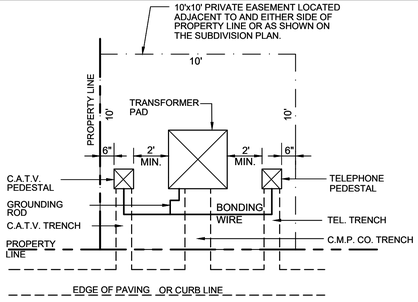
NOT TO SCALE



CABLES TO BE ENCASED IN SCHEDULE 40 PVC CONDUIT WHEN RUN BENEATH PAVED AREAS.

TYPICAL UNDERGROUND CABLE INSTALLATION

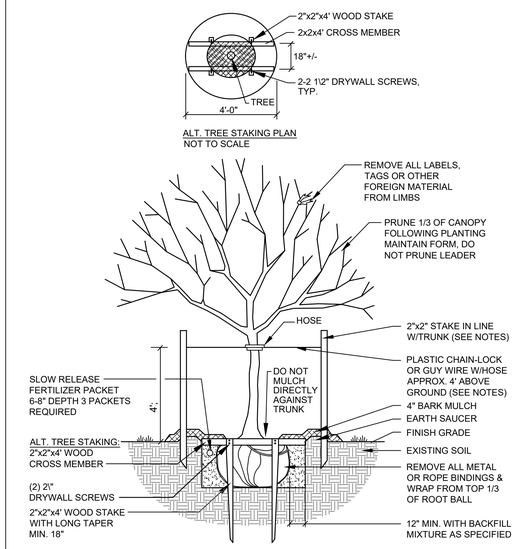
NOT TO SCALE



NOTE:
TRANSFORMER PAD AND COVER TO BE FIBERGLASS MEETING CENTRAL MAINE POWER SPECIFICATIONS.

TRANSFORMER DETAIL

NOT TO SCALE

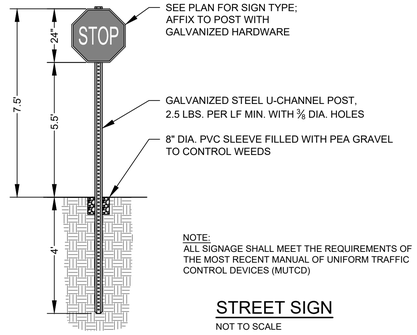


ALT. TREE STAKING PLAN
NOT TO SCALE

NOTES:
INSTALL STAKES AND GUYS TO TREES IF THE FOLLOWING APPLY:
1. THE TREE IS OF SUBSTANTIAL SIZE.
2. THE PLANTING LOCATION IS EXTREMELY WINDY, AS ON OPEN UNDEVELOPED SITES.
3. THE PLANTING LOCATION IS COMPRISED OF SAND OR OTHER LOOSE TEXTURED SOILS.
4. IF STAKES AND GUYS ARE REQUIRED, REMOVE AFTER ONE YEAR TIME.

DECIDUOUS TREES 2" TO 4" CALIPER

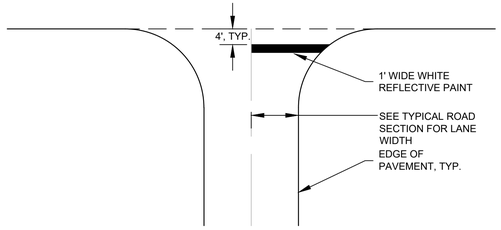
NOT TO SCALE



NOTE:
ALL SIGNAGE SHALL MEET THE REQUIREMENTS OF THE MOST RECENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

STREET SIGN

NOT TO SCALE

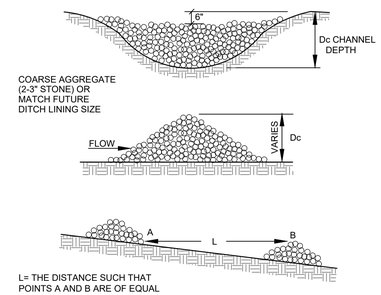


STOP BAR DETAIL

NOT TO SCALE

CONSTRUCTION NOTES:

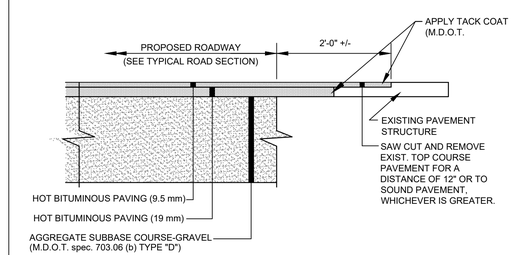
1. CHECK DAMS SHALL BE INSTALLED BEFORE RUNOFF IS DIRECTED TO THE SWALE.
2. THE AREA AROUND EACH CHECK DAM SHALL BE FREE OF DEBRIS.
3. THE MAXIMUM HEIGHT OF A STONE CHECK DAM SHALL BE 2 FEET WITH A 6-INCH DEPRESSION AT ITS CENTER FRO OVERFLOW. THE EDGES OF THE DAM SHALL BE KEYED INTO THE EMBANKMENTS TO PREVENT SIDE EROSION.
4. MECHANICAL PLACEMENT FOLLOWED BY HAND PLACEMENT WILL BE NECESSARY TO ACHIEVE A TIGHT MASS WITHIN THE CHANNEL AND ENSURE THAT THE CENTER OF THE DAM IS LOWER THAN THE EDGES.
5. ANY EROSION DOWNGRADIENT OR AROUND THE EDGES OF THE STONE CHECK DAMS SHALL BE CORRECTED IMMEDIATELY.
6. THE CHECK DAM MAY BE REMOVED WHEN THE SWALE IS STABILIZED WITH VEGETATION (90% COVERAGE).



L= THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

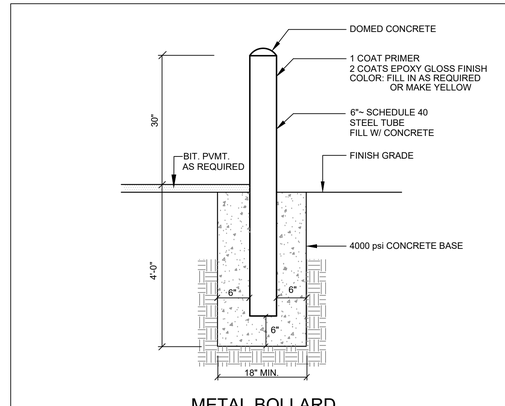
STONE CHECK DAM

NOT TO SCALE



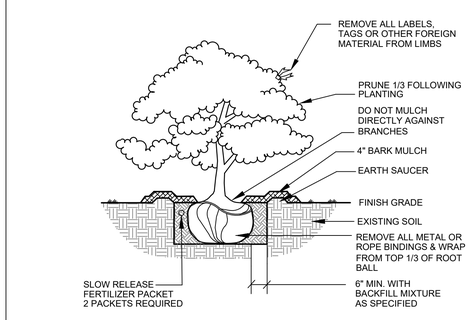
TYPICAL PAVEMENT JOINT

NOT TO SCALE



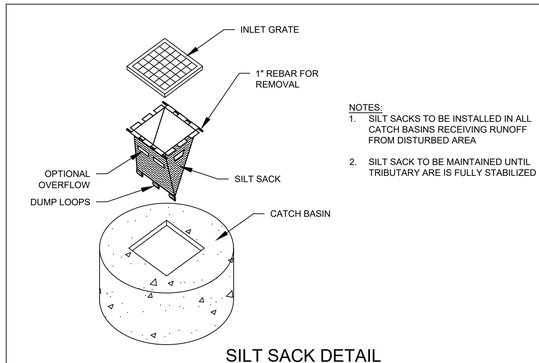
METAL BOLLARD

NOT TO SCALE



DECIDUOUS & EVERGREEN SHRUB

NOT TO SCALE



NOTES:
1. SILT SACKS TO BE INSTALLED IN ALL CATCH BASINS RECEIVING RUNOFF FROM DISTURBED AREA
2. SILT SACK TO BE MAINTAINED UNTIL TRIBUTARY ARE IS FULLY STABILIZED

SILT SACK DETAIL

NOT TO SCALE

[redacted]

DATE: 3/16/2022
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

565 CONGRESS STREET
SUITE 301
PORTLAND, ME 04102

41 CAMPUS DRIVE
SUITE 201
NEW GLOUCESTER, ME 04260

OFFICE: (207) 926-5111
www.terradynconsultants.com

TERRADYN CONSULTANTS, LLC

CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE:
SITE DETAILS

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	3/16/2022
SCALE:	AS NOTED
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125-D
SHEET	C-3.1

CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.

2. 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 WORK.

3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.

4. 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.

5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.

6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.

7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.

8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.

9. 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 2016 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.

10. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. 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.

11. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. 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 TOWN OR CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.

12. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. 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.

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 SAWCUT 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 TOWN AS APPLICABLE.

17. THE PROPOSED LIMITS OF CLEARING SHOWN HEREON ARE APPROXIMATE BASED UPON THE PROPOSED LIMITS OF SITE GRADING. THE APPLICANT RESERVES THE RIGHT TO PERFORM NORMAL FOREST MANAGEMENT ACTIVITIES OUTSIDE OF THE CLEARING LIMIT AS SHOWN. TREE REMOVAL OUTSIDE OF THE LIMITS OF CLEARING MAY BE NECESSARY TO REMOVE DEAD OR DYING TREES OR TREE LIMBS. THIS REMOVAL IS DUE TO POTENTIAL SAFETY HAZARDS AND TO PROMOTE PROPER FOREST GROWTH.

18. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.

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 COMPLETION.

20. 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.

21. 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 JUDGMENT OF TERRADYN CONSULTANTS, LLC.

22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.

23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.

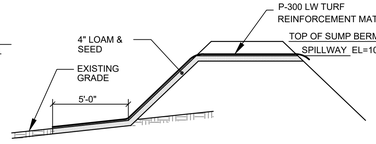
24. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.

25. 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 TO ANY WORK.

26. 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.

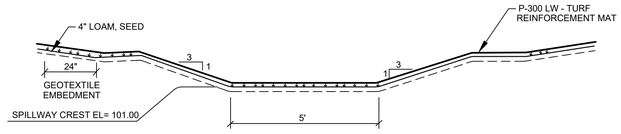
EMBANKMENT CONSTRUCTION

1. CONSTRUCTION OF COMMON BORROW MATERIAL MEETING M.D.O.T. SPECIFICATION 703.
2. PLACE BORROW MATERIAL IN 12" LIFTS COMPACTED TO 95% OF MAXIMUM DRY DENSITY.
3. INSTALL RIPRAP AND EROSION CONTROL MESH WHERE SPECIFIED ON PLANS
4. LOAM, SEED, AND STABILIZE IN ACCORDANCE WITH SEDIMENTATION AND EROSION CONTROL PLAN.



FOREBAY SPILLWAY SECTION - FILTER BASIN

NOT TO SCALE



FOREBAY BERM SPILLWAY CROSS-SECTION

NOT TO SCALE

CONSTRUCTION PHASE NOTES:

Construction Sequence: The soil filter media and vegetation must not be installed until the area that drains to the filter has been permanently stabilized with pavement or other structure, 90% vegetation cover, or other permanent stabilization unless the runoff from the contributing drainage area is diverted around the filter until stabilization is completed.

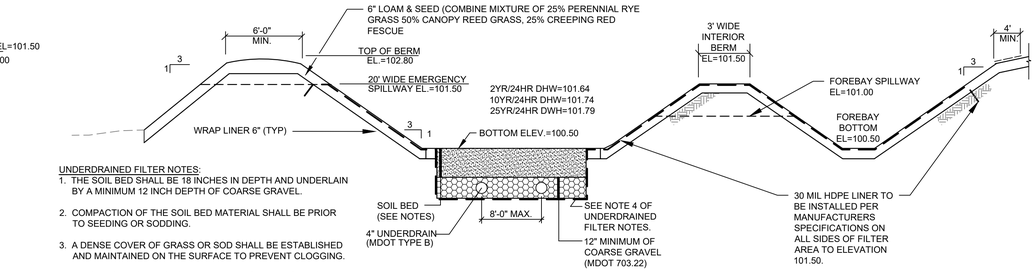
Compaction of Soil Filter: Filter soil media and underdrain bedding material must be compacted to between 90% and 92% standard proctor. The bed should be installed in at least 2 lifts of 9 inches to prevent pockets of loose media.

Construction Oversight: Inspection by a professional engineer will occur at a minimum:

- After the preliminary construction of the filter grades and once the underdrain pipes are installed but not backfilled,
- After the drainage layer is constructed and prior to the installation of the filter media,
- After the filter media has been installed and seeded. Bio-retention cells must be stabilized per the provided planting scheme and density for the canopy coverage of 30 and 50%.
- After one year to inspect health of the vegetation and make corrections, and
- All the material used for the construction of the filter basin must be confirmed as suitable by the design engineer. Testing must be done by a certified laboratory to show that they are passing DEP specifications.

Testing and Submittals: The contractor shall identify the location of the source of each component of the filter media. All results of field and laboratory testing shall be submitted to the project engineer for confirmation. The contractor shall:

- Select samples for sampling of each type of material to be blended for the mixed filter media and samples of the underdrain bedding material. Samples must be a composite of three different locations (grabs) from the stockpile or pit face. Sample size required will be determined by the testing laboratory.
- Perform a sieve analysis conforming to STM C136 (Standard Test Method for Sieve Analysis of fine and Course Aggregates 1996A) on each type of the sample material. The resulting soil filter media mixture must have 8% to 12% by weight passing the #200 sieve, a clay content of less than 2% (determined hydrometer grain size analysis) and have 10% dry weight of organic matter.
- Perform a permeability test on the soil filter media mixture conforming to ASTM D2434 with the mixture compacted to 90-92% of maximum dry density based on ASTM D698.

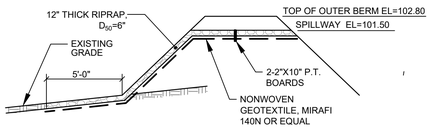


UNDERDRAINED FILTER NOTES:

1. THE SOIL BED SHALL BE 18 INCHES IN DEPTH AND UNDERLAIN BY A MINIMUM 12 INCH DEPTH OF COARSE GRAVEL.
2. COMPACTION OF THE SOIL BED MATERIAL SHALL BE PRIOR TO SEEDING OR SODDING.
3. A DENSE COVER OF GRASS OR SOD SHALL BE ESTABLISHED AND MAINTAINED ON THE SURFACE TO PREVENT CLOGGING.
4. PLACE NON WOVEN GEOTEXTILE FABRIC (MIRIFI S600 OR APPROVED EQUAL) ON ALL SIDES AND BOTTOM OF SOIL & GRAVEL FILTER AREA.
5. SOIL FILTER BED SHALL MEET THE SPECIFICATIONS SHOWN IN SOIL FILTER MEDIA TABLE.

FILTER BASIN

NOT TO SCALE

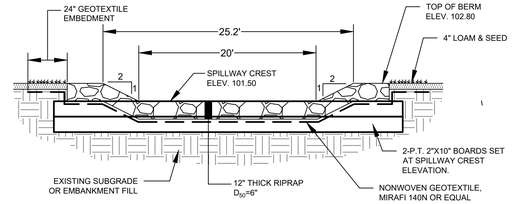


EMBANKMENT CONSTRUCTION

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EMERGENCY SPILLWAY SECTION - FILTER BASIN

NOT TO SCALE



EMERGENCY SPILLWAY CROSS-SECTION

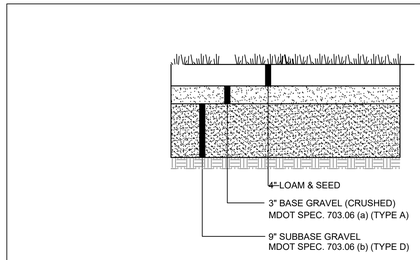
NOT TO SCALE

SOIL FILTER MEDIA TABLE

FILTER MEDIA	MIXTURE BY VOLUME	SPECIFICATION
SAND	50%-55%	MEDOT SPEC. 703.01 FINE AGGREGATE FOR CONCRETE
TOPSOIL	20%-30%	LOAMY SAND TOPSOIL WITH MINIMAL CLAY CONTENT AND BETWEEN 15-25% FINES PASSING THE #200 SIEVE.
MULCH	20%-30%	MODERATELY FINE, SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 5% PASSING THE #200 SIEVE

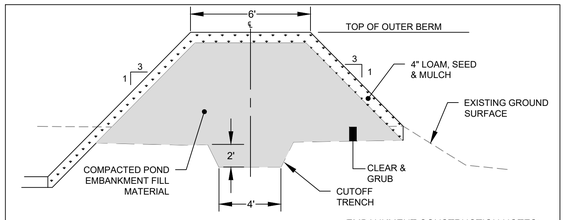
GRASSED UNDERDRAINED SOIL FILTER BASIN DETAILS

NOT TO SCALE



STABILIZED GRASS STORMWATER AREA & POND ACCESS CROSS-SECTION

NOT TO SCALE



EMBANKMENT FILL MATERIAL:

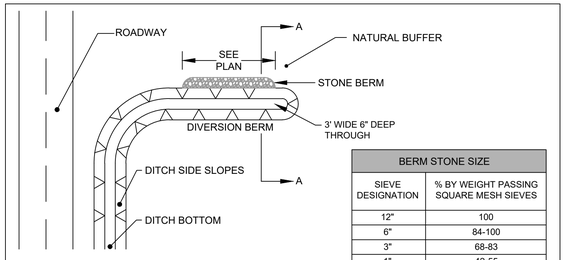
FILL MUST BE FREE OF FROZEN SOIL, ROCKS OVER SIX INCHES, AND SOD, BRUSH, STUMPS, TREE ROOTS, WOOD, OR OTHER PERISHABLE MATERIALS. EMBANKMENT FILLS LESS THAN 10 FEET IN FILL HEIGHT MUST BE COMPACTED USING COMPACTION METHODS THAT WOULD GUARANTEE A FILL DENSITY OF 90% OF THE MAXIMUM DENSITY AS DETERMINED BY STANDARD PROCTOR (ASTM-698) ALL EMBANKMENT FILLS MORE THAN 10 FEET IN FILL HEIGHT MUST BE COMPACTED TO 90% OF THE MAXIMUM DENSITY AND MUST HAVE THEIR DENSITY VERIFIED BY FIELD DENSITY TESTING.

EMBANKMENT CONSTRUCTION NOTES:

1. CONTRACTOR SHALL REMOVE ALL TOPSOIL AND ORGANIC MATERIAL FROM EMBANKMENT AND POND CONSTRUCTION AREA.
2. SCARIFY SUBGRADE TO ESTABLISH INTERFACE FOR ALL FILLS.
3. COMPACT IN 12" LIFTS TO 92% OF MAXIMUM DRY DENSITY.
4. INSTALL RIPRAP AND EROSION CONTROL MESH WHERE SPECIFIED.
5. LOAM, SEED & STABILIZE IN ACCORDANCE WITH SEDIMENTATION AND EROSION CONTROL PLAN & NOTES.

POND EMBANKMENT DETAIL

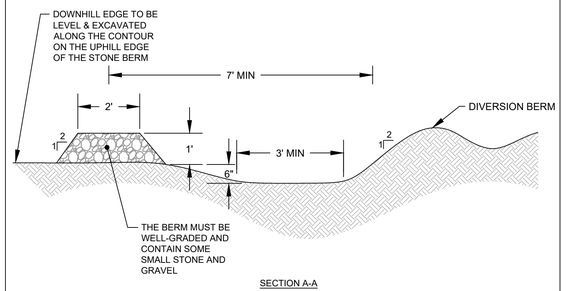
NOT TO SCALE



BERM STONE SIZE

SIEVE DESIGNATION	% BY WEIGHT PASSING SQUARE MESH SIEVES
12"	100
6"	84-100
3"	68-83
1"	42-55
#4	8-12

PLAN VIEW



SECTION A-A

CONSTRUCTION & POST-CONSTRUCTION PHASE NOTES:

Buffers - General

General forest use means that the land must be maintained with a forest cover and undisturbed soil, duff layer ground cover vegetation, and understory vegetation. Timber may be harvested on a selective basis provided that no more than 40% of the volume is harvested within any 10 year period.

Stone Bermed Level Lip Spreader

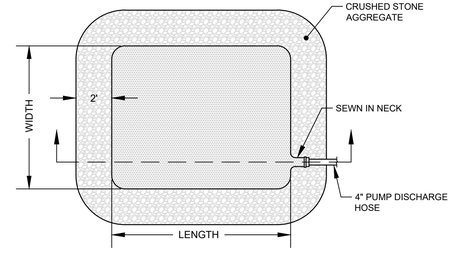
Inspections by a professional engineer shall consist of weekly visits to the site to inspect each level spreaders construction, stone berm material and placement, settling basin from initial ground disturbance to final stabilization of the level spreader.

Road Ditch Turnouts

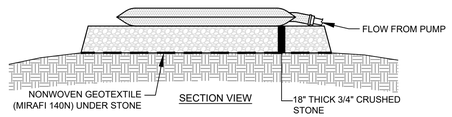
Inspections by a professional engineer shall consist of weekly visits to the site to inspect each turnout construction, turnout's stone berm material and placement, from initial ground disturbance to final stabilization of the level spreader.

TYPICAL DITCH TURNOUT BUFFER

NOT TO SCALE



PLAN VIEW



NOTES:

1. DIRTBAG BY ACF ENVIRONMENTAL
2. SEAMS MUST BE HIGH STRENGTH DOUBLE STITCHED "J" SEAMS.
3. CONSTRUCTION DEWATERING OF TURBID WATER SHALL BE PUMPED THROUGH A DIRTBAG AND RELEASED THROUGH A VEGETATED BUFFER AT LEAST 50' UPSTREAM OF WETLAND AREAS.
4. THE LOCATION OF THE DIRTBAG SHALL BE DETERMINED BY THE CONTRACTOR, BUT SHALL IT SHALL NOT BE SITED IN CRITICAL AREAS, SUCH AS WETLANDS.

DIRTBAG DETAIL

NOT TO SCALE

DATE: 3/16/2022
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

565 CONGRESS STREET
SUITE 301
PORTLAND, ME 04101

41 CAMPUS DRIVE
SUITE 305
NEW GLOUCESTER, ME 04260

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TERRADYN CONSULTANTS, LLC
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE:
DETAILS & NOTES

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	3/16/2022
SCALE:	AS NOTED
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125-D

SHEET C-3.2

TERRADYN
CONSULTANTS, LLC

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 310
Portland, ME 04101

June 3, 2022 2125

Ms Kristen Muszynski, Town Planner
Town of Gray Planning Department
Henry Pennell Municipal Complex
24 Main Street
Gray, ME 04039

Additional Information – Revised Building #7
Final Site Plan Application
Gray Self Storage
119 Portland Road, Gray, ME

Kristen,

Terradyn Consultants LLC, on behalf of Beth Cureton, submits this revision to Building #7 to be included in our application for Site Plan Approval for the Gray Self Storage project.

I'd previously described Building #7 as a climate-controlled building where access to units will be from an internal hallway. The building was to be served by three parking spaces. That building will now feature 5 (14'x40') externally accessed units. The units will each have a large garage door that will allow storage of larger boats and recreational vehicles. We've attached an elevation drawing of Building #7 for your use.

The revision also removes the need for any parking spaces. Building #7 will now operate in the same fashion as the other buildings. Its worth noting that the revision does not impact the stormwater design. No new impervious area is proposed.

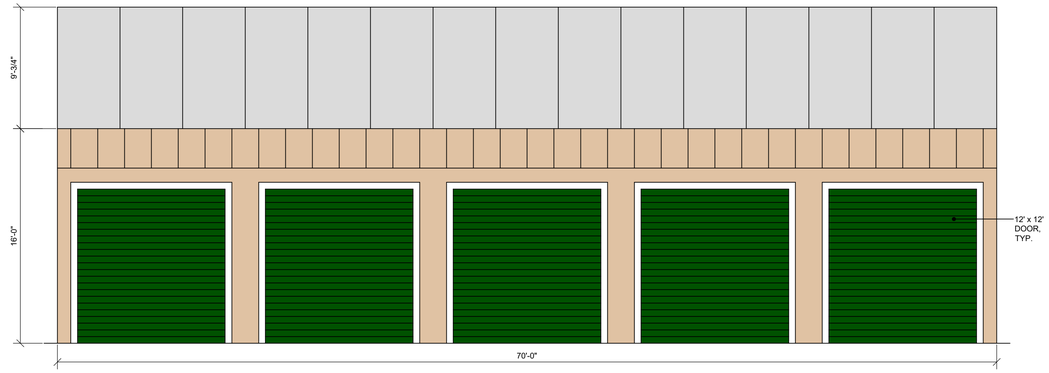
The following items are attached:

- Attachment 1 – Elevation of Building #7
- Attachment 2 – Revised Construction Plans

Prepared by,
Terradyn Consultants, LLC

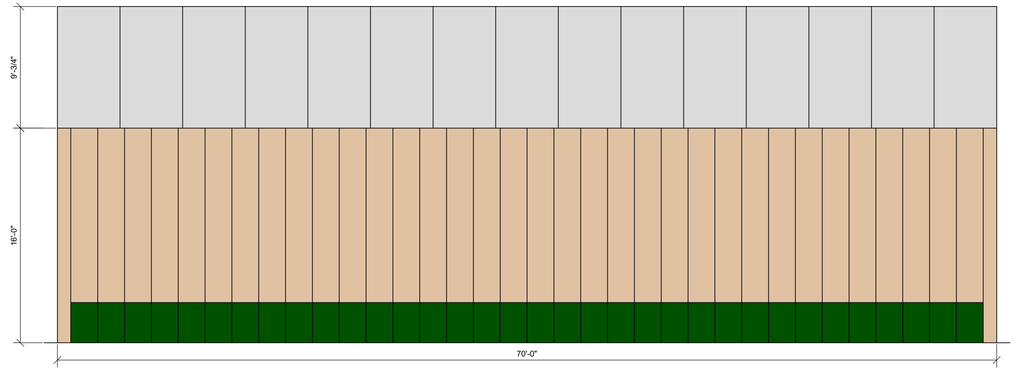
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Jeffrey M. Amos, P.E.



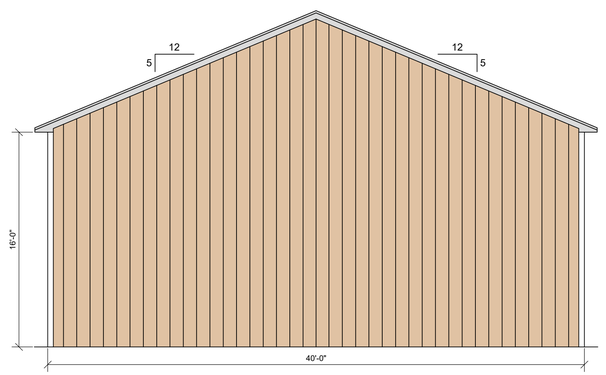
BUILDING 7 SOUTH ELEVATION

SCALE: 3/16" = 1'-0"



BUILDING 7 NORTH ELEVATION

SCALE: 3/16" = 1'-0"



BUILDING 7 EAST AND WEST ELEVATION

SCALE: 3/16" = 1'-0"

STATE OF MAINE
JEFFREY D. AMOS
10167
LICENSED
PROFESSIONAL ENGINEER

TERRADYN CONSULTANTS, LLC
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

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DATE:	6/2/2022
P.E.:	10167

NO.	DATE	REVISIONS	APP'D BY
4	6/2/2022	MODIFIED BUILDING NO. 7	
3	5/31/2022	REVISED PER FINAL 3RD PARTY REVEIW	
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE:
BUILDING 7 ELEVATIONS

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	3/16" = 1'-0"
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125elev.dwg

SHEET
A-1.3

GRAY SELF STORAGE

PORTLAND ROAD - GRAY, MAINE

PREPARED BY:

CIVIL ENGINEER:
TERRADYN CONSULTANTS, LLC
41 CAMPUS DR. SUITE 301
NEW GLOUCESTER, MAINE 04260
(207)926-5111

SURVEYOR:
WAYNE T. WOOD & COMPANY
30 WOOD DRIVE
GRAY, MAINE 04039
(207) 657-3330

WETLANDS SURVEY:
MARK CENCI GEOLOGIC INC.
NORTH YARMOUTH, MAINE 04097
(207) 329-3524

APPLICANT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, MAINE 04097

OWNERS:
EQUITY TRUST COMPANY CUSTODIAN
FBO BETH CURETON

PROJECT PARCEL SITE
TOWN OF GRAY TAX ASSESSOR'S MAP & LOT NUMBERS

MAP	LOT
59	31-10
	31-14

APPROVED: TOWN OF GRAY
PLANNING BOARD

_____ DATE

_____

_____

_____

_____

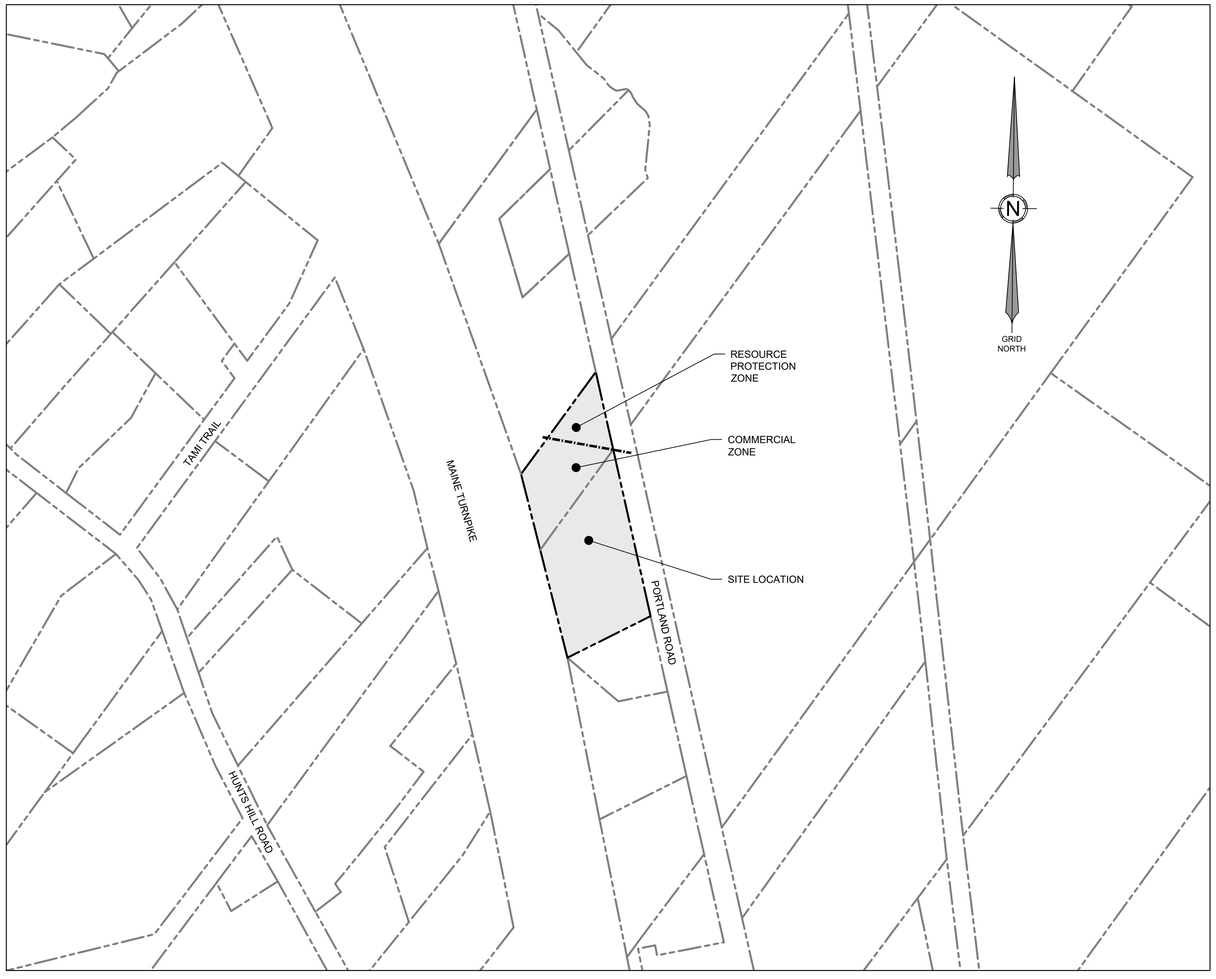
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SHEET INDEX

C-0.0	COVER SHEET & LOCATION MAP
S-1.0	BOUNDARY SURVEY
C-1.0	OVERALL PLAN
C-1.1	SITE LAYOUT & LANDSCAPING PLAN
C-2.0	GRADING & UTILITY PLAN
C-3.0	EROSION CONTROL NOTES & DETAILS
C-3.1	SITE DETAILS
C-3.2	DETAILS & NOTES



LOCATION MAP
1" = 200'

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- PROPOSED SETBACK LINE
- EXISTING SETBACK LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- ROAD CENTERLINE
- 124 EXISTING MINOR CONTOUR
- 124 EXISTING MAJOR CONTOUR
- 124 PROPOSED CONTOUR
- SD EXISTING STORMDRAIN
- SD PROPOSED STORMDRAIN
- OHE EXISTING OVERHEAD ELECTRIC & TELEPHONE
- OHE PROPOSED OVERHEAD ELECTRIC & TELEPHONE
- UGE EXISTING UNDERGROUND ELECTRIC & TELEPHONE
- UGE PROPOSED UNDERGROUND ELECTRIC & TELEPHONE
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- PROPOSED EDGE OF GRAVEL
- EXISTING TREE LINE
- PROPOSED TREE LINE
- CHAIN LINK FENCE
- PROPOSED FENCE
- EXISTING GUARDRAIL
- PROPOSED GUARDRAIL
- MB MULCH BERM
- PROPOSED TRANSFORMER
- PROPOSED LIGHT POLE
- EXISTING UTILITY POLE
- PROPOSED CATCH BASIN
- 30.20 EXISTING SPOT GRADE
- 30.20 PROPOSED SPOT GRADE
- EXISTING SIGN
- PROPOSED SIGN
- EXISTING BUILDING
- PROPOSED BUILDING
- WETLAND AREA
- PROPOSED PAVEMENT
- RIPRAP
- PROPOSED GRAVEL

STATE OF MAINE — JEFFREY D. AMOS — 10167 — LICENSED PROFESSIONAL ENGINEER

DATE: 6/2/2022
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY
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1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102

41 CAMPUS DRIVE
SUITE 301
NEW GLOUCESTER, ME 04260

OFFICE: (207) 926-5111
www.terradynconsultants.com

TERRADYN CONSULTANTS, LLC

CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE: COVER/LOCATION MAP

CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	1" = 200'
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125 C.DWG
SHEET	C-0.0

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCELS IS EQUITY TRUST COMPANY, FBO BETH CURETON BY DEED RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 38,413, PAGE 249 & BOOK 38,125 PAGE 201.

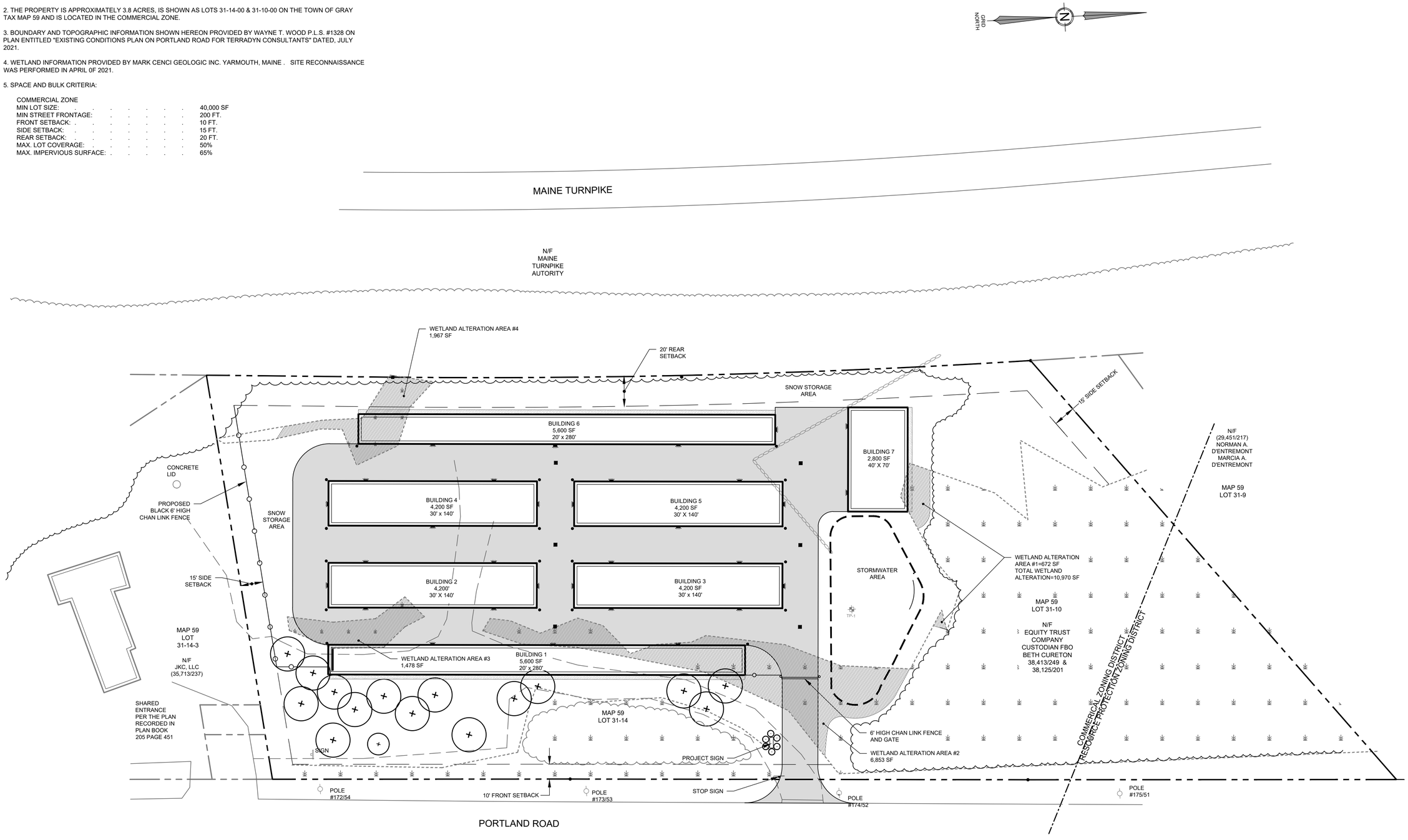
2. THE PROPERTY IS APPROXIMATELY 3.8 ACRES, IS SHOWN AS LOTS 31-14-00 & 31-10-00 ON THE TOWN OF GRAY TAX MAP 59 AND IS LOCATED IN THE COMMERCIAL ZONE.

3. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON PROVIDED BY WAYNE T. WOOD P.L.S. #1328 ON PLAN ENTITLED "EXISTING CONDITIONS PLAN ON PORTLAND ROAD FOR TERRADYN CONSULTANTS" DATED, JULY 2021.

4. WETLAND INFORMATION PROVIDED BY MARK CENCI GEOLOGIC INC. YARMOUTH, MAINE . SITE RECONNAISSANCE WAS PERFORMED IN APRIL 0F 2021.

5. SPACE AND BULK CRITERIA:

COMMERCIAL ZONE	
MIN LOT SIZE:	40,000 SF
MIN STREET FRONTAGE:	200 FT.
FRONT SETBACK:	10 FT.
SIDE SETBACK:	15 FT.
REAR SETBACK:	20 FT.
MAX. LOT COVERAGE:	50%
MAX. IMPERVIOUS SURFACE:	65%



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch =30 ft.

DATE:	6/2/2022
P.E.:	10167

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SUITE 201
PORTLAND, ME 04102

41 CAMPUS DRIVE
SUITE 301
NEW GLOUCESTER, ME 04260

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TERRADYN CONSULTANTS, LLC
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

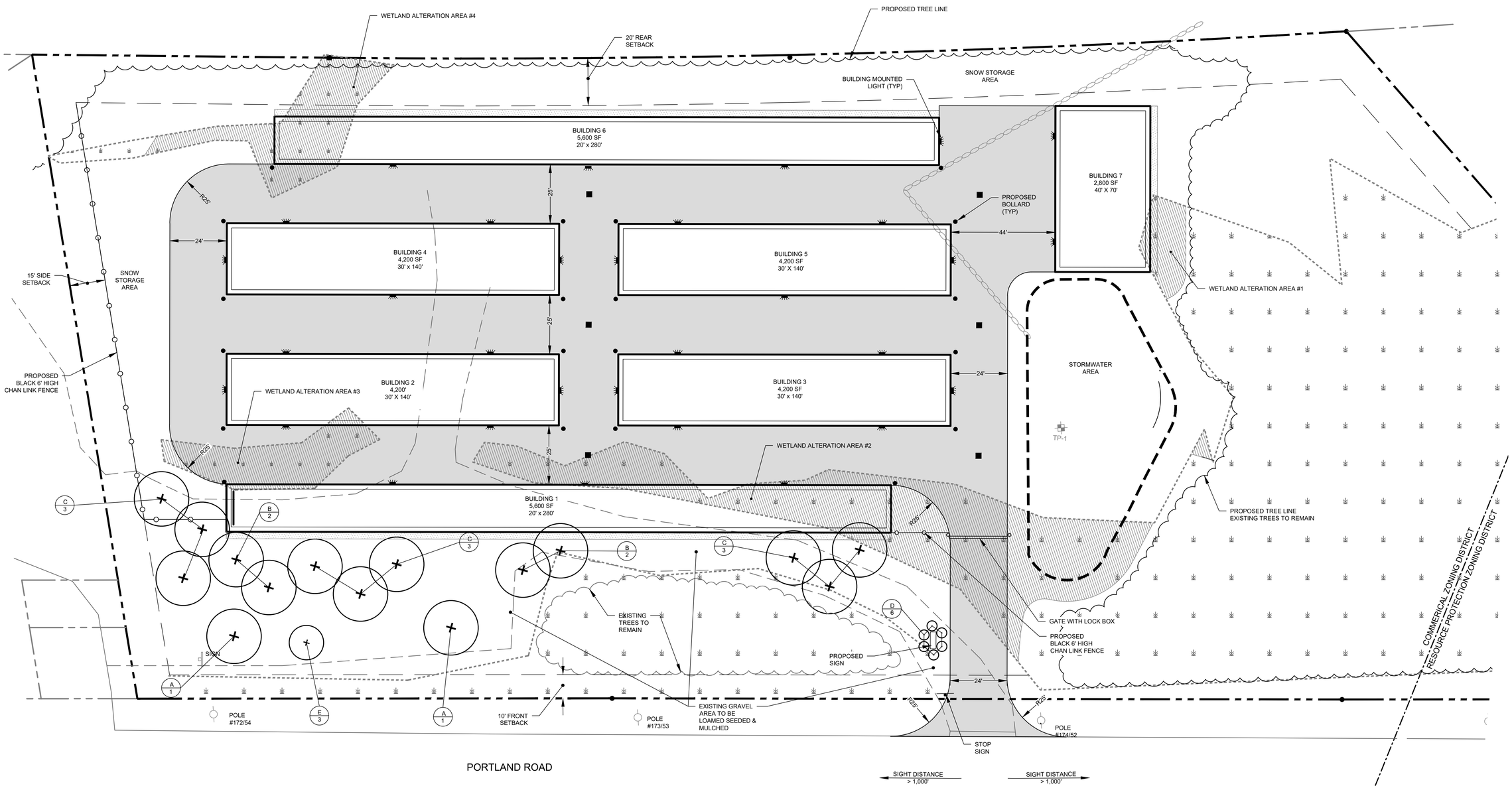
SHEET TITLE:
OVERALL PLAN

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	1" = 30'
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125S.dwg
SHEET	C-1.0

PLANT LIST:

KEY	COMMON & BOTANICAL NAME	SIZE	ROOT	QTY	NOTES
A	RED MAPLE - ACER RUBRUM	2 ½" CAL.	B & B	2	
B	WHITE SPRUCE - P. GLAUCA	5'-6' HT..	B & B	4	
C	WHITE PINE - P. STROBUS	4'-5' HT.	B & B	9	
D	N. BAYBERRY - M. PENSLVANICA	30" HT.	CONT.	6	3 CANES
E	DOGWOOD (OR SIMILAR FLOWERING TREE)	5'-6' HT..	B & B	1	



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

STATE OF MAINE
JEFFREY D. KIMBALL
10167
LICENSED PROFESSIONAL ENGINEER

DATE: 6/2/2022
P.E.: 10167

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41 CAMPUS DRIVE, SUITE 201, NEW GLOUCESTER, ME 04260
OFFICE: (207) 926-5111
www.terradynconsultants.com
565 CONGRESS STREET, SUITE 201, PORTLAND, ME 04102

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: GRAY SELF STORAGE
PORTLAND ROAD, GRAY, ME

SHEET TITLE: SITE LAYOUT & LANDSCAPING PLAN

CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	1" = 20'
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125S.dwg
SHEET	C-1.1

HOUSEKEEPING NOTES:

1. 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.

2. GROUNDWATER PROTECTION. 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.

3. FUGITIVE SEDIMENT AND DUST. 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.

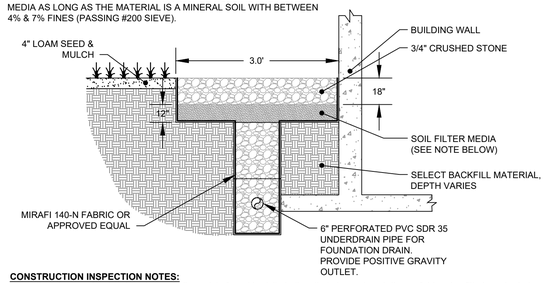
4. DEBRIS AND OTHER MATERIALS. LITTER, CONSTRUCTION DEBRIS, AND CHEMICALS EXPOSED TO STORMWATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

5. TRENCH OR FOUNDATION DE-WATERING. TRENCH DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER MUST BE REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, AND MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

6. NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES.

7. ADDITIONAL REQUIREMENTS. ADDITIONAL REQUIREMENTS MAY BE APPLIED ON A SITE-SPECIFIC BASIS.

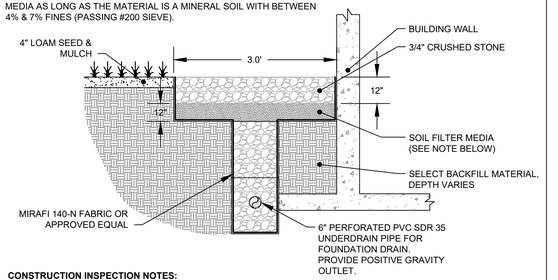
NOTE:
THE BACKFILL FOR THE FOUNDATION MAY BE USED AS THE FILTER MEDIA AS LONG AS THE MATERIAL IS A MINERAL SOIL WITH BETWEEN 4% & 7% FINES (PASSING #200 SIEVE).



CONSTRUCTION INSPECTION NOTES:
Inspections by a professional engineer shall consist of weekly visits to the site to inspect each the roof drip edge filter's underdrain construction, filter material placement, and overflow from initial ground disturbance to final stabilization of the filter.

BUILDING #7 ROOF DRIPLINE FILTER BED
NOT TO SCALE

NOTE:
THE BACKFILL FOR THE FOUNDATION MAY BE USED AS THE FILTER MEDIA AS LONG AS THE MATERIAL IS A MINERAL SOIL WITH BETWEEN 4% & 7% FINES (PASSING #200 SIEVE).



CONSTRUCTION INSPECTION NOTES:
Inspections by a professional engineer shall consist of weekly visits to the site to inspect each the roof drip edge filter's underdrain construction, filter material placement, and overflow from initial ground disturbance to final stabilization of the filter.

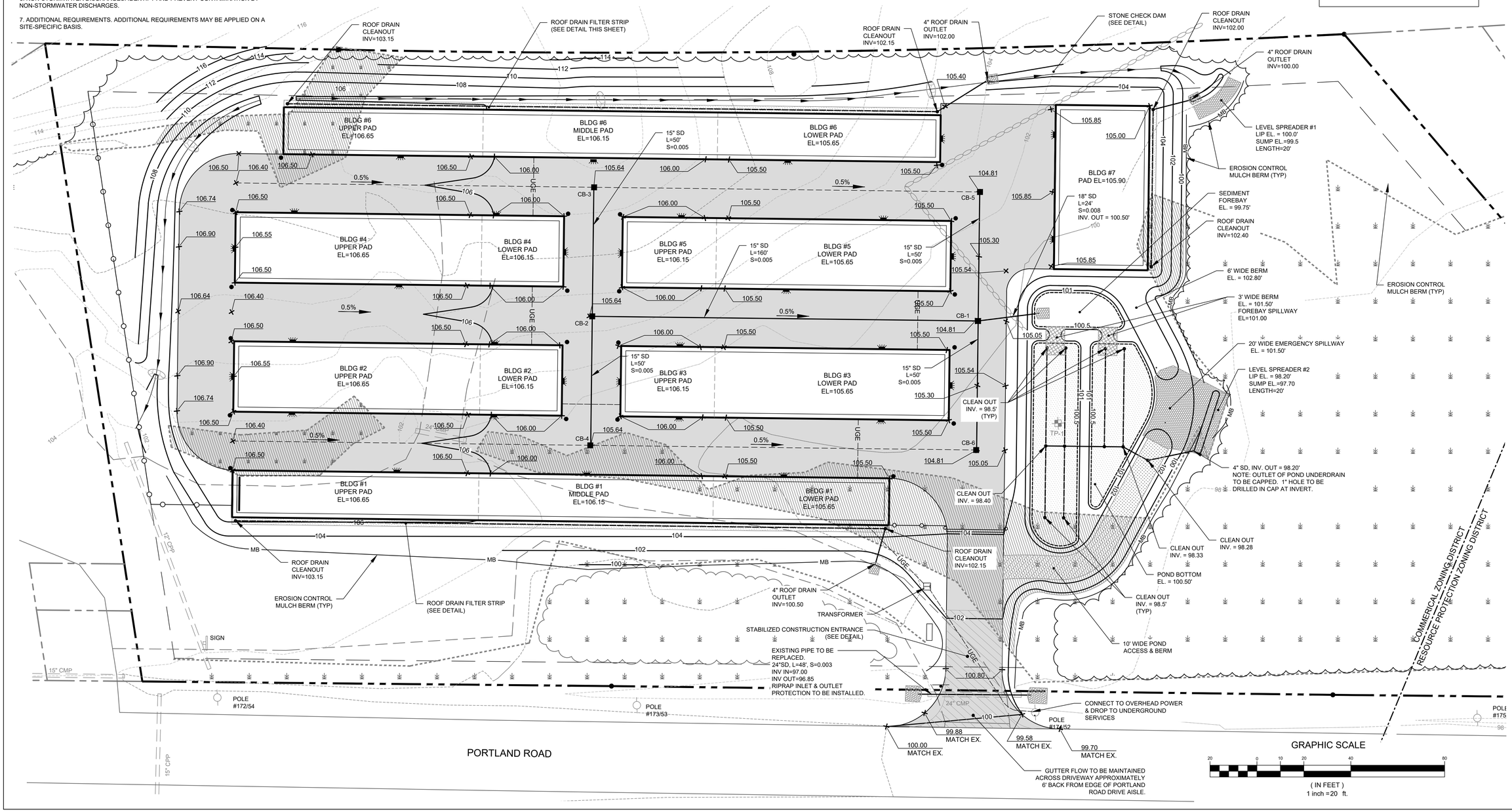
BUILDINGS #1&6 ROOF DRIPLINE FILTER BED
NOT TO SCALE

FOUNDATION DRAIN NOTE:

1. FOUNDATION DRAINS SHALL NOT DRAIN TO THE STORMWATER POND. OUTLET OF DRAIN TO FLOW TO A NON-WETLAND AREA AND BE ARMORED WITH A PROPERLY SIZED RIPRAP OUTLET.

CATCH BASIN TABLE:

NAME	RIM	INV. IN	INV. OUT
CB-1	104.71	100.70(3)	100.70
CB-2	105.54	101.50(2)	101.50
CB-3	105.54	----------	101.75
CB-4	105.54	----------	101.75
CB-5	104.71	----------	100.95
CB-6	104.71	----------	100.95



GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GRID NORTH

STATE OF MAINE — JEFFREY D. MILLS — 10167 — LICENSED PROFESSIONAL ENGINEER

DATE: 6/2/2022
P.E.: 10167

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41 CAMPUS DRIVE
SUITE 201
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565 CONGRESS STREET
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PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE:
GRADING & UTILITY PLAN

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	1" = 20'
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125G.dwg
SHEET	C-2.0

EROSION AND SEDIMENT CONTROL PLAN

PRE-CONSTRUCTION PHASE
A PERSON WHO CONDUCTS, OR CAUSES TO BE CONDUCTED, AN ACTIVITY THAT INVOLVES FILLING, DISPLACING OR EXPOSING SOIL OR OTHER EARTHEN MATERIALS SHALL TAKE MEASURES TO PREVENT UNREASONABLE EROSION OF SOIL OR SEDIMENT BEYOND THE PROJECT SITE OR INTO A PROTECTED NATURAL RESOURCE AS DEFINED IN 38 MRSA § 480-B. EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE THE ACTIVITY BEGINS. MEASURES MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL THE SITE IS PERMANENTLY STABILIZED. ADEQUATE AND TIMELY TEMPORARY AND PERMANENT STABILIZATION MEASURES MUST BE TAKEN. THE SITE MUST BE MAINTAINED TO PREVENT UNREASONABLE EROSION AND SEDIMENTATION. MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE.

BMP CONSTRUCTION PHASE
A. SEDIMENT BARRIERS. PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE EDGE OF ANY DOWNGRADIENT DISTURBED AREA AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE PROPOSED DISTURBED AREA. MAINTAIN THE SEDIMENT BARRIERS UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.

B. CONSTRUCTION ENTRANCE: PRIOR TO ANY CLEARING OR GRUBBING, A CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT THE INTERSECTION WITH THE PROPOSED ACCESS DRIVE AND THE EXISTING ROADWAY TO AVOID TRACKING OF MUD, DUST AND DEBRIS FROM THE SITE.

C. RIPRAP: SINCE RIPRAP IS USED WHERE EROSION POTENTIAL IS HIGH, CONSTRUCTION MUST BE SEQUENCED SO THAT THE RIPRAP IS PUT IN PLACE WITH THE MINIMUM DELAY. DISTURBANCE OF AREAS WHERE RIPRAP IS TO BE PLACED SHOULD BE UNDERTAKEN ONLY WHEN FINAL PREPARATION AND PLACEMENT OF THE RIPRAP CAN FOLLOW IMMEDIATELY BEHIND THE INITIAL DISTURBANCE. WHERE RIPRAP IS USED FOR OUTLET PROTECTION, THE RIPRAP SHOULD BE PLACED BEFORE OR IN CONJUNCTION WITH THE CONSTRUCTION OF THE PIPE OR CHANNEL SO THAT IT IS IN PLACE WHEN THE PIPE OR CHANNEL BEGINS TO OPERATE. MAINTAIN TEMPORARY RIPRAP, SUCH AS TEMPORARY CHECK DAMS UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.

D. TEMPORARY STABILIZATION. STABILIZE WITH TEMPORARY SEEDING, MULCH, OR OTHER NON-ERODABLE COVER ANY EXPOSED SOILS THAT WILL REMAIN UNWORKED FOR MORE THAN 14 DAYS EXCEPT, STABILIZE AREAS WITHIN 100 FEET OF A WETLAND OR WATERBODY WITHIN 7 DAYS OR PRIOR TO A PREDICTED STORM EVENT, WHICHEVER COMES FIRST. IF HAY OR STRAW MULCH IS USED, THE APPLICATION RATE MUST BE 2 BALES (70-90 POUNDS) PER 1000 SF OR 1.5 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 75 TO 90% OF THE GROUND SURFACE. HAY MULCH MUST BE KEPT MOIST OR ANCHORED TO PREVENT WIND BLOWING. AN EROSION CONTROL BLANKET OR MAT SHALL BE USED AT THE BASE OF GRASSED WATERWAYS, STEEP SLOPES (15% OR GREATER) AND ON ANY DISTURBED SOIL WITHIN 100 FEET OF LAKES, STREAMS AND WETLANDS. GRADING SHALL BE PLANNED SO AS TO MINIMIZE THE LENGTH OF TIME BETWEEN INITIAL SOIL EXPOSURE AND FINAL GRADING. ON LARGE PROJECTS THIS SHOULD BE ACCOMPLISHED BY PHASING THE OPERATION AND COMPLETING THE FIRST PHASE UP TO FINAL GRADING AND SEEDING BEFORE STARTING THE SECOND PHASE, AND SO ON.

E. VEGETATED WATERWAY. UPON FINAL GRADING, THE DISTURBED AREAS SHALL BE IMMEDIATELY SEEDED TO PERMANENT VEGETATION AND MULCHED AND WILL NOT BE USED AS OUTLETS UNTIL A DENSE, VIGOROUS VEGETATIVE COVER HAS BEEN OBTAINED. ONCE SOIL IS EXPOSED FOR WATERWAY CONSTRUCTION, IT SHOULD BE IMMEDIATELY SHAPED, GRADED AND STABILIZED. VEGETATED WATERWAYS NEED TO BE STABILIZED EARLY DURING THE GROWING SEASON (PRIOR TO SEPTEMBER 15). IF FINAL SEEDING OF WATERWAYS IS DELAYED PAST SEPTEMBER 15, EMERGENCY PROVISIONS SUCH AS SOD OR RIPRAP MAY BE REQUIRED TO STABILIZE THE CHANNEL. WATERWAYS SHOULD BE FULLY STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

PERMANENT STABILIZATION DEFINED
A. SEEDED AREAS. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS AN 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

B. SODDED 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 APPROVED APPLICATION RATES AND LIMITATIONS.

D. RIPRAP. FOR 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. STONE MUST BE SIZED APPROPRIATELY. IT IS RECOMMENDED THAT ANGULAR STONE BE USED.

E. AGRICULTURAL USE. FOR CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL PURPOSES (E.G., PIPELINES ACROSS CROP LAND), PERMANENT STABILIZATION MAY BE ACCOMPLISHED BY RETURNING THE DISTURBED LAND TO AGRICULTURAL USE.

F. PAVED AREAS. FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED.

G. DITCHES, CHANNELS, AND SWALES. FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH WELL-GRADED RIPRAP, OR WITH ANOTHER NON-EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE LINING, UNDERCUTTING OF THE BANKS, OR DOWN-CUTTING OF THE CHANNEL.

GENERAL CONSTRUCTION PHASE
THE FOLLOWING EROSION CONTROL MEASURES SHALL BE FOLLOWED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION OF THIS PROJECT:

A. ALL TOPSOIL SHALL BE COLLECTED, STOCKPILED, SEEDED WITH RYE AT 3 POUNDS/1,000 SF AND MULCHED, AND REUSED AS REQUIRED. SILT FENCING SHALL BE PLACED DOWN GRADIENT FROM THE STOCKPILED LOAM. STOCKPILE TO BE LOCATED BY DESIGNATION OF THE OWNER AND INSPECTING ENGINEER.

B. THE INSPECTING ENGINEER AT HIS/HER DISCRETION, MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES AND/OR SUPPLEMENTAL VEGETATIVE PROVISIONS TO MAINTAIN STABILITY OF EARTHWORKS AND FINISH GRADED AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY SUPPLEMENTAL MEASURES AS DIRECTED BY THE INSPECTING ENGINEER. FAILURE TO COMPLY WITH THE ENGINEER'S DIRECTIONS WILL RESULT IN DISCONTINUATION OF CONSTRUCTION ACTIVITIES.

C. EROSION CONTROL MESH SHALL BE APPLIED IN ACCORDANCE WITH THE PLANS OVER ALL FINISH SEEDED AREAS AS SPECIFIED ON THE DESIGN PLANS.

D. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN UNTIL THEY ARE ADEQUATELY STABILIZED.

E. ALL EROSION, AND SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

F. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIALS.

G. AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL.

H. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC., SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.

I. ALL FILLS SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS.

J. EXCEPT FOR APPROVED LANDFILLS OR NON-STRUCTURAL FILLS, FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS.

K. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL FILLS.

L. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION.

M. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED APPROPRIATELY.

N. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

O. REMOVE ANY TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE.

PERMANENT VEGETATION
PERMANENT VEGETATIVE COVER SHOULD BE ESTABLISHED ON DISTURBED AREAS WHERE PERMANENT, LONG LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL, TO REDUCE DAMAGES FROM SEDIMENT AND RUNOFF, AND TO ENHANCE THE ENVIRONMENT.

SEEDBED PREPARATION
A. GRADE AS FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE.

B. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS SUCH AS THOSE OFFERED BY THE UNIVERSITY OF MAINE SOIL TESTING LABORATORY. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL COOPERATIVE EXTENSION SERVICE OFFICE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED 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 SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.D. REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.

E. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED; THE AREA MUST BE TILLED AND FIRMED AS ABOVE.

F. PERMANENT SEEDING SHOULD 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 SHOULD BE HARD SEED (UNSCARIFIED). IF SEEDING CANNOT BE DONE WITHIN THE SEEDING DATES, MULCH ACCORDING TO THE TEMPORARY MULCHING BMP AND OVERWINTER STABILIZATION AND CONSTRUCTION TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

G. FOLLOWING SEED BED PREPARTATION, SWALE AREAS, FILL AREAS AND BACK SLOPES SHALL BE SEEDED AT A RATE OF 3 LBS./1,000 S.F. WITH A MIXTURE OF 35% CREEPING RED FESCUE, 6% RED TOP, 24% KENTUCKY BLUEGRASS, 10% PERENNIAL RYEGRASS, 20% ANNUAL RYEGRASS AND 5% WHITE DUTCH CLOVER.

I. AREAS WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING.

J. AREAS WHICH CANNOT BE SEEDED WITHIN THE GROWING SEASON SHALL BE MULCHED FOR OVER-WINTER PROTECTION AND THE AREA SHOULD BE SEEDED AT THE BEGINNING OF THE GROWING SEASON.

WINTER CONSTRUCTION PHASE
IF AN AREA IS NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES BY NOVEMBER 15, THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES.

A. PERMANENT STABILIZATION CONSISTS OF AT LEAST 90% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.

B. DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH.

C. APPLY HAY MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST BE ANCHORED.

D. USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR ALL SLOPES GREATER THAN 8 % OR OTHER AREAS EXPOSED TO DIRECT WIND.

E. INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGEWAYS (BOTTOM AND SIDES) WITH A SLOPE GREATER THAN 3 %.

F. SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.

G. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SO THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.

H. AN AREA WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.

I. TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.

J. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED THAT SAME DAY.

K. IF SNOWFALL IS GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.

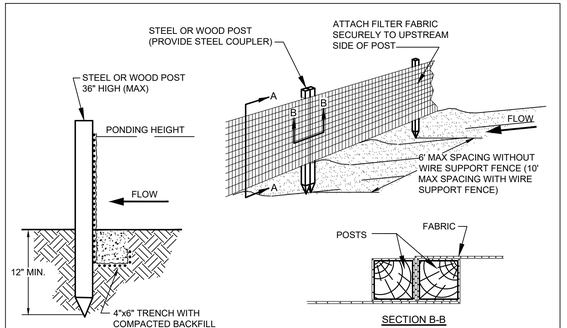
L. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.

M. ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.

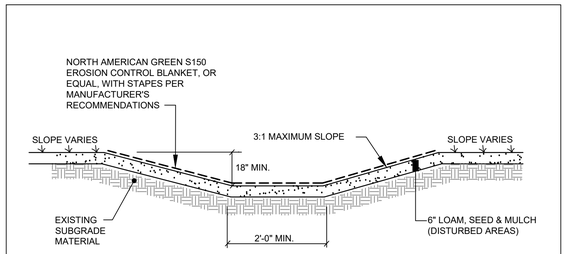
MAINTENANCE AND INSPECTION PHASE
A. MINIMUM EROSION CONTROL MEASURES WILL NEED TO BE IMPLEMENTED AND THE APPLICANT WILL BE RESPONSIBLE TO MAINTAIN ALL COMPONENTS OF THE EROSION CONTROL PLAN UNTIL THE SITE IS FULLY STABILIZED. HOWEVER, BASED ON SITE AND WEATHER CONDITIONS DURING CONSTRUCTION, ADDITIONAL 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

B. A LOG (REPORT) MUST BE KEPT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME(S) AND QUALIFICATIONS OF THE PERSONNEL MAKING THE INSPECTION, THE DATE(S) OF THE INSPECTION, AND MAJOR OBSERVATIONS RELATING TO OPERATION OF EROSION AND SEDIMENTATION CONTROLS AND POLLUTION PREVENTION MEASURES. MAJOR OBSERVATIONS MUST INCLUDE: BMPS THAT NEED TO BE MAINTAINED; LOCATION(S) OF BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION; AND LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED THAT DID NOT EXIST AT THE TIME OF INSPECTION. FOLLOW-UP TO CORRECT DEFICIENCIES OR ENHANCE CONTROLS MUST ALSO BE INDICATED IN THE LOG AND DATED, INCLUDING WHAT ACTION WAS TAKEN AND WHEN.

DEWATERING
A DEWATERING PLAN IS NEEDED TO ADDRESS EXCAVATION DE-WATERING 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.

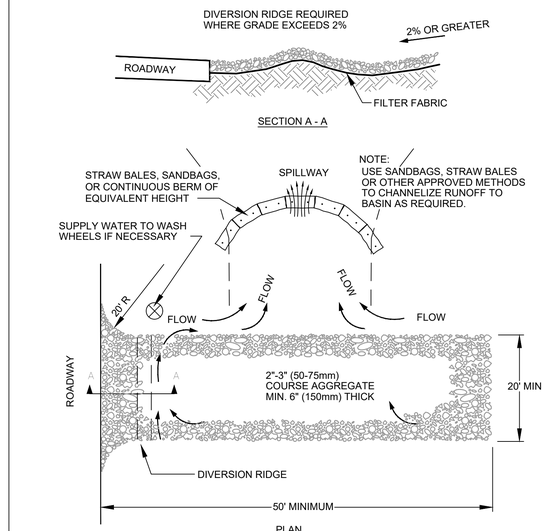


SILT FENCE
NOT TO SCALE



NOTE: REFER TO GRADING PLAN FOR DITCH WIDTH AND SIDE SLOPES

GRASSED SWALE
NOT TO SCALE

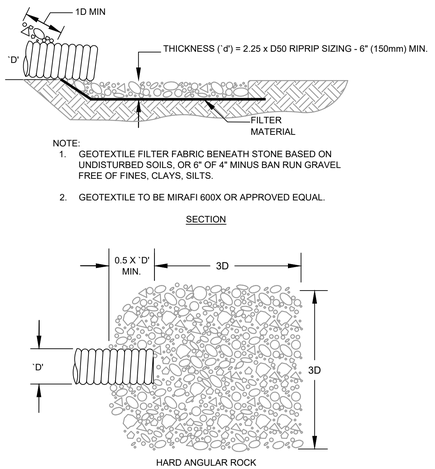


NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.

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

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

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



NOTE:
1. GEOTEXTILE FILTER FABRIC BENEATH STONE BASED ON UNDISTURBED SOILS, OR 6" OF 4" MINUS BAN RUN GRAVEL FREE OF FINES, CLAYS, SILTS.

2. GEOTEXTILE TO BE MIRAFI 600X OR APPROVED EQUAL.

SECTION

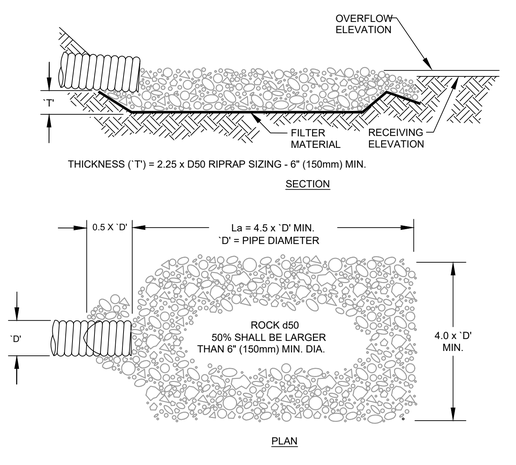
PLAN

PIPE INLET PROTECTION SIZING TABLE

PIPE SIZE (IN)	RIRAP SIZING (D50)	LENGTH (FT)	WIDTH (FT)
6	3	2.0	1.5
12	5	3.5	3.0
15	6	4.5	3.75
18	8	5.25	4.5
24	10	7.0	6.0
30	12	8.75	7.5
36	14	10.5	9.0

NOTES:
1. IN DEFINED CHANNELS, APRON SHALL EXTEND FULL WIDTH OF BOTTOM AND ONE FOOT ABOVE MAX. HEADWATER OR UP TO BANK FULL, WHICHEVER IS LESS.

PIPE INLET PROTECTION



PIPE OUTLET PROTECTION SIZING TABLE

PIPE SIZE (IN)	RIP RAP SIZING (D50)	LENGTH (FT)	WIDTH (FT)
6	3	2.5	2.0
12	5	5.0	4.0
15	6	6.25	5.0
18	8	7.5	6.0
24	10	10.0	8.0
30	12	13.0	10.0
36	14	15.0	12.0

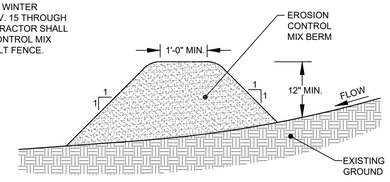
NOTES:
1. `La' = LENGTH OF APRON. DISTANCE `La' SHALL BE OF SUFFICIENT LENGTH TO DISSIPATE ENERGY.

2. APRON SHALL BE SET AT A ZERO GRADE AND ALIGNED STRAIGHT.

3. FILTER MATERIAL SHALL BE FILTER FABRIC (MIRAFI 600X OR APPROVED EQUAL) OR 6" (150mm) THICK MINIMUM GRADED GRAVEL LAYER.

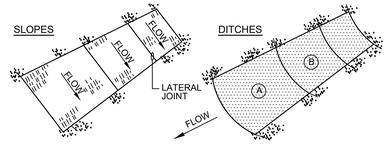
PIPE OUTLET PROTECTION
NOT TO SCALE

NOTE:
DURING PERIODS OF WINTER CONSTRUCTION (NOV. 15 THROUGH APRIL 15), THE CONTRACTOR SHALL INSTALL EROSION CONTROL MIX BERMS IN LIEU OF SILT FENCE.



EROSION CONTROL MIX:
EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES & 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:
- THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80% - 100% DRY WEIGHT BASIS
- PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70%, MAXIMUM OF 85% PASSING A 0.75" SCREEN
- THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED
- LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
- SOLUBLE SALTS CONTENT SHALL BE < 4.0 mmhos/cm.
- ph SHALL FALL BETWEEN 5.0 - 8.0.

EROSION CONTROL MIX BERM
NOT TO SCALE



NOTES:
1. BURY THE TOP END OF THE MESH MATERIAL IN A 6" TRENCH AND BACKFILL AND TAMP TRENCHING SECURE END WITH STAPLES AT 6" SPACING, 4" DOWN FROM EXPOSED END.

2. FLOW DIRECTION JOINTS TO HAVE UPPER END OF LOWER STRIP BURIED WITH UPPER LAYERS OVERLAPPED 4" AND STAPLED. OVERLAP B OVER A.

3. LATERAL JOINTS TO HAVE 4" OVERLAP OF STRIPS. STAPLE 18" ON CENTER.

4. STAPLE OUTSIDE LATERAL EDGE 2' ON CENTER.

5. WIRE STAPLES TO BE MIN. OF #11 WIRE, 6" LONG & 1-1/2" WIDE.

6. USE NORTH AMERICAN GREEN DS 150 (OR APPROVED EQUAL) ON SLOPES BETWEEN 4:1-2:1. USE NORTH AMERICAN GREEN VMAX SC250 PERMANENT TURF REINFORCEMENT MAT (OR APPROVED EQUAL) ON SLOPES 2:1 AND STEEPER..

EROSION CONTROL BLANKET
NOT TO SCALE

STATE OF MAINE
JEFFREY D. LIMOS
10167
LICENSED
PROFESSIONAL ENGINEER

DATE: 6/2/2022
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY
4	6/2/2022	MODIFIED BUILDING NO. 7	
3	5/31/2022	REVISED PER FINAL 3RD PARTY REVEIW	
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

PERMIT DRAWING
NOT FOR CONSTRUCTION

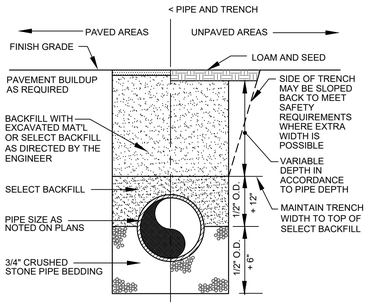
PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE:
EROSION CONTROL NOTES & DETAILS

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

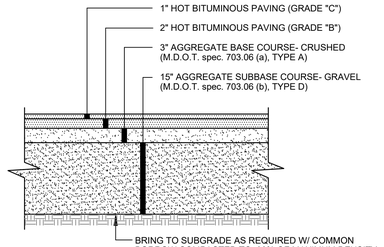
DATE:	11/10/2021
SCALE:	AS NOTED
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125D.dwg
SHEET	C-3.0

TERRADYN CONSULTANTS, LLC
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING
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PORTLAND, ME 04102



TYPICAL TRENCH SECTION

NOT TO SCALE

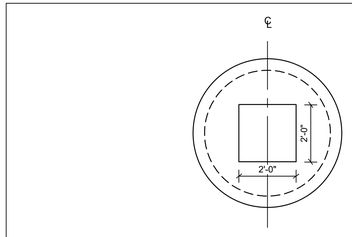


NOTES:

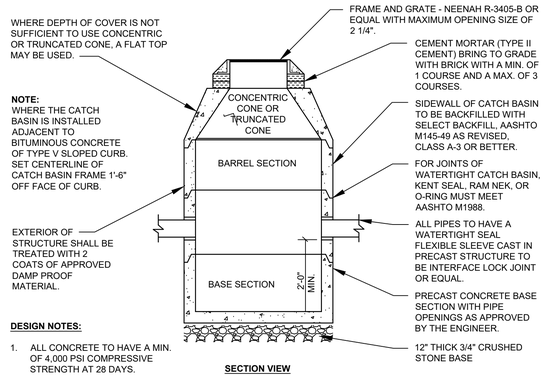
1. COMPACT SUBBASE COURSE TO 92% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

TYP. PAVED PARKING LOT SECTION

NOT TO SCALE



PLAN VIEW



NOTE:
WHERE THE CATCH BASIN IS INSTALLED ADJACENT TO BITUMINOUS CONCRETE OF TYPE V SLOPED CURB. SET CENTERLINE OF CATCH BASIN FRAME 1'-6" OFF FACE OF CURB.

SECTION VIEW

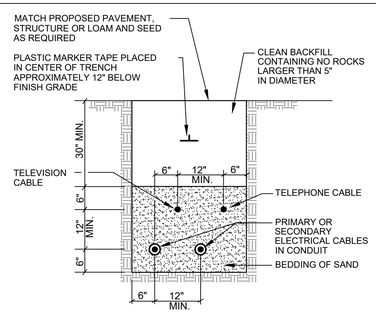
DESIGN NOTES:

1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.12 IN SQ./LF..

NOTE:
CASCADE GRATES SHALL BE INSTALLED ON GRADIENT OF GUTTER IF PROFILE GRADE EXCEEDS 5% GRATES SHALL BE DEPRESSED 2" BELOW NORMAL GUTTER GRADE UNLESS THIS DEPRESSION INTERFERES WITH TRAFFIC. PARALLEL BAR GRATES SHALL BE INSTALLED ON A LEVEL GRADIENT.

TYPICAL CATCH BASIN

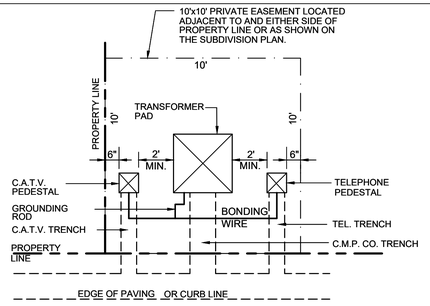
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CABLES TO BE ENCASED IN SCHEDULE 40 PVC CONDUIT WHEN RUN BENEATH PAVED AREAS.

TYPICAL UNDERGROUND CABLE INSTALLATION

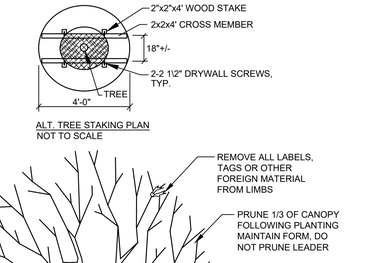
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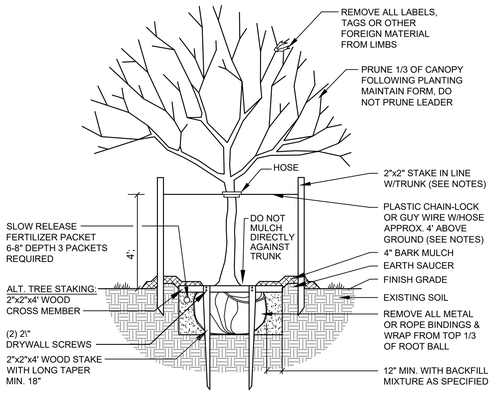
NOTE:
TRANSFORMER PAD AND COVER TO BE FIBERGLASS MEETING CENTRAL MAINE POWER SPECIFICATIONS.

TRANSFORMER DETAIL

NOT TO SCALE



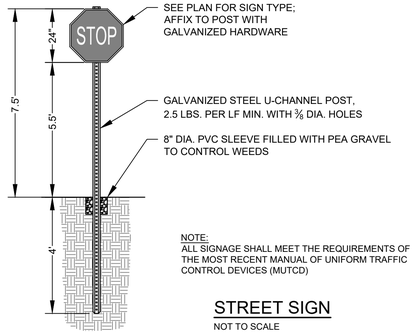
ALT. TREE STAKING PLAN
NOT TO SCALE



NOTES:
INSTALL STAKES AND GUYS TO TREES IF THE FOLLOWING APPLY:
1. THE TREE IS OF SUBSTANTIAL SIZE.
2. THE PLANTING LOCATION IS EXTREMELY WINDY, AS ON OPEN UNDEVELOPED SITES.
3. THE PLANTING LOCATION IS COMPRISED OF SAND OR OTHER LOOSE TEXTURED SOILS.
4. IF STAKES AND GUYS ARE REQUIRED, REMOVE AFTER ONE YEAR TIME.

DECIDUOUS TREES 2" TO 4" CALIPER

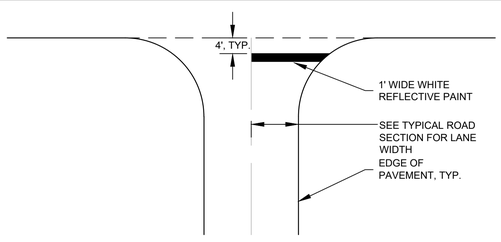
NOT TO SCALE



NOTE:
ALL SIGNAGE SHALL MEET THE REQUIREMENTS OF THE MOST RECENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

STREET SIGN

NOT TO SCALE

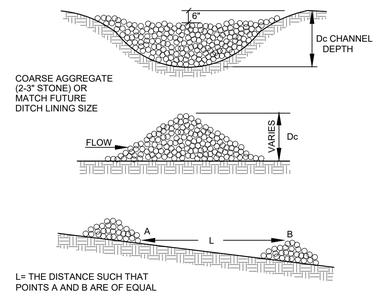


STOP BAR DETAIL

NOT TO SCALE

CONSTRUCTION NOTES:

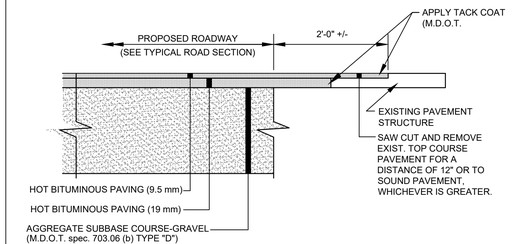
1. CHECK DAMS SHALL BE INSTALLED BEFORE RUNOFF IS DIRECTED TO THE SWALE.
2. THE AREA AROUND EACH CHECK DAM SHALL BE FREE OF DEBRIS.
3. THE MAXIMUM HEIGHT OF A STONE CHECK DAM SHALL BE 2 FEET WITH A 6-INCH DEPRESSION AT ITS CENTER FRO OVERFLOW. THE EDGES OF THE DAM SHALL BE KEYED INTO THE EMBANKMENTS TO PREVENT SIDE EROSION.
4. MECHANICAL PLACEMENT FOLLOWED BY HAND PLACEMENT WILL BE NECESSARY TO ACHIEVE A TIGHT MASS WITHIN THE CHANNEL AND ENSURE THAT THE CENTER OF THE DAM IS LOWER THAN THE EDGES.
5. ANY EROSION DOWNGRADIENT OR AROUND THE EDGES OF THE STONE CHECK DAMS SHALL BE CORRECTED IMMEDIATELY.
6. THE CHECK DAM MAY BE REMOVED WHEN THE SWALE IS STABILIZED WITH VEGETATION (90% COVERAGE).



L= THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

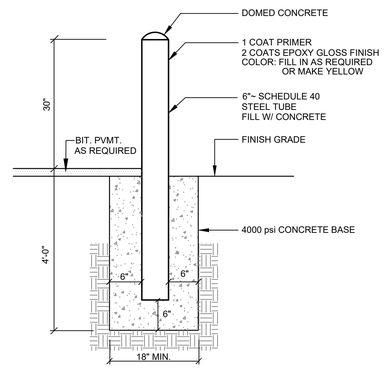
STONE CHECK DAM

NOT TO SCALE



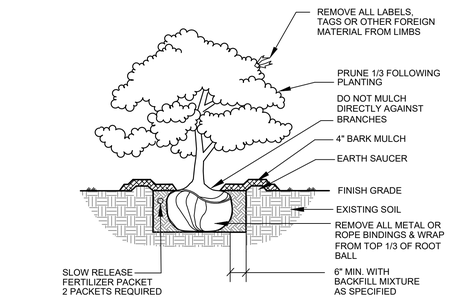
TYPICAL PAVEMENT JOINT

NOT TO SCALE



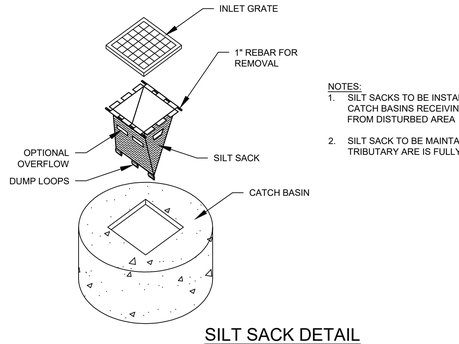
METAL BOLLARD

NOT TO SCALE



DECIDUOUS & EVERGREEN SHRUB

NOT TO SCALE



NOTES:
1. SILT SACKS TO BE INSTALLED IN ALL CATCH BASINS RECEIVING RUNOFF FROM DISTURBED AREA
2. SILT SACK TO BE MAINTAINED UNTIL TRIBUTARY ARE IS FULLY STABILIZED

SILT SACK DETAIL

NOT TO SCALE

TERRADYN CONSULTANTS, LLC
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING
41 CAMPUS DRIVE, SUITE 201, NEW GLOUCESTER, ME 04260
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565 CONGRESS STREET, SUITE 301, PORTLAND, ME 04102

STATE OF MAINE — JEFFREY D. AMOS — 10167 — LICENSED PROFESSIONAL ENGINEER

DATE: 6/2/2022
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
3	5/31/2022	REVISED PER FINAL 3RD PARTY REVEIW	
4	6/2/2022	MODIFIED BUILDING NO. 7	

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE: SITE DETAILS

CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	AS NOTED
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125D.dwg

SHEET C-3.1

CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.

2. 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 WORK.

3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.

4. 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.

5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.

6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.

7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.

8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.

9. 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 2016 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.

10. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. 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.

11. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. 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 TOWN OR CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.

12. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. 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.

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 SAWCUT 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 TOWN AS APPLICABLE.

17. THE PROPOSED LIMITS OF CLEARING SHOWN HEREON ARE APPROXIMATE BASED UPON THE PROPOSED LIMITS OF SITE GRADING. THE APPLICANT RESERVES THE RIGHT TO PERFORM NORMAL FOREST MANAGEMENT ACTIVITIES OUTSIDE OF THE CLEARING LIMIT AS SHOWN. TREE REMOVAL OUTSIDE OF THE LIMITS OF CLEARING MAY BE NECESSARY TO REMOVE DEAD OR DYING TREES OR TREE LIMBS. THIS REMOVAL IS DUE TO POTENTIAL SAFETY HAZARDS AND TO PROMOTE PROPER FOREST GROWTH.

18. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.

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 COMPLETION.

20. 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.

21. 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 JUDGMENT OF TERRADYN CONSULTANTS, LLC.

22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.

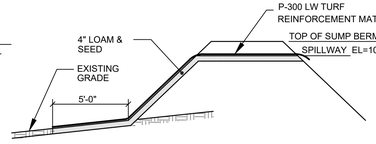
23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.

24. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.

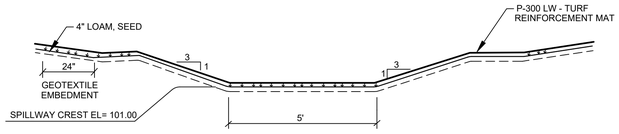
25. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.

26. 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.

EMBANKMENT CONSTRUCTION
1. CONSTRUCTION OF COMMON BORROW MATERIAL MEETING M.D.O.T. SPECIFICATION 703.
2. PLACE BORROW MATERIAL IN 12" LIFTS COMPACTED TO 95% OF MAXIMUM DRY DENSITY.
3. INSTALL RIPRAP AND EROSION CONTROL MESH WHERE SPECIFIED ON PLANS
4. LOAM, SEED, AND STABILIZE IN ACCORDANCE WITH SEDIMENTATION AND EROSION CONTROL PLAN.



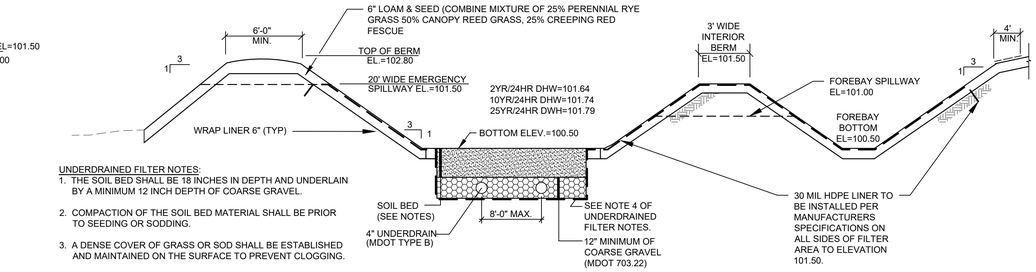
FOREBAY SPILLWAY SECTION - FILTER BASIN
NOT TO SCALE



FOREBAY BERM SPILLWAY CROSS-SECTION
NOT TO SCALE

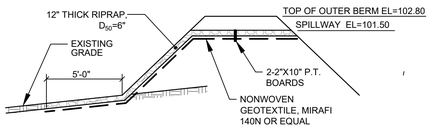
CONSTRUCTION PHASE NOTES:
Construction Sequence: The soil filter media and vegetation must not be installed until the area that drains to the filter has been permanently stabilized with pavement or other structure, 90% vegetation cover, or other permanent stabilization unless the runoff from the contributing drainage area is diverted around the filter until stabilization is completed.
Compaction of Soil Filter: Filter soil media and underdrain bedding material must be compacted to between 90% and 92% standard proctor. The bed should be installed in at least 2 lifts of 9 inches to prevent pockets of loose media.
Construction Oversight: Inspection by a professional engineer will occur at a minimum:
- After the preliminary construction of the filter grades and once the underdrain pipes are installed but not backfilled,
- After the drainage layer is constructed and prior to the installation of the filter media,
- After the filter media has been installed and seeded. Bio-retention cells must be stabilized per the provided planting scheme and density for the canopy coverage of 30 and 50%.
- After one year to inspect health of the vegetation and make corrections, and
- All the material used for the construction of the filter basin must be confirmed as suitable by the design engineer. Testing must be done by a certified laboratory to show that they are passing DEP specifications.

Testing and Submittals: The contractor shall identify the location of the source of each component of the filter media. All results of field and laboratory testing shall be submitted to the project engineer for confirmation. The contractor shall:
- Select samples for sampling of each type of material to be blended for the mixed filter media and samples of the underdrain bedding material. Samples must be a composite of three different locations (grabs) from the stockpile or pit face. Sample size required will be determined by the testing laboratory.
- Perform a sieve analysis conforming to STM C136 (Standard Test Method for Sieve Analysis of fine and Course Aggregates 1996A) on each type of the sample material. The resulting soil filter media mixture must have 8% to 12% by weight passing the #200 sieve, a clay content of less than 2% (determined hydrometer grain size analysis) and have 10% dry weight of organic matter.
- Perform a permeability test on the soil filter media mixture conforming to ASTM D2434 with the mixture compacted to 90-92% of maximum dry density based on ASTM D698.



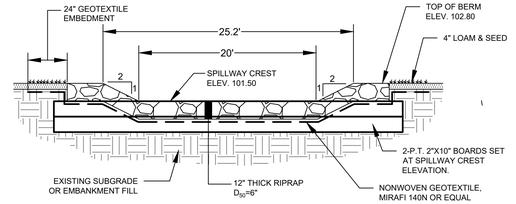
UNDERDRAINED FILTER NOTES:
1. THE SOIL BED SHALL BE 18 INCHES IN DEPTH AND UNDERLAIN BY A MINIMUM 12 INCH DEPTH OF COARSE GRAVEL.
2. COMPACTION OF THE SOIL BED MATERIAL SHALL BE PRIOR TO SEEDING OR SODDING.
3. A DENSE COVER OF GRASS OR SOD SHALL BE ESTABLISHED AND MAINTAINED ON THE SURFACE TO PREVENT CLOGGING.
4. PLACE NON WOVEN GEOTEXTILE FABRIC (MIRIFI S600 OR APPROVED EQUAL) ON ALL SIDES AND BOTTOM OF SOIL & GRAVEL FILTER AREA.
5. SOIL FILTER BED SHALL MEET THE SPECIFICATIONS SHOWN IN SOIL FILTER MEDIA TABLE.

FILTER BASIN
NOT TO SCALE



EMBANKMENT CONSTRUCTION
1. CONSTRUCTION OF COMMON BORROW MATERIAL MEETING M.D.O.T. SPECIFICATION 703.
2. PLACE BORROW MATERIAL IN 12" LIFTS COMPACTED TO 95% OF MAXIMUM DRY DENSITY.
3. INSTALL RIPRAP AND EROSION CONTROL MESH WHERE SPECIFIED ON PLANS
4. LOAM, SEED, AND STABILIZE IN ACCORDANCE WITH SEDIMENTATION AND EROSION CONTROL PLAN.

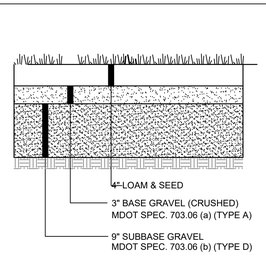
EMERGENCY SPILLWAY SECTION - FILTER BASIN
NOT TO SCALE



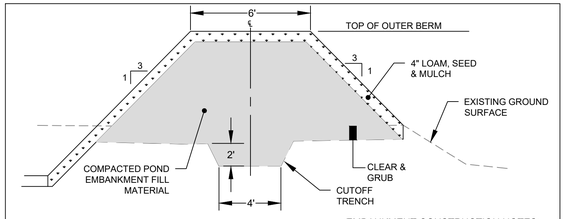
EMERGENCY SPILLWAY CROSS-SECTION
NOT TO SCALE

SOIL FILTER MEDIA TABLE		
FILTER MEDIA	MIXTURE BY VOLUME	SPECIFICATION
SAND	50%-55%	MEDOT SPEC. 703.01 FINE AGGREGATE FOR CONCRETE
TOPSOIL	20%-30%	LOAMY SAND TOPSOIL WITH MINIMAL CLAY CONTENT AND BETWEEN 15-25% FINES PASSING THE #200 SIEVE.
MULCH	20%-30%	MODERATELY FINE, SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 5% PASSING THE #200 SIEVE

GRASSED UNDERDRAINED SOIL FILTER BASIN DETAILS
NOT TO SCALE



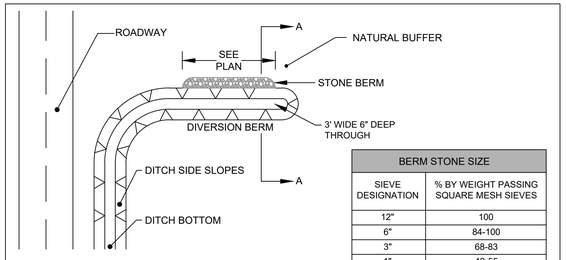
STABILIZED GRASS STORMWATER AREA & POND ACCESS CROSS-SECTION
NOT TO SCALE



EMBANKMENT FILL MATERIAL:
FILL MUST BE FREE OF FROZEN SOIL, ROCKS OVER SIX INCHES, AND SOD, BRUSH, STUMPS, TREE ROOTS, WOOD, OR OTHER PERISHABLE MATERIALS. EMBANKMENT FILLS LESS THAN 10 FEET IN FILL HEIGHT MUST BE COMPACTED USING COMPACTION METHODS THAT WOULD GUARANTEE A FILL DENSITY OF 90% OF THE MAXIMUM DENSITY AS DETERMINED BY STANDARD PROCTOR (ASTM-698) ALL EMBANKMENT FILLS MORE THAN 10 FEET IN FILL HEIGHT MUST BE COMPACTED TO 90% OF THE MAXIMUM DENSITY AND MUST HAVE THEIR DENSITY VERIFIED BY FIELD DENSITY TESTING.

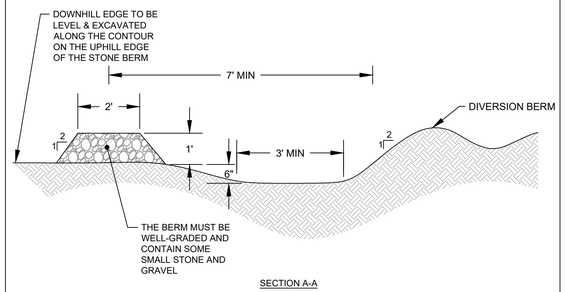
EMBANKMENT CONSTRUCTION NOTES:
1. CONTRACTOR SHALL REMOVE ALL TOPSOIL AND ORGANIC MATERIAL FROM EMBANKMENT AND POND CONSTRUCTION AREA.
2. SCARIFY SUBGRADE TO ESTABLISH INTERFACE FOR ALL FILLS.
3. COMPACT IN 12" LIFTS TO 92% OF MAXIMUM DRY DENSITY.
4. INSTALL RIPRAP AND EROSION CONTROL MESH WHERE SPECIFIED.
5. LOAM, SEED & STABILIZE IN ACCORDANCE WITH SEDIMENTATION AND EROSION CONTROL PLAN & NOTES.

POND EMBANKMENT DETAIL
NOT TO SCALE



BERM STONE SIZE	
SIEVE DESIGNATION	% BY WEIGHT PASSING SQUARE MESH SIEVES
12"	100
6"	84-100
3"	68-83
1"	42-55
#4	8-12

PLAN VIEW



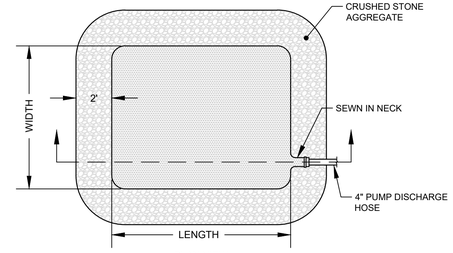
SECTION A-A

CONSTRUCTION & POST-CONSTRUCTION PHASE NOTES:
Buffers - General
General forest use means that the land must be maintained with a forest cover and undisturbed soil, duff layer ground cover vegetation, and understory vegetation. Timber may be harvested on a selective basis provided that no more than 40% of the volume is harvested within any 10 year period.

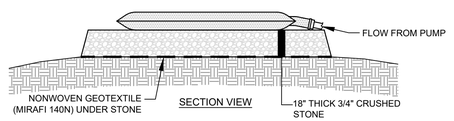
Stone Bermed Level Lip Spreader
Inspections by a professional engineer shall consist of weekly visits to the site to inspect each level spreaders construction, stone berm material and placement, settling basin from initial ground disturbance to final stabilization of the level spreader.

Road Ditch Turnouts
Inspections by a professional engineer shall consist of weekly visits to the site to inspect each turnout construction, turnout's stone berm material and placement, from initial ground disturbance to final stabilization of the level spreader.

TYPICAL DITCH TURNOUT BUFFER
NOT TO SCALE



PLAN VIEW



NOTES:
1. DIRTBAG BY ACF ENVIRONMENTAL
2. SEAMS MUST BE HIGH STRENGTH DOUBLE STITCHED "J" SEAMS.
3. CONSTRUCTION DEWATERING OF TURBID WATER SHALL BE PUMPED THROUGH A DIRTBAG AND RELEASED THROUGH A VEGETATED BUFFER AT LEAST 50' UPSTREAM OF WETLAND AREAS.
4. THE LOCATION OF THE DIRTBAG SHALL BE DETERMINED BY THE CONTRACTOR, BUT SHALL IT SHALL NOT BE SITED IN CRITICAL AREAS, SUCH AS WETLANDS.

DIRTBAG DETAIL
NOT TO SCALE

STATE OF MAINE — JEFFREY D. AMOS — 10167 — LICENSED PROFESSIONAL ENGINEER

DATE: 6/2/2022
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY
4	6/2/2022	MODIFIED BUILDING NO. 7	
3	5/31/2022	REVISED PER FINAL 3RD PARTY REVEIW	
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

565 CONGRESS STREET
SUITE 301
PORTLAND, ME 04102

41 CAMPUS DRIVE
SUITE 305
NEW GLOUCESTER, ME 04260

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TERRADYN CONSULTANTS, LLC
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

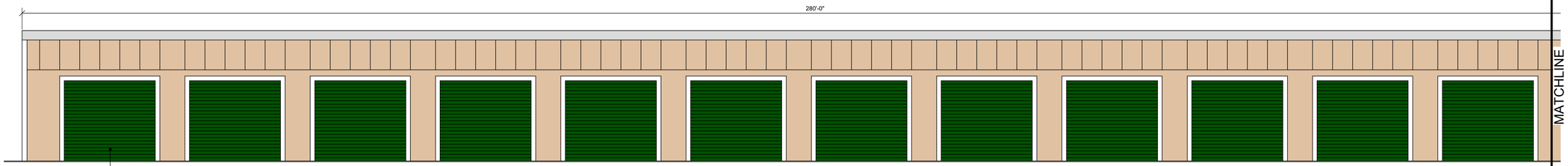
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

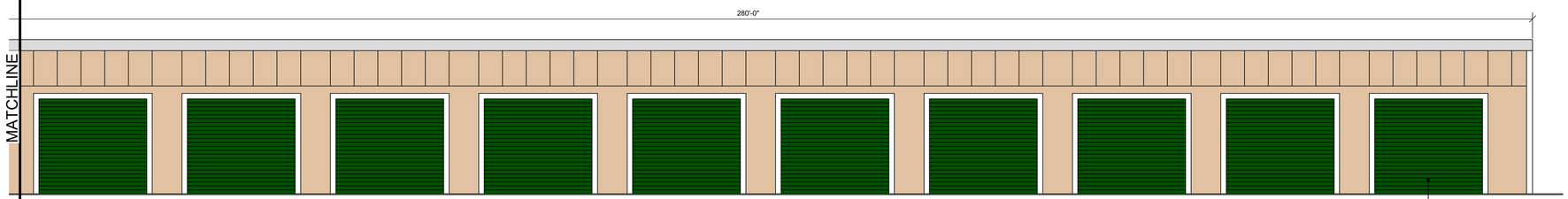
SHEET TITLE:
DETAILS & NOTES

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

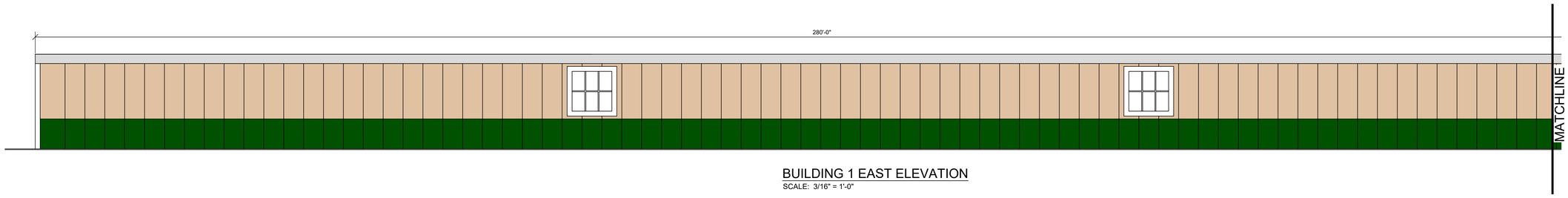
DATE:	11/10/2021
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DESIGNED:	JDA
JOB NO:	2125
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SHEET	C-3.2



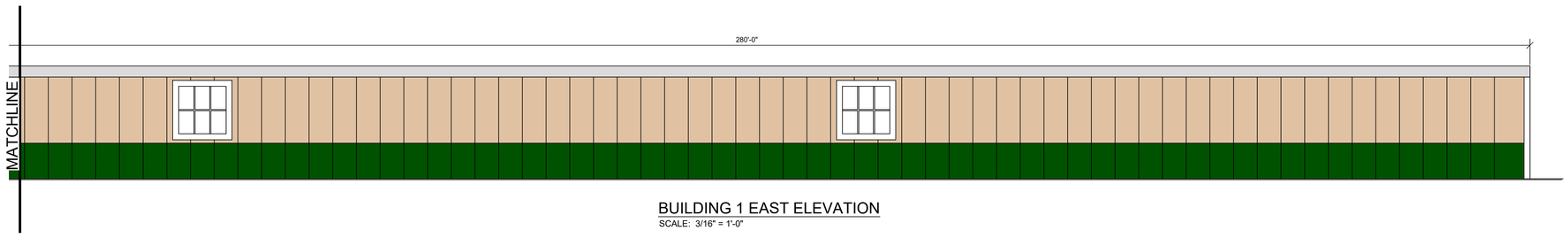
BUILDING 1 WEST ELEVATION
SCALE: 3/16" = 1'-0"



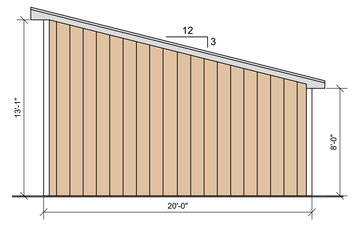
BUILDING 1 WEST ELEVATION
SCALE: 3/16" = 1'-0"



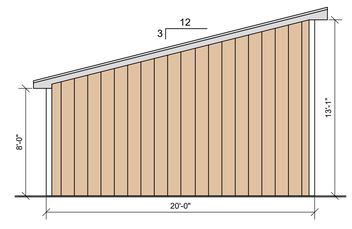
BUILDING 1 EAST ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 1 EAST ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 1 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 1 NORTH ELEVATION
SCALE: 3/16" = 1'-0"

JEFFREY D. AMOS
10167
LICENSED PROFESSIONAL ENGINEER
STATE OF MAINE

DATE: 6/2/2022
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY
4	6/2/2022	MODIFIED BUILDING NO. 7	
3	5/31/2022	REVISED PER FINAL 3RD PARTY REVEIW	
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

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41 CAMPUS DRIVE
SUITE 201
NEW GLOUCESTER, ME 04260
OFFICE: (207) 926-5111
www.terradynconsultants.com
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102

CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

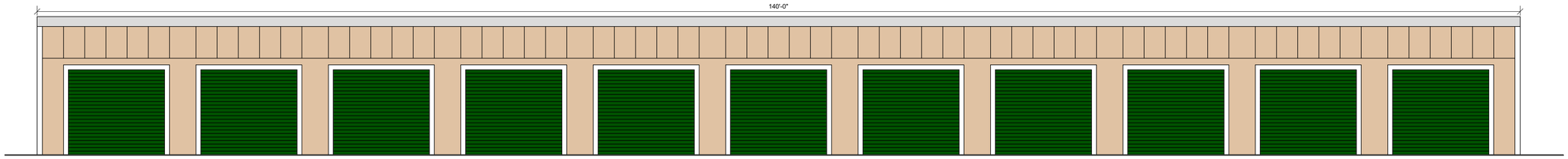
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

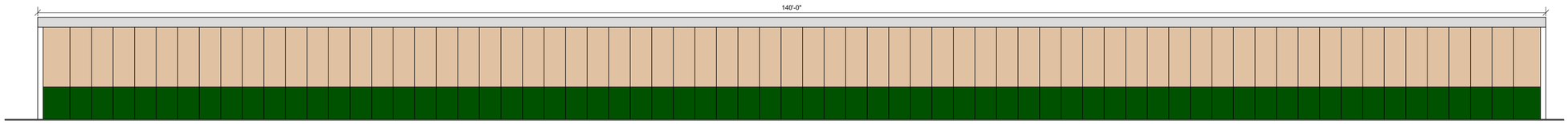
SHEET TITLE:
BUILDING 1 ELEVATIONS

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

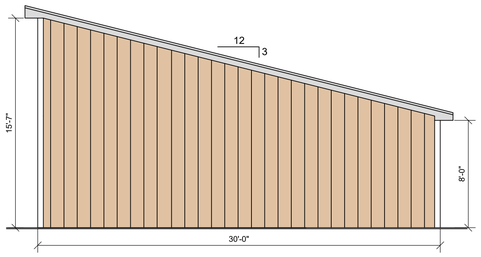
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SCALE:	3/16" = 1'-0"
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125elev.dwg
SHEET	A-1.1



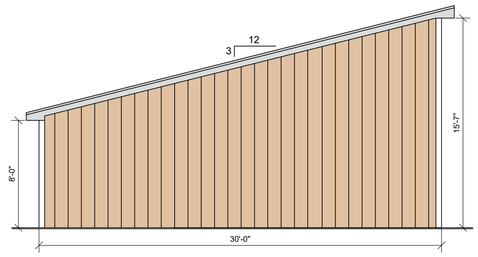
BUILDING 2 & 3 WEST ELEVATION
BUILDING 4 & 5 EAST ELEVATION
SCALE: 3/16" = 1'-0"



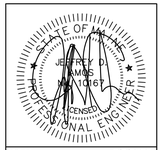
BUILDING 2 & 3 EAST ELEVATION
BUILDING 4 & 5 WEST ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 2 & 3 NORTH ELEVATION
BUILDING 4 & 5 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 2 & 3 SOUTH ELEVATION
BUILDING 4 & 5 NORTH ELEVATION
SCALE: 3/16" = 1'-0"



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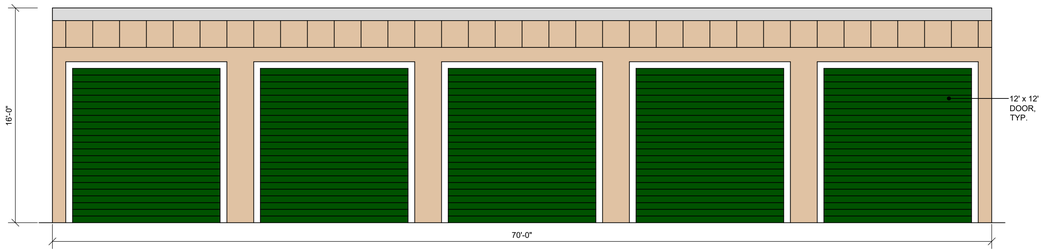
PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE:
BUILDING 2-5 ELEVATIONS

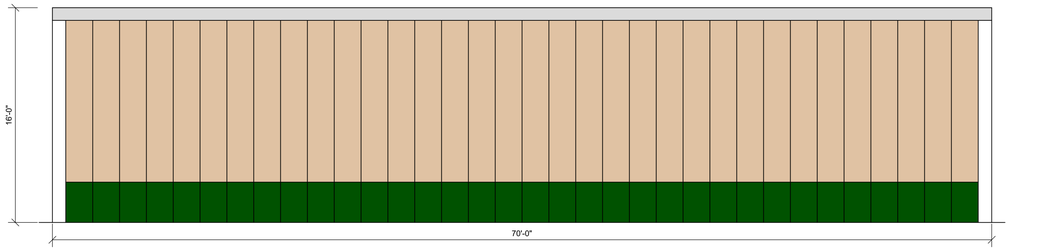
CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	3/16" = 1'-0"
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125elev.dwg

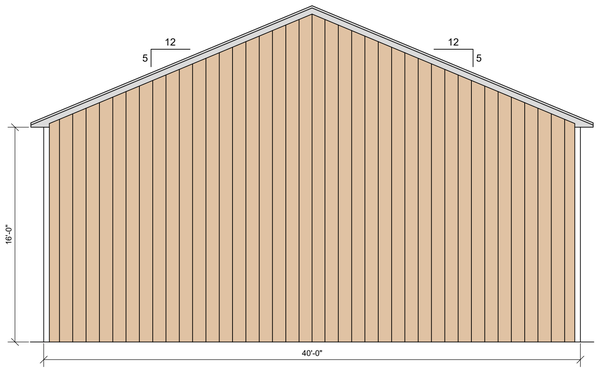
SHEET A-1.2



BUILDING 7 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 7 NORTH ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 7 EAST AND WEST ELEVATION
SCALE: 3/16" = 1'-0"

STATE OF MAINE
JEFFREY D. AMOS
10167
LICENSED PROFESSIONAL ENGINEER

DATE: 6/2/2022
P.E.: 10167

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PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE:
BUILDING 7 ELEVATIONS

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	3/16" = 1'-0"
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125elev.dwg
SHEET	A-1.3

GRAY SELF STORAGE

PORTLAND ROAD - GRAY, MAINE

PREPARED BY:

CIVIL ENGINEER:
TERRADYN CONSULTANTS, LLC
41 CAMPUS DR. SUITE 301
NEW GLOUCESTER, MAINE 04260
(207)926-5111

SURVEYOR:
WAYNE T. WOOD & COMPANY
30 WOOD DRIVE
GRAY, MAINE 04039
(207) 657-3330

WETLANDS SURVEY:
MARK CENCI GEOLOGIC INC.
NORTH YARMOUTH, MAINE 04097
(207) 329-3524

APPLICANT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, MAINE 04097

OWNERS:
EQUITY TRUST COMPANY CUSTODIAN
FBO BETH CURETON

PROJECT PARCEL SITE
TOWN OF GRAY TAX ASSESSOR'S MAP & LOT NUMBERS

MAP	LOT
59	31-10
	31-14

APPROVED: TOWN OF GRAY
PLANNING BOARD

_____ DATE

_____

_____

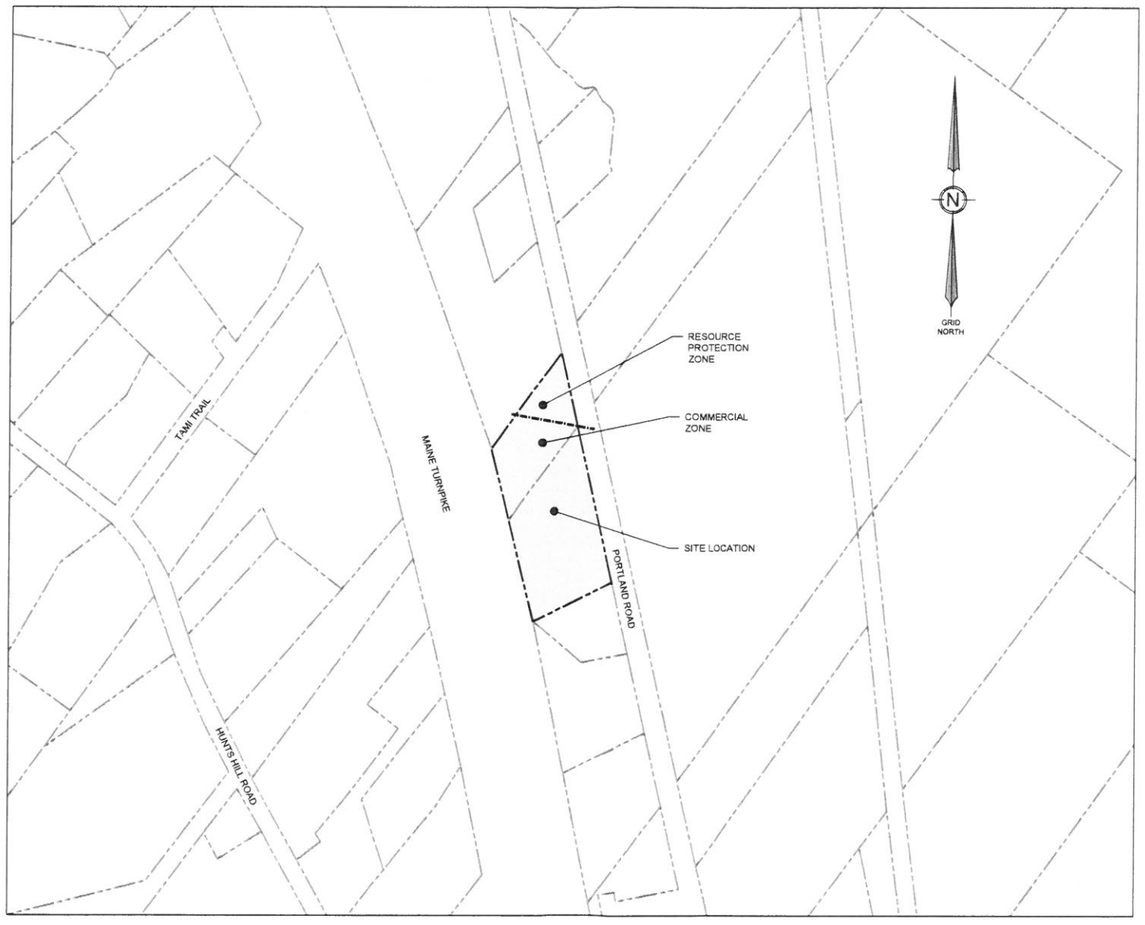
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LOCATION MAP
1" = 200'

SHEET INDEX

C-0.0	COVER SHEET & LOCATION MAP
S-1.0	BOUNDARY SURVEY
C-1.0	OVERALL PLAN
C-1.1	SITE LAYOUT & LANDSCAPING PLAN
C-2.0	GRADING & UTILITY PLAN
C-3.0	EROSION CONTROL NOTES & DETAILS
C-3.1	SITE DETAILS
C-3.2	DETAILS & NOTES

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- PROPOSED SETBACK LINE
- EXISTING SETBACK LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- ROAD CENTERLINE
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED CONTOUR
- EXISTING STORMDRAIN
- PROPOSED STORMDRAIN
- EXISTING OVERHEAD ELECTRIC & TELEPHONE
- PROPOSED OVERHEAD ELECTRIC & TELEPHONE
- EXISTING UNDERGROUND ELECTRIC & TELEPHONE
- PROPOSED UNDERGROUND ELECTRIC & TELEPHONE
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- PROPOSED EDGE OF GRAVEL
- EXISTING TREE LINE
- PROPOSED TREE LINE
- CHAIN LINK FENCE
- PROPOSED FENCE
- EXISTING GUARDRAIL
- PROPOSED GUARDRAIL
- MULCH BERM
- PROPOSED TRANSFORMER
- PROPOSED LIGHT POLE
- EXISTING UTILITY POLE
- PROPOSED CATCH BASIN
- EXISTING SPOT GRADE
- PROPOSED SPOT GRADE
- EXISTING SIGN
- PROPOSED SIGN
- EXISTING BUILDING
- PROPOSED BUILDING
- WETLAND AREA
- PROPOSED PAVEMENT
- RIPRAP
- PROPOSED GRAVEL

DATE: 5/2/2022
P.E. 10167

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PERMIT DRAWING
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PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD, GRAY, ME

SHEET TITLE:
COVER/LOCATION MAP

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	1" = 200'
DESIGNED:	JDA
JOB NO:	2125
FILE	2125 C.DWG
SHEET	C-0.0

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCELS IS EQUITY TRUST COMPANY, FBO BETH CURETON BY DEED RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 38,413, PAGE 249 & BOOK 38,125 PAGE 201.

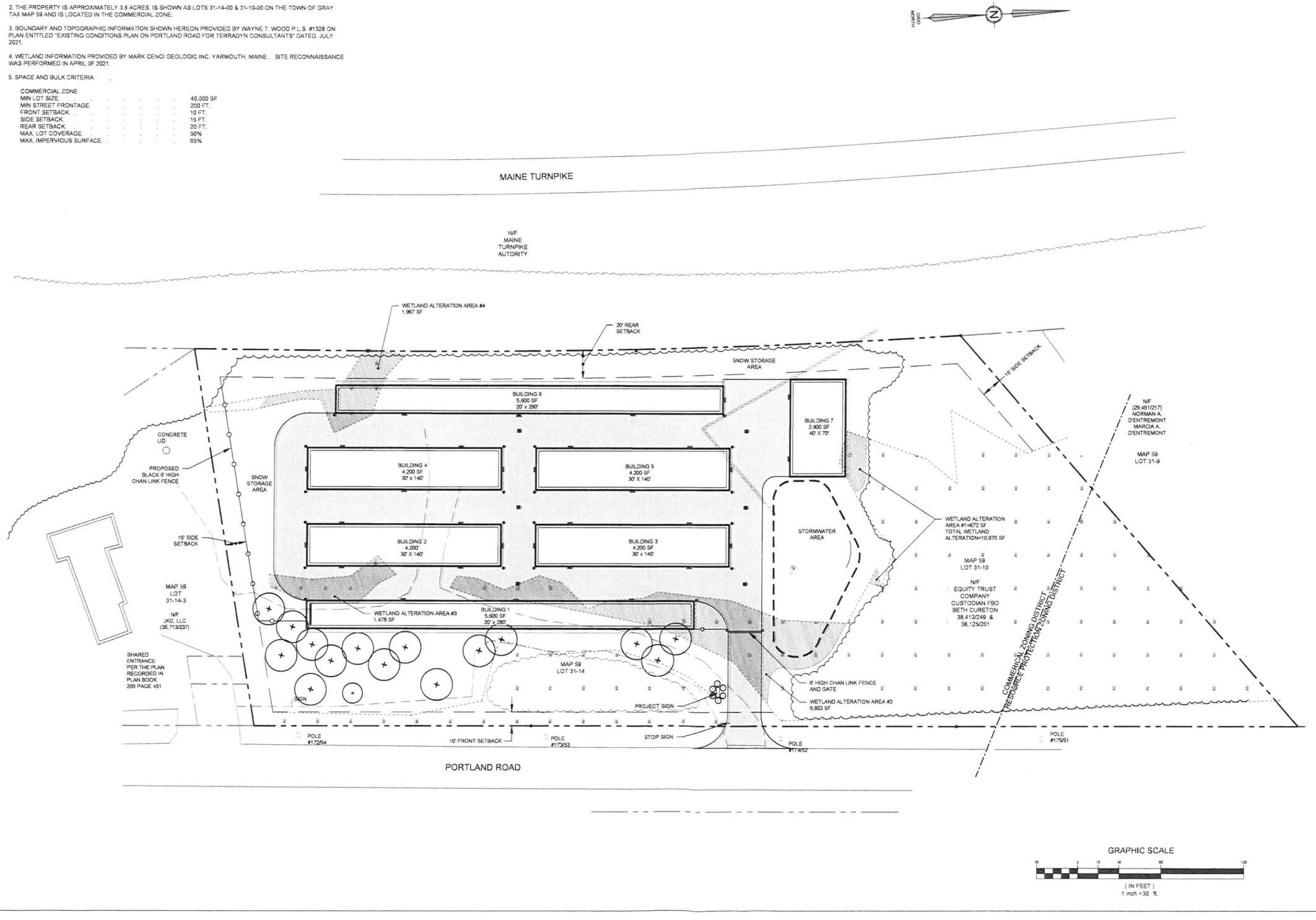
2. THE PROPERTY IS APPROXIMATELY 3.8 ACRES, IS SHOWN AS LOTS 31-14-00 & 31-10-00 ON THE TOWN OF GRAY TAX MAP 59 AND IS LOCATED IN THE COMMERCIAL ZONE.

3. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON PROVIDED BY WAYNE T. WOOD P.L.S. #1328 ON PLAN ENTITLED "EXISTING CONDITIONS PLAN ON PORTLAND ROAD FOR TERRADYN CONSULTANTS" DATED, JULY 2021.

4. WETLAND INFORMATION PROVIDED BY MARK CENCI GEOLOGIC INC, YARMOUTH, MAINE . SITE RECONNAISSANCE WAS PERFORMED IN APRIL OF 2021.

5. SPACE AND BULK CRITERIA:

COMMERCIAL ZONE	
MIN LOT SIZE	40,000 SF
MIN STREET FRONTAGE	200 FT.
FRONT SETBACK	10 FT.
SIDE SETBACK	15 FT.
REAR SETBACK	20 FT.
MAX. LOT COVERAGE	50%
MAX. IMPERVIOUS SURFACE	65%



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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PORTLAND ROAD, GRAY, ME

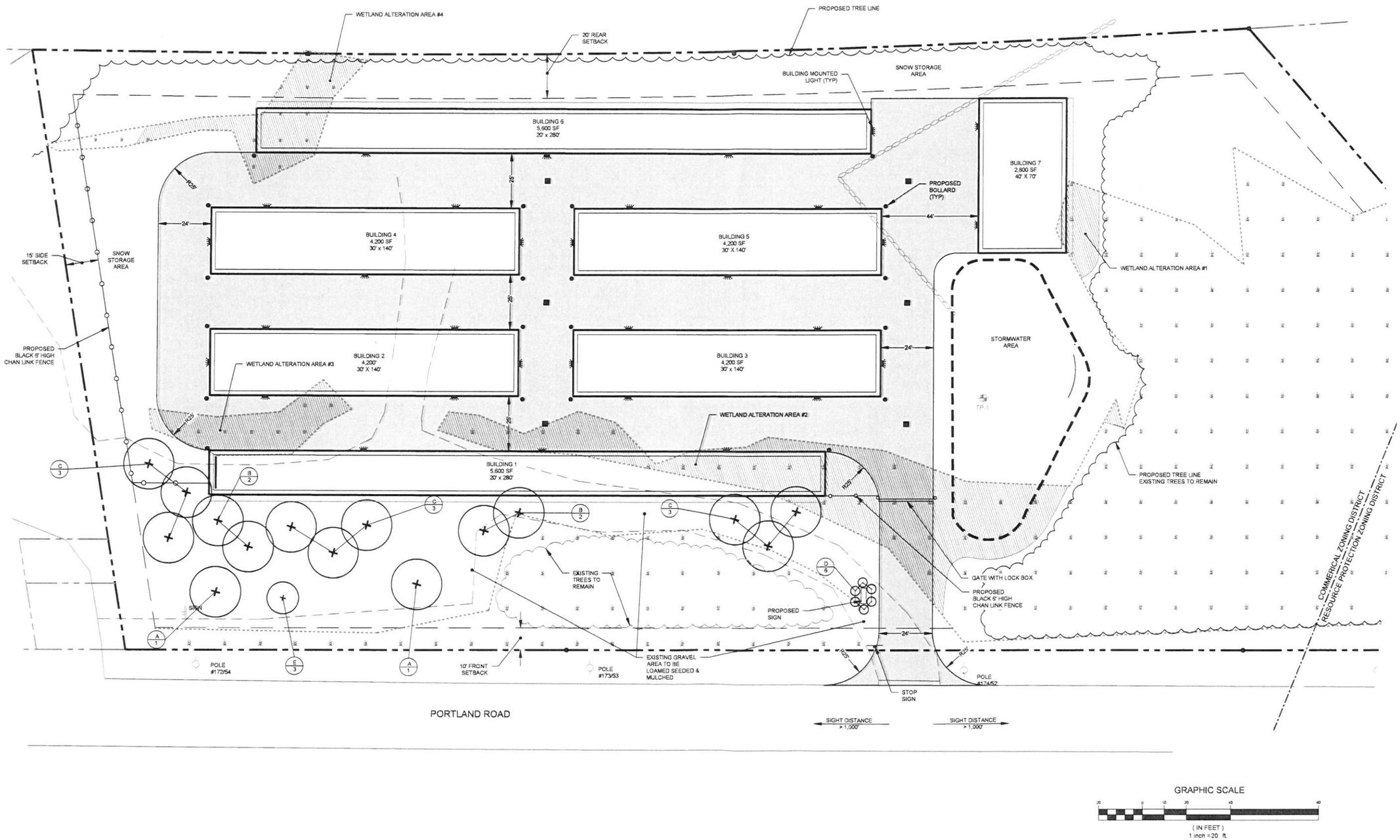
SHEET TITLE: OVERALL PLAN

CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	1" = 30'
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125S.dwg
SHEET	C-1.0

PLANT LIST:

KEY	COMMON & BOTANICAL NAME	SIZE	ROOT	QTY	NOTES
A	RED MAPLE - ACER RUBRUM	2 1/2" CAL.	B & B	2	
B	WHITE SPRUCE - P. GLAUCA	5'-6" HT.,	B & B	4	
C	WHITE PINE - P. STROBUS	4'-5' HT.	B & B	9	
D	N. BAYBERRY - M. PENSLVANICA	30" HT.	CONT.	6	3 CANES
E	DOGWOOD (OR SIMILAR FLOWERING TREE)	5'-6' HT..	B & B	1	



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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PROJECT: GRAY SELF STORAGE
PORTLAND ROAD, GRAY, ME

SHEET TITLE: SITE LAYOUT & LANDSCAPING PLAN

CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	1" = 20'
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125S.dwg
SHEET	C-1.1

HOUSEKEEPING NOTES:

1. 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.

2. GROUNDWATER PROTECTION. 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.

3. FUGITIVE SEDIMENT AND DUST. 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.

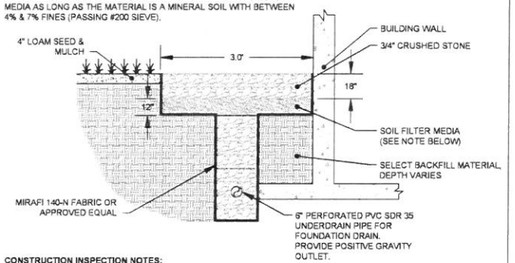
4. DEBRIS AND OTHER MATERIALS. LITTER, CONSTRUCTION DEBRIS, AND CHEMICALS EXPOSED TO STORMWATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

5. TRENCH OR FOUNDATION DE-WATERING. TRENCH DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER MUST BE REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, AND MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

6. NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES.

7. ADDITIONAL REQUIREMENTS. ADDITIONAL REQUIREMENTS MAY BE APPLIED ON A SITE-SPECIFIC BASIS.

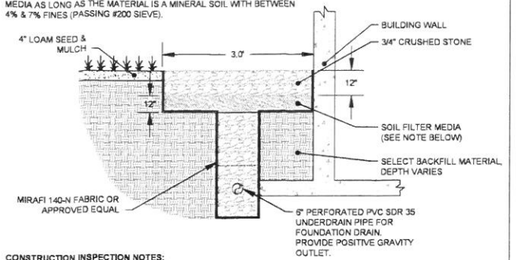
NOTE:
THE BACKFILL FOR THE FOUNDATION MAY BE USED AS THE FILTER MEDIA AS LONG AS THE MATERIAL IS A MINERAL SOIL WITH BETWEEN 4% & 7% FINES (PASSING #200 SIEVE).



CONSTRUCTION INSPECTION NOTES:
Inspections by a professional engineer shall consist of weekly visits to the site to inspect each the roof drip edge filter's underdrain construction, filter material placement, and overflow from initial ground disturbance to final stabilization of the filter.

BUILDING #7 ROOF DRIPLINE FILTER BED
NOT TO SCALE

NOTE:
THE BACKFILL FOR THE FOUNDATION MAY BE USED AS THE FILTER MEDIA AS LONG AS THE MATERIAL IS A MINERAL SOIL WITH BETWEEN 4% & 7% FINES (PASSING #200 SIEVE).



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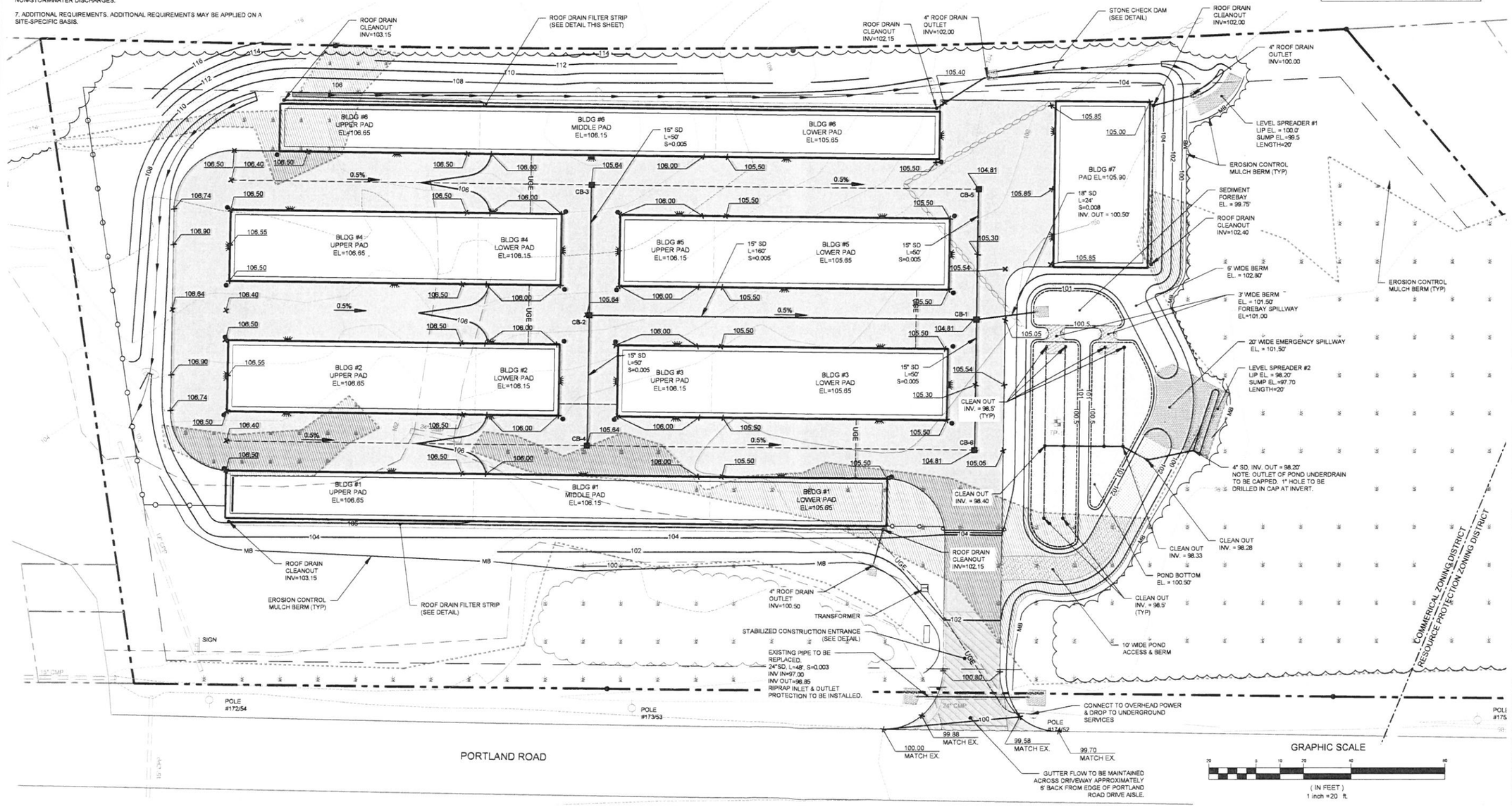
BUILDINGS #1&6 ROOF DRIPLINE FILTER BED
NOT TO SCALE

FOUNDATION DRAIN NOTE:

1. FOUNDATION DRAINS SHALL NOT DRAIN TO THE STORMWATER POND. OUTLET OF DRAIN TO FLOW TO A NON-WETLAND AREA AND BE ARMORED WITH A PROPERLY SIZED RIPRAP OUTLET.

CATCH BASIN TABLE:

NAME	RIM	INV. IN	INV. OUT
CB-1	104.71	100.70(3)	100.70
CB-2	105.54	101.50(2)	101.50
CB-3	105.54	———	101.75
CB-4	105.54	———	101.75
CB-5	104.71	———	100.95
CB-6	104.71	———	100.95



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PROJECT: GRAY SELF STORAGE
PORTLAND ROAD GRAY, ME
SHEET TITLE: GRADING & UTILITY PLAN
CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	1" = 20'
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125G.dwg
SHEET	C-2.0

EROSION AND SEDIMENT CONTROL PLAN

PRE-CONSTRUCTION PHASE
A PERSON WHO CONDUCTS, OR CAUSES TO BE CONDUCTED, AN ACTIVITY THAT INVOLVES FILLING, DISPLACING OR EXPOSING SOIL OR OTHER EARTHEN MATERIALS SHALL TAKE MEASURES TO PREVENT UNREASONABLE EROSION OF SOIL OR SEDIMENT BEYOND THE PROJECT SITE OR INTO A PROTECTED NATURAL RESOURCE AS DEFINED IN 38 MRSA § 480-B. EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE THE ACTIVITY BEGINS. MEASURES MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL THE SITE IS PERMANENTLY STABILIZED. ADEQUATE AND TIMELY TEMPORARY AND PERMANENT STABILIZATION MEASURES MUST BE TAKEN. THE SITE MUST BE MAINTAINED TO PREVENT UNREASONABLE EROSION AND SEDIMENTATION. MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE.

BMP CONSTRUCTION PHASE
A. SEDIMENT BARRIERS. PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE EDGE OF ANY DOWNGRADIENT DISTURBED AREA AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE PROPOSED DISTURBED AREA. MAINTAIN THE SEDIMENT BARRIERS UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.

B. CONSTRUCTION ENTRANCE. PRIOR TO ANY CLEARING OR GRUBBING, A CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT THE INTERSECTION WITH THE PROPOSED ACCESS DRIVE AND THE EXISTING ROADWAY TO AVOID TRACKING OF MUD, DUST AND DEBRIS FROM THE SITE.

C. RIPRAP: SINCE RIPRAP IS USED WHERE EROSION POTENTIAL IS HIGH, CONSTRUCTION MUST BE SEQUENCED SO THAT THE RIPRAP IS PUT IN PLACE WITH THE MINIMUM DELAY. DISTURBANCE OF AREAS WHERE RIPRAP IS TO BE PLACED SHOULD BE UNDERTAKEN ONLY WHEN FINAL PREPARATION AND PLACEMENT OF THE RIPRAP CAN FOLLOW IMMEDIATELY BEHIND THE INITIAL DISTURBANCE. WHERE RIPRAP IS USED FOR OUTLET PROTECTION, THE RIPRAP SHOULD BE PLACED BEFORE OR IN CONJUNCTION WITH THE CONSTRUCTION OF THE PIPE OR CHANNEL SO THAT IT IS IN PLACE WHEN THE PIPE OR CHANNEL BEGINS TO OPERATE. MAINTAIN TEMPORARY RIPRAP. SUCH AS TEMPORARY CHECK DAMS UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.

D. TEMPORARY STABILIZATION. STABILIZE WITH TEMPORARY SEEDING, MULCH, OR OTHER NON-ERODABLE COVER ANY EXPOSED SOILS THAT WILL REMAIN UNWORKED FOR MORE THAN 14 DAYS EXCEPT, STABILIZE AREAS WITHIN 100 FEET OF A WETLAND OR WATERBODY WITHIN 7 DAYS OR PRIOR TO A PREDICTED STORM EVENT, WHICHEVER COMES FIRST. IF HAY OR STRAW MULCH IS USED, THE APPLICATION RATE MUST BE 2 BALES (70-90 POUNDS) PER 1000 SF OR 1.5 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 75 TO 90% OF THE GROUND SURFACE. HAY MULCH MUST BE KEPT MOIST OR ANCHORED TO PREVENT WIND BLOWING. AN EROSION CONTROL BLANKET OR MAT SHALL BE USED AT THE BASE OF GRASSED WATERWAYS, STEEP SLOPES (15% OR GREATER) AND ON ANY DISTURBED SOIL WITHIN 100 FEET OF LAKES, STREAMS AND WETLANDS. GRADING SHALL BE PLANNED SO AS TO MINIMIZE THE LENGTH OF TIME BETWEEN INITIAL SOIL EXPOSURE AND FINAL GRADING. ON LARGE PROJECTS THIS SHOULD BE ACCOMPLISHED BY PHASING THE OPERATION AND COMPLETING THE FIRST PHASE UP TO FINAL GRADING AND SEEDING BEFORE STARTING THE SECOND PHASE, AND SO ON.

E. VEGETATED WATERWAY. UPON FINAL GRADING, THE DISTURBED AREAS SHALL BE IMMEDIATELY SEEDED TO PERMANENT VEGETATION AND MULCHED AND WILL NOT BE USED AS OUTLETS UNTIL A DENSE, VIGOROUS VEGETATIVE COVER HAS BEEN OBTAINED. ONCE SOIL IS EXPOSED FOR WATERWAY CONSTRUCTION, IT SHOULD BE IMMEDIATELY SHAPED, GRADED AND STABILIZED. VEGETATED WATERWAYS NEED TO BE STABILIZED EARLY DURING THE GROWING SEASON (PRIOR TO SEPTEMBER 15). IF FINAL SEEDING OF WATERWAYS IS DELAYED PAST SEPTEMBER 15, EMERGENCY PROVISIONS SUCH AS SOD OR RIPRAP MAY BE REQUIRED TO STABILIZE THE CHANNEL. WATERWAYS SHOULD BE FULLY STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

PERMANENT STABILIZATION DEFINED
A. SEEDED AREAS. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS AN 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

B. SODDED 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 APPROVED APPLICATION RATES AND LIMITATIONS.

D. RIPRAP. FOR 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. STONE MUST BE SIZED APPROPRIATELY. IT IS RECOMMENDED THAT ANGULAR STONE BE USED.

E. AGRICULTURAL USE. FOR CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL PURPOSES (E.G., PIPELINES ACROSS CROP LAND), PERMANENT STABILIZATION MAY BE ACCOMPLISHED BY RETURNING THE DISTURBED LAND TO AGRICULTURAL USE.

F. PAVED AREAS. FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED.

G. DITCHES, CHANNELS, AND SWALES. FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH WELL-GRADED RIPRAP, OR WITH ANOTHER NON-ERGSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE LINING, UNDERCUTTING OF THE BANKS, OR DOWN-CUTTING OF THE CHANNEL.

GENERAL CONSTRUCTION PHASE
THE FOLLOWING EROSION CONTROL MEASURES SHALL BE FOLLOWED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION OF THIS PROJECT:

A. ALL TOPSOIL SHALL BE COLLECTED, STOCKPILED, SEEDED WITH RYE AT 3 POUNDS/1,000 SF AND MULCHED, AND REUSED AS REQUIRED. SILT FENCING SHALL BE PLACED DOWN GRADIENT FROM THE STOCKPILED LOAM. STOCKPILE TO BE LOCATED BY DESIGNATION OF THE OWNER AND INSPECTING ENGINEER.

B. THE INSPECTING ENGINEER AT HIS/HER DISCRETION, MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES AND/OR SUPPLEMENTAL VEGETATIVE PROVISIONS TO MAINTAIN STABILITY OF EARTHWORKS AND FINISH GRADED AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY SUPPLEMENTAL MEASURES AS DIRECTED BY THE INSPECTING ENGINEER. FAILURE TO COMPLY WITH THE ENGINEER'S DIRECTIONS WILL RESULT IN DISCONTINUATION OF CONSTRUCTION ACTIVITIES.

C. EROSION CONTROL MESH SHALL BE APPLIED IN ACCORDANCE WITH THE PLANS OVER ALL FINISH SEEDED AREAS AS SPECIFIED ON THE DESIGN PLANS.

D. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN UNTIL THEY ARE ADEQUATELY STABILIZED.

E. ALL EROSION, AND SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

F. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIALS.

G. AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL.

H. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC., SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.

I. ALL FILLS SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS.

J. EXCEPT FOR APPROVED LANDFILLS OR NON-STRUCTURAL FILLS, FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS.

K. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL FILLS.

L. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION.

M. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED APPROPRIATELY.

N. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

O. REMOVE ANY TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE.

PERMANENT VEGETATION
PERMANENT VEGETATIVE COVER SHOULD BE ESTABLISHED ON DISTURBED AREAS WHERE PERMANENT, LONG LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL, TO REDUCE DAMAGES FROM SEDIMENT AND RUNOFF, AND TO ENHANCE THE ENVIRONMENT.

SEEDBED PREPARATION
A. GRADE AS FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE.

B. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS SUCH AS THOSE OFFERED BY THE UNIVERSITY OF MAINE SOIL TESTING LABORATORY. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL COOPERATIVE EXTENSION SERVICE OFFICE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR MARGINAL SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 600 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 SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED, ALL (BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.D. REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.

E. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED; THE AREA MUST BE TILLED AND FIRMED AS ABOVE.

F. PERMANENT SEEDING SHOULD 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 SHOULD BE HARD SEED (UNSCARIFIED). IF SEEDING CANNOT BE DONE WITHIN THE SEEDING DATES, MULCH ACCORDING TO THE TEMPORARY MULCHING BMP AND OVERWINTER STABILIZATION AND CONSTRUCTION TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

G. FOLLOWING SEED BED PREPARTATION, SWALE AREAS, FILL AREAS AND BACK SLOPES SHALL BE SEEDED AT A RATE OF 3 LBS./1,000 S.F. WITH A MIXTURE OF 35% CREEPING RED FESCUE, 6% RED TOP, 24% KENTUCKY BLUEGRASS, 10% PERENNIAL RYEGRASS, 20% ANNUAL RYEGRASS AND 5% WHITE DUTCH CLOVER.

I. AREAS WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING.

J. AREAS WHICH CANNOT BE SEEDED WITHIN THE GROWING SEASON SHALL BE MULCHED FOR OVER-WINTER PROTECTION AND THE AREA SHOULD BE SEEDED AT THE BEGINNING OF THE GROWING SEASON.

WINTER CONSTRUCTION PHASE
IF AN AREA IS NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES BY NOVEMBER 15, THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES.

A. PERMANENT STABILIZATION CONSISTS OF AT LEAST 90% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.

B. DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH.

C. APPLY HAY MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST BE ANCHORED.

D. USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR ALL SLOPES GREATER THAN 8 % OR OTHER AREAS EXPOSED TO DIRECT WIND.

E. INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGEWAYS (BOTTOM AND SIDES) WITH A SLOPE GREATER THAN 3 %.

F. SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.

G. WINTER EXCAVATION AND EARTH-WORK SHALL BE COMPLETED SO THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.

H. AN AREA WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.

I. TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.

J. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED THAT SAME DAY.

K. IF SNOWFALL IS GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.

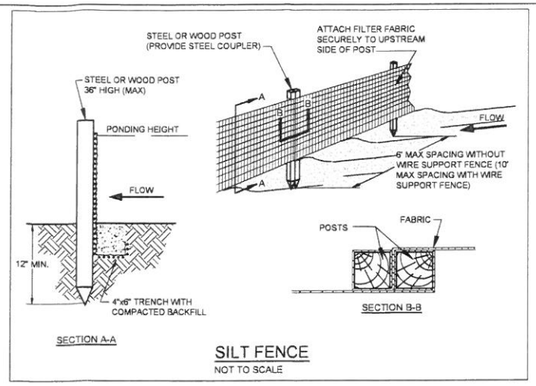
L. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.

M. ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.

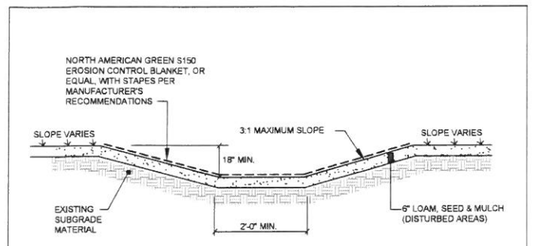
MAINTENANCE AND INSPECTION PHASE
A. MINIMUM EROSION CONTROL MEASURES WILL NEED TO BE IMPLEMENTED AND THE APPLICANT WILL BE RESPONSIBLE TO MAINTAIN ALL COMPONENTS OF THE EROSION CONTROL PLAN UNTIL THE SITE IS FULLY STABILIZED. HOWEVER, BASED ON SITE AND WEATHER CONDITIONS DURING CONSTRUCTION, ADDITIONAL 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

B. A LOG (REPORT) MUST BE KEPT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME(S) AND QUALIFICATIONS OF THE PERSONNEL MAKING THE INSPECTION, THE DATE(S) OF THE INSPECTION, AND MAJOR OBSERVATIONS RELATING TO OPERATION OF EROSION AND SEDIMENTATION CONTROLS AND POLLUTION PREVENTION MEASURES. MAJOR OBSERVATIONS MUST INCLUDE: BMPS THAT NEED TO BE MAINTAINED; LOCATION(S) OF BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION; AND LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED THAT DID NOT EXIST AT THE TIME OF INSPECTION. FOLLOW-UP TO CORRECT DEFICIENCIES OR ENHANCE CONTROLS MUST ALSO BE INDICATED IN THE LOG AND DATED, INCLUDING WHAT ACTION WAS TAKEN AND WHEN.

DEWATERING
A DEWATERING PLAN IS NEEDED TO ADDRESS EXCAVATION DE-WATERING 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.

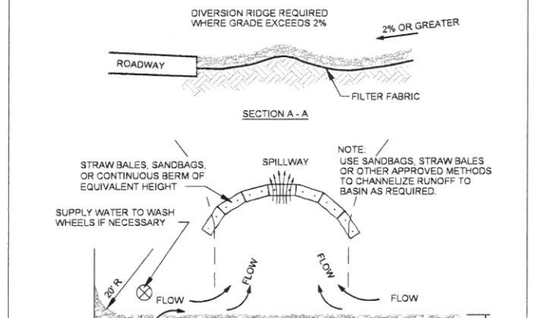


SILT FENCE
NOT TO SCALE



NOTE: REFER TO GRADING PLAN FOR DITCH WIDTH AND SIDE SLOPES

GRASSED SWALE
NOT TO SCALE

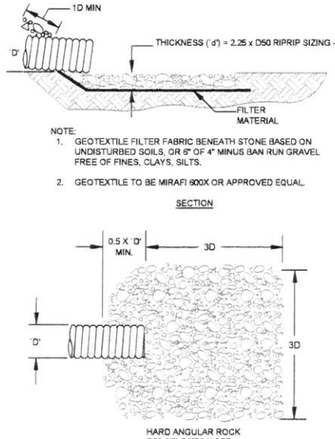


NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.

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

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

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



NOTE:
1. GEOTEXTILE FILTER FABRIC BENEATH STONE BASED ON UNDISTURBED SOILS, OR 6" OF 4" MINUS BAN RUN GRAVEL FREE OF FINES, CLAYS, SILTS.
2. GEOTEXTILE TO BE MIRAFI 600X OR APPROVED EQUAL.

SECTION

HARD ANGULAR ROCK
D50 SELECTION PER
CHART

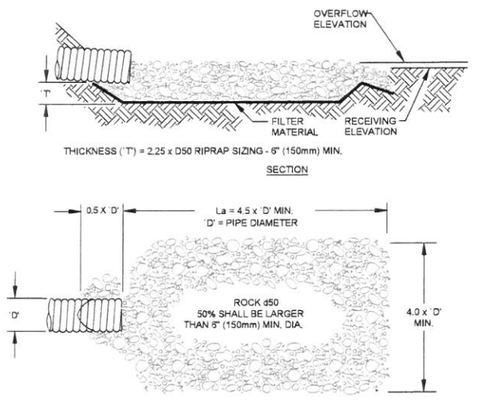
PLAN

PIPE INLET PROTECTION SIZING TABLE

PIPE SIZE (IN)	RIPRAP SIZING (D50)	LENGTH (FT)	WIDTH (FT)
6	3	2.0	1.5
12	5	3.5	3.0
15	6	4.5	3.75
18	8	5.25	4.5
24	10	7.0	6.0
30	12	8.75	7.5
36	14	10.5	9.0

NOTES:
1. IN DEFINED CHANNELS, APRON SHALL EXTEND FULL WIDTH OF BOTTOM AND ONE FOOT ABOVE MAX. HEADWATER OR UP TO BANK FULL, WHICHEVER IS LESS.

PIPE INLET PROTECTION



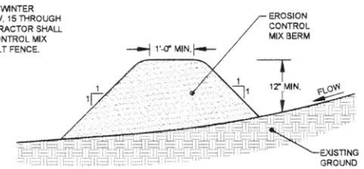
PIPE OUTLET PROTECTION SIZING TABLE

PIPE SIZE (IN)	RIP RAP SIZING (D50)	LENGTH (FT)	WIDTH (FT)
6	3	2.5	2.0
12	5	5.0	4.0
15	6	6.25	5.0
18	8	7.5	6.0
24	10	10.0	8.0
30	12	13.0	10.0
36	14	15.0	12.0

NOTES:
1. 'La' = LENGTH OF APRON. DISTANCE 'La' SHALL BE OF SUFFICIENT LENGTH TO DISSIPATE ENERGY.
2. APRON SHALL BE SET AT A ZERO GRADE AND ALIGNED STRAIGHT.
3. FILTER MATERIAL SHALL BE FILTER FABRIC (MIRAFI 600X OR APPROVED EQUAL) OR 6" (150mm) THICK MINIMUM GRADED GRAVEL LAYER.

PIPE OUTLET PROTECTION
NOT TO SCALE

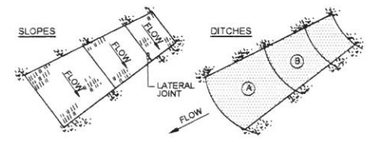
NOTE:
DURING PERIODS OF WINTER CONSTRUCTION (NOV. 15 THROUGH APRIL 15), THE CONTRACTOR SHALL INSTALL EROSION CONTROL MIX BERMS IN LIEU OF SILT FENCE.



EROSION CONTROL MIX:
EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES & 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:
- THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80% - 100% DRY WEIGHT BASIS
- PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70%.

MAXIMUM OF 95% PASSING A 0.75" SCREEN
- THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED
- LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
- SOLUBLE SALTS CONTENT SHALL BE < 4.0 mmhos/cm.
- ph SHALL FALL BETWEEN 5.0 - 8.0.

EROSION CONTROL MIX BERM
NOT TO SCALE



NOTES:
1. BURY THE TOP END OF THE MESH MATERIAL IN A 6" TRENCH AND BACKFILL AND TAMP TRENCHING SECURE END WITH STAPLES AT 6" SPACING, 4" DOWN FROM EXPOSED END.
2. FLOW DIRECTION JOINTS TO HAVE UPPER END OF LOWER STRIP BURIED WITH UPPER LAYERS OVERLAPPED 4" AND STAPLED. OVERLAP B OVER A.
3. LATERAL JOINTS TO HAVE 4" OVERLAP OF STRIPS. STAPLE 18" ON CENTER.
4. STAPLE OUTSIDE LATERAL EDGE 2' ON CENTER.
5. WIRE STAPLES TO BE MIN. OF #11 WIRE, 6" LONG & 1-1/2" WIDE.
6. USE NORTH AMERICAN GREEN DS 150 (OR APPROVED EQUAL) ON SLOPES BETWEEN 4:1-2:1. USE NORTH AMERICAN GREEN VMAX SC250 PERMANENT TURF REINFORCEMENT MAT (OR APPROVED EQUAL) ON SLOPES 2:1 AND STEEPER..

EROSION CONTROL BLANKET
NOT TO SCALE

NO.	DATE	REVISIONS	APPD BY
4	6/2/2022	MODIFIED BUILDING NO 7	
3	5/31/2022	REVISED PER FINAL 3RD PARTY REVIEW	
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

DATE: 6/2/2022
P.E.: 10167

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CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

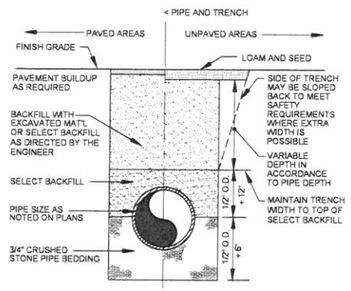
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD, GRAY, ME

SHEET TITLE:
EROSION CONTROL NOTES & DETAILS

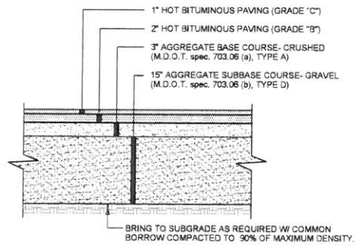
CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	AS NOTED
DESIGNED:	JDA
JOB NO:	2125
FILE:	21250.dwg
SHEET	C-3.0



TYPICAL TRENCH SECTION

NOT TO SCALE

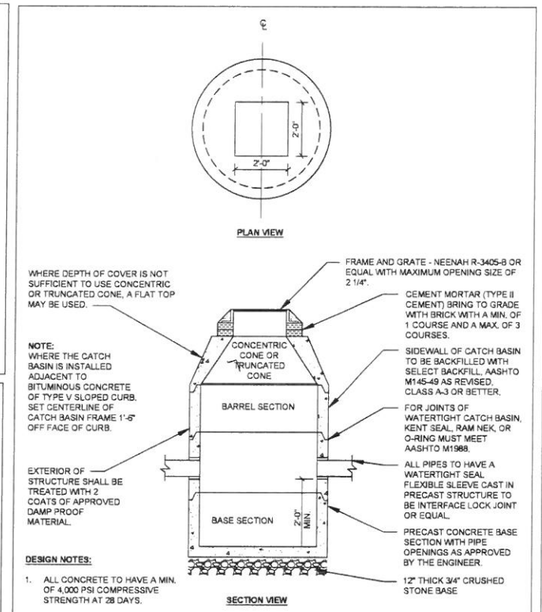


NOTES:

1. COMPACT GRAVEL SUBBASE COURSE TO 92% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

TYP. PAVED PARKING LOT SECTION

NOT TO SCALE



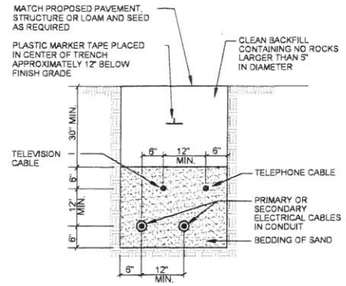
DESIGN NOTES:

1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.12 IN SQ./LF..

NOTE:
CASCADE GRATES SHALL BE INSTALLED ON GRADIENT OF GUTTER IF PROFILE GRADE EXCEEDS 5% GRATES SHALL BE DEPRESSED 2" BELOW NORMAL GUTTER GRADE UNLESS THIS DEPRESSION INTERFERES WITH TRAFFIC, PARALLEL BAR GRATES SHALL BE INSTALLED ON A LEVEL GRADIENT.

TYPICAL CATCH BASIN

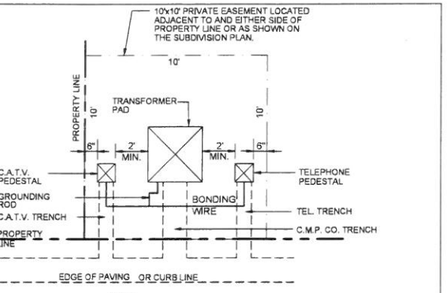
NOT TO SCALE



CABLES TO BE ENCASED IN SCHEDULE 40 PVC CONDUIT WHEN RUN BENEATH PAVED AREAS.

TYPICAL UNDERGROUND CABLE INSTALLATION

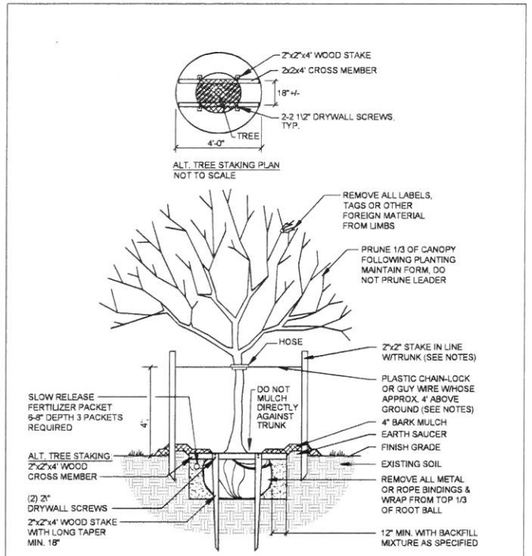
NOT TO SCALE



NOTE:
TRANSFORMER PAD AND COVER TO BE FIBERGLASS MEETING CENTRAL MAINE POWER SPECIFICATIONS.

TRANSFORMER DETAIL

NOT TO SCALE

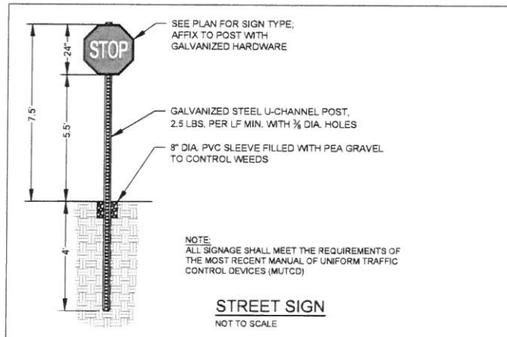


ALT. TREE STAKING PLAN
NOT TO SCALE

NOTES:
INSTALL STAKES AND GUYS TO TREES IF THE FOLLOWING APPLY:
1. THE TREE IS OF SUBSTANTIAL SIZE.
2. THE PLANTING LOCATION IS EXTREMELY WINDY, AS ON OPEN UNDEVELOPED SITES.
3. THE PLANTING LOCATION IS COMPRISED OF SAND OR OTHER LOOSE TEXTURED SOILS.
4. IF STAKES AND GUYS ARE REQUIRED, REMOVE AFTER ONE YEAR TIME.

DECIDUOUS TREES 2" TO 4" CALIPER

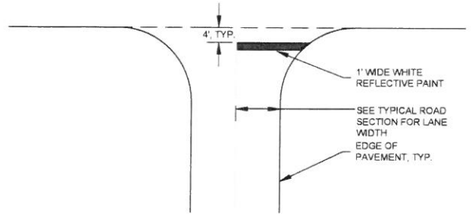
NOT TO SCALE



NOTE:
ALL SIGNAGE SHALL MEET THE REQUIREMENTS OF THE MOST RECENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

STREET SIGN

NOT TO SCALE

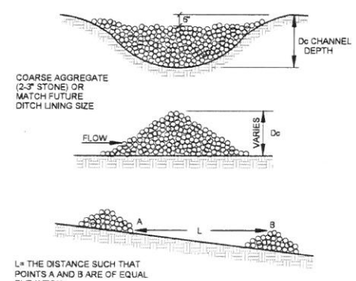


STOP BAR DETAIL

NOT TO SCALE

CONSTRUCTION NOTES:

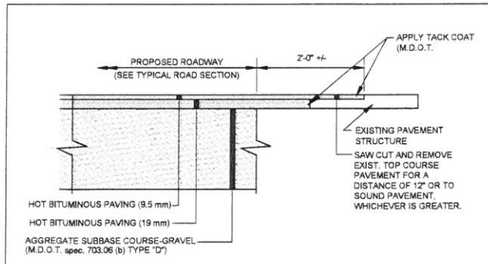
1. CHECK DAMS SHALL BE INSTALLED BEFORE RUNOFF IS DIRECTED TO THE SWALE.
2. THE AREA AROUND EACH CHECK DAM SHALL BE FREE OF DEBRIS.
3. THE MAXIMUM HEIGHT OF A STONE CHECK DAM SHALL BE 2 FEET WITH A 6-INCH DEPRESSION AT ITS CENTER FRO OVERFLOW. THE EDGES OF THE DAM SHALL BE KEYED INTO THE EMBANKMENTS TO PREVENT SIDE EROSION.
4. MECHANICAL PLACEMENT FOLLOWED BY HAND PLACEMENT WILL BE NECESSARY TO ACHIEVE A TIGHT MASS WITHIN THE CHANNEL AND ENSURE THAT THE CENTER OF THE DAM IS LOWER THAN THE EDGES.
5. ANY EROSION DOWNGRADIENT OR AROUND THE EDGES OF THE STONE CHECK DAMS SHALL BE CORRECTED IMMEDIATELY.
6. THE CHECK DAM MAY BE REMOVED WHEN THE SWALE IS STABILIZED WITH VEGETATION (90% COVERAGE).



L= THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

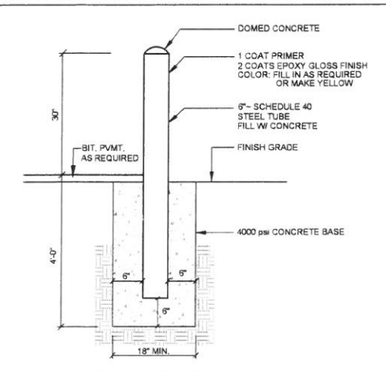
STONE CHECK DAM

NOT TO SCALE



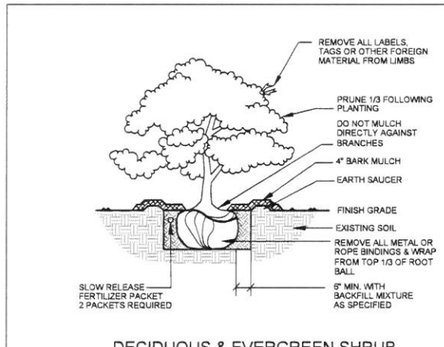
TYPICAL PAVEMENT JOINT

NOT TO SCALE



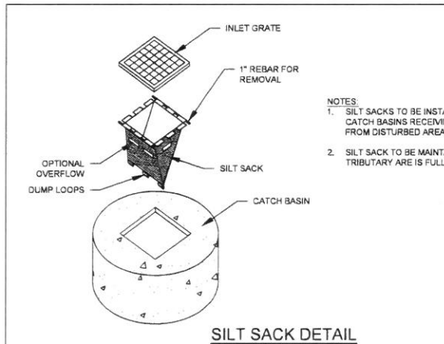
METAL BOLLARD

NOT TO SCALE



DECIDUOUS & EVERGREEN SHRUB

NOT TO SCALE



NOTES:
1. SILT SACKS TO BE INSTALLED IN ALL CATCH BASINS RECEIVING RUNOFF FROM DISTURBED AREA
2. SILT SACK TO BE MAINTAINED UNTIL TRIBUTARY ARE IS FULLY STABILIZED

SILT SACK DETAIL

NOT TO SCALE

[redacted]

DATE: 6/2/2022
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY
4	6/2/2022	MODIFIED BUILDING NO. 7	
3	5/31/2022	REVISED PER FINAL 3RD PARTY REVIEW	
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04101

41 CAMPUS DRIVE
SUITE 301
NEW GLOUCESTER, ME 04260

OFFICE: (207) 926-5111
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TERRADYN CONSULTANTS, LLC
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD GRAY, ME

SHEET TITLE:
SITE DETAILS

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	AS NOTED
DESIGNED:	JDA
JOB NO:	2125
FILE:	21250.dwg
SHEET	C-3.1

CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.

2. 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 WORK.

3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.

4. 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.

5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.

6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.

7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.

8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.

9. 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 2016 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.

10. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. 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.

11. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. 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 TOWN OR CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.

12. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. 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.

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 SAWCUT 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 TOWN AS APPLICABLE.

17. THE PROPOSED LIMITS OF CLEARING SHOWN HEREON ARE APPROXIMATE BASED UPON THE PROPOSED LIMITS OF SITE GRADING. THE APPLICANT RESERVES THE RIGHT TO PERFORM NORMAL FOREST MANAGEMENT ACTIVITIES OUTSIDE OF THE CLEARING LIMIT AS SHOWN. TREE REMOVAL OUTSIDE OF THE LIMITS OF CLEARING MAY BE NECESSARY TO REMOVE DEAD OR DYING TREES OR TREE LIMBS. THIS REMOVAL IS DUE TO POTENTIAL SAFETY HAZARDS AND TO PROMOTE PROPER FOREST GROWTH.

18. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.

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 COMPLETION.

20. 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.

21. 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 JUDGMENT OF TERRADYN CONSULTANTS, LLC.

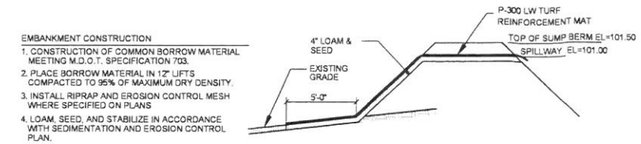
22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.

23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.

24. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.

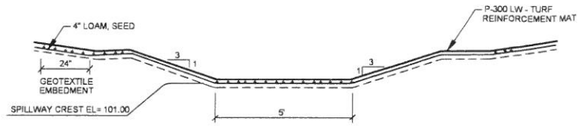
25. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.

26. 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.



FOREBAY SPILLWAY SECTION - FILTER BASIN

NOT TO SCALE



FOREBAY BERM SPILLWAY CROSS-SECTION

NOT TO SCALE

CONSTRUCTION PHASE NOTES:

Construction Sequence: The soil filter media and vegetation must not be installed until the area that drains to the filter has been permanently stabilized with pavement or other structure, 90% vegetation cover, or other permanent stabilization unless the runoff from the contributing drainage area is diverted around the filter until stabilization is completed.

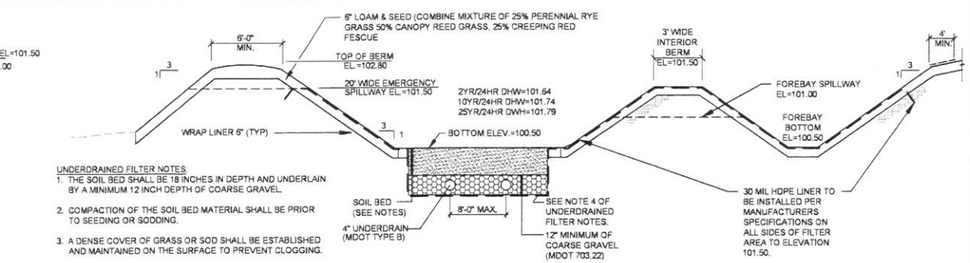
Compaction of Soil Filter: Filter soil media and underdrain bedding material must be compacted to between 90% and 92% standard proctor. The bed should be installed in at least 2 lifts of 9 inches to prevent pockets of loose media.

Construction Oversight: Inspection by a professional engineer will occur at a minimum:

- After the preliminary construction of the filter grades and once the underdrain pipes are installed but not backfilled,
- After the drainage layer is constructed and prior to the installation of the filter media,
- After the filter media has been installed and seeded. Bio-retention cells must be stabilized per the provided planting scheme and density for the canopy coverage of 30 and 50%.
- After one year to inspect health of the vegetation and make corrections, and
- All the material used for the construction of the filter basin must be confirmed as suitable by the design engineer. Testing must be done by a certified laboratory to show that they are passing DEP specifications.

Testing and Submittals: The contractor shall identify the location of the source of each component of the filter media. All results of field and laboratory testing shall be submitted to the project engineer for confirmation. The contractor shall:

- Select samples for sampling of each type of material to be blended for the mixed filter media and samples of the underdrain bedding material. Samples must be a composite of three different locations (grabs) from the stockpile or pit face. Sample size required will be determined by the testing laboratory.
- Perform a sieve analysis conforming to STM C136 (Standard Test Method for Sieve Analysis of fine and Course Aggregates 1996A) on each type of the sample material. The resulting soil filter media mixture must have 8% to 12% by weight passing the #200 sieve, a clay content of less than 2% (determined hydrometer grain size analysis) and have 10% dry weight of organic matter.
- Perform a permeability test on the soil filter media mixture conforming to ASTM D2434 with the mixture compacted to 90-92% of maximum dry density based on ASTM D698.

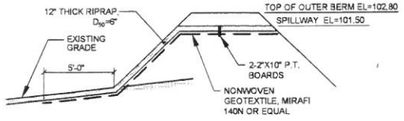


UNDERDRAINED FILTER NOTES:

1. THE SOIL BED SHALL BE 18 INCHES IN DEPTH AND UNDERLAIN BY A MINIMUM 12 INCH DEPTH OF COARSE GRAVEL.
2. COMPACTION OF THE SOIL BED MATERIAL SHALL BE PRIOR TO SEEDING OR SODDING.
3. A DENSE COVER OF GRASS OR SOD SHALL BE ESTABLISHED AND MAINTAINED ON THE SURFACE TO PREVENT CLOGGING.
4. PLACE NON WOVEN GEOTEXTILE FABRIC (MIRIFI S600 OR APPROVED EQUAL) ON ALL SIDES AND BOTTOM OF SOIL & GRAVEL FILTER AREA.
5. SOIL FILTER BED SHALL MEET THE SPECIFICATIONS SHOWN IN SOIL FILTER MEDIA TABLE.

FILTER BASIN

NOT TO SCALE

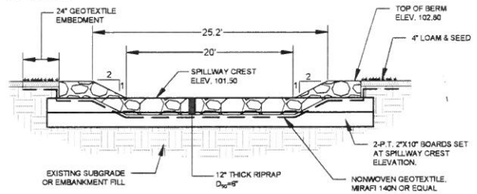


EMBANKMENT CONSTRUCTION

1. CONSTRUCTION OF COMMON BORROW MATERIAL MEETING M.D.O.T. SPECIFICATION 703.
2. PLACE BORROW MATERIAL IN 12" LIFTS COMPACTED TO 95% OF MAXIMUM DRY DENSITY.
3. INSTALL RIPRAP AND EROSION CONTROL MESH WHERE SPECIFIED ON PLANS
4. LOAM, SEED, AND STABILIZE IN ACCORDANCE WITH SEDIMENTATION AND EROSION CONTROL PLAN.

EMERGENCY SPILLWAY SECTION - FILTER BASIN

NOT TO SCALE



EMERGENCY SPILLWAY CROSS-SECTION

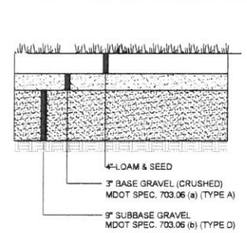
NOT TO SCALE

SOIL FILTER MEDIA TABLE

FILTER MEDIA	MIXTURE BY VOLUME	SPECIFICATION
SAND	50%-55%	MEDOT SPEC. 703.01 FINE AGGREGATE FOR CONCRETE
TOPSOIL	20%-30%	LOAMY SAND TOPSOIL WITH MINIMAL CLAY CONTENT AND BETWEEN 15-25% FINES PASSING THE #200 SIEVE.
MULCH	20%-30%	MODERATELY FINE, SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 5% PASSING THE #200 SIEVE

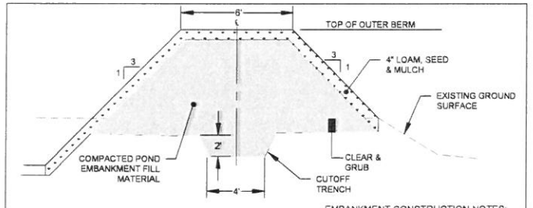
GRASSED UNDERDRAINED SOIL FILTER BASIN DETAILS

NOT TO SCALE



STABILIZED GRASS STORMWATER AREA & POND ACCESS CROSS-SECTION

NOT TO SCALE



EMBANKMENT FILL MATERIAL:

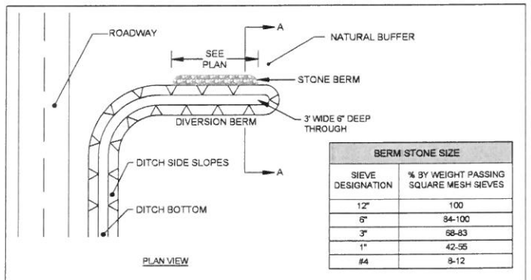
FILL MUST BE FREE OF FROZEN SOIL, ROCKS OVER SIX INCHES, AND SOD, BRUSH, STUMPS, TREE ROOTS, WOOD, OR OTHER PERISHABLE MATERIALS. EMBANKMENT FILLS LESS THAN 10 FEET IN FILL HEIGHT MUST BE COMPACTED USING COMPACTION METHODS THAT WOULD GUARANTEE A FILL DENSITY OF 90% OF THE MAXIMUM DENSITY AS DETERMINED BY STANDARD PROCTOR (ASTM-698). ALL EMBANKMENT FILLS MORE THAN 10 FEET IN FILL HEIGHT MUST BE COMPACTED TO 90% OF THE MAXIMUM DENSITY AND MUST HAVE THEIR DENSITY VERIFIED BY FIELD DENSITY TESTING.

EMBANKMENT CONSTRUCTION NOTES:

1. CONTRACTOR SHALL REMOVE ALL TOPSOIL AND ORGANIC MATERIAL FROM EMBANKMENT AND POND CONSTRUCTION AREA.
2. SCARIFY SUBGRADE TO ESTABLISH INTERFACE FOR ALL FILLS.
3. COMPACT IN 12" LIFTS TO 92% OF MAXIMUM DRY DENSITY.
4. INSTALL RIPRAP AND EROSION CONTROL MESH WHERE SPECIFIED.
5. LOAM, SEED & STABILIZE IN ACCORDANCE WITH SEDIMENTATION AND EROSION CONTROL PLAN & NOTES.

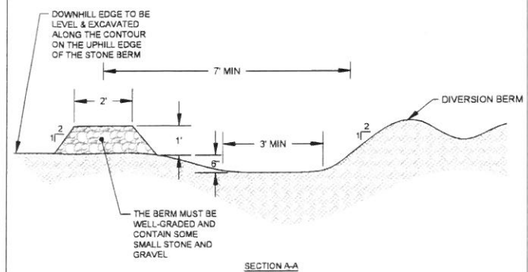
POND EMBANKMENT DETAIL

NOT TO SCALE



PLAN VIEW

BERM STONE SIZE	
SIEVE DESIGNATION	% BY WEIGHT PASSING SQUARE MESH SIEVES
12"	100
6"	84-100
3"	58-83
1"	42-55
#4	8-12



SECTION A-A

CONSTRUCTION & POST-CONSTRUCTION PHASE NOTES:

Buffers - General

General forest use means that the land must be maintained with a forest cover and undisturbed soil, duff layer ground cover vegetation, and understory vegetation. Timber may be harvested on a selective basis provided that no more than 40% of the volume is harvested within any 10 year period.

Stone Bermed Level Lip Spreader

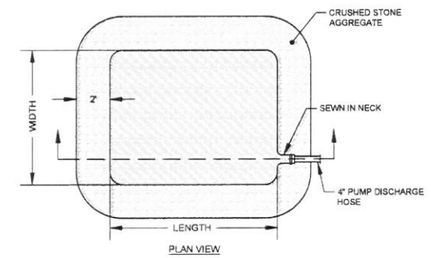
Inspections by a professional engineer shall consist of weekly visits to the site to inspect each level spreaders construction, stone berm material and placement, settling basin from initial ground disturbance to final stabilization of the level spreader.

Road Ditch Turnouts

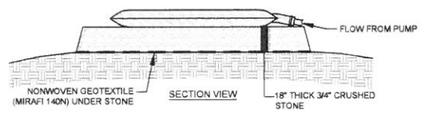
Inspections by a professional engineer shall consist of weekly visits to the site to inspect each turnout construction, turnout's stone berm material and placement, from initial ground disturbance to final stabilization of the level spreader.

TYPICAL DITCH TURNOUT BUFFER

NOT TO SCALE



PLAN VIEW



NOTES:

1. DIRTBAG BY ACF ENVIRONMENTAL
2. SEAMS MUST BE HIGH STRENGTH DOUBLE STITCHED "J" SEAMS.
3. CONSTRUCTION DEWATERING OF TURBID WATER SHALL BE PUMPED THROUGH A DIRTBAG AND RELEASED THROUGH A VEGETATED BUFFER AT LEAST 50' UPSTREAM OF WETLAND AREAS.
4. THE LOCATION OF THE DIRTBAG SHALL BE DETERMINED BY THE CONTRACTOR, BUT SHALL IT SHALL NOT BE SITED IN CRITICAL AREAS, SUCH AS WETLANDS.

DIRTBAG DETAIL

NOT TO SCALE

NO.	DATE	REVISIONS	APP'D BY
4	6/2/2022	MODIFIED BUILDING NO. 7	
3	5/31/2022	REVISED PER FINAL 3RD PARTY REVIEW	
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

DATE: 6/2/2022
P.E.: 10167

565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04101

41 CAMPUS DRIVE
SUITE 301
NEW GLOUCESTER, ME 04260

OFFICE: (207) 926-5111
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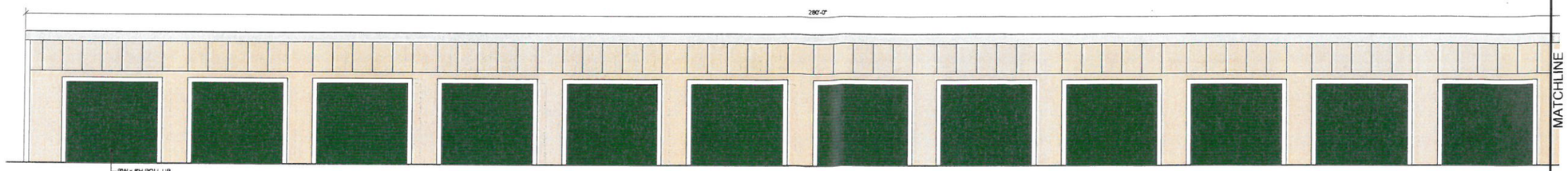
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: GRAY SELF STORAGE
PORTLAND ROAD, GRAY, ME

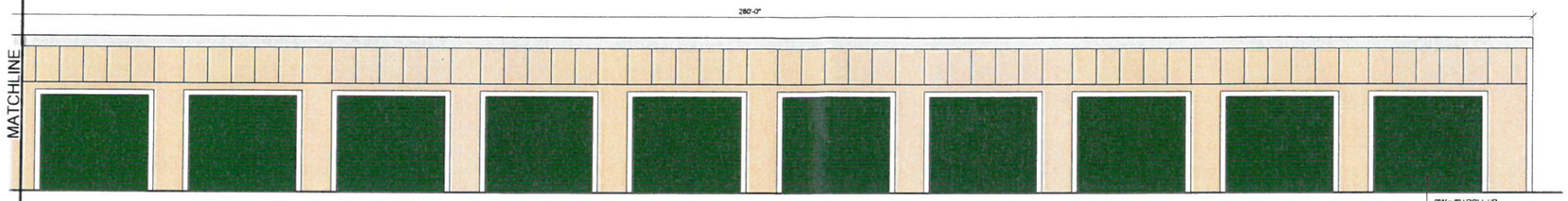
SHEET TITLE: DETAILS & NOTES

CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

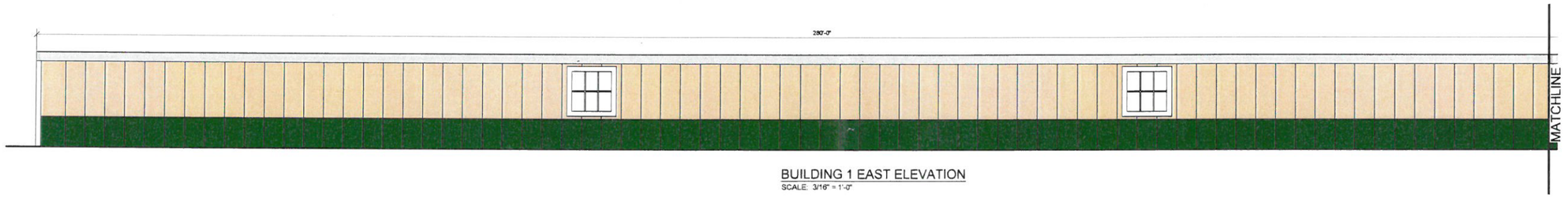
DATE:	11/10/2021
SCALE:	AS NOTED
DESIGNED:	JDA
JOB NO:	2125
FILE:	21250.dwg
SHEET	C-3.2



BUILDING 1 WEST ELEVATION
SCALE: 3/16" = 1'-0"



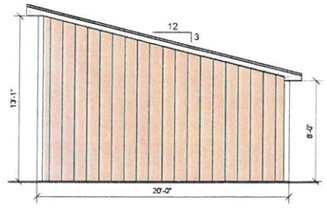
BUILDING 1 WEST ELEVATION
SCALE: 3/16" = 1'-0"



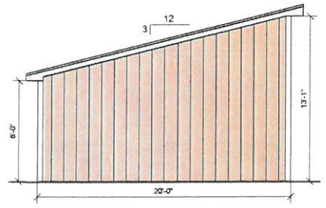
BUILDING 1 EAST ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 1 EAST ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 1 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 1 NORTH ELEVATION
SCALE: 3/16" = 1'-0"

DATE: 5/2/2022
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY
4	6/22/2022	MODIFIED BUILDING NO. 7	
3	5/1/2022	REVISED PER FINAL 3RD PARTY REVIEW	
2	3/1/2022	REVISED DOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102

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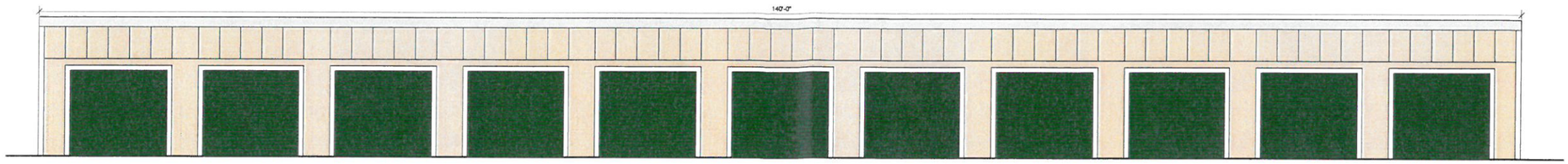
PROJECT
GRAY SELF STORAGE
PORTLAND ROAD, GRAY, ME

SHEET TITLE
BUILDING 1 ELEVATIONS

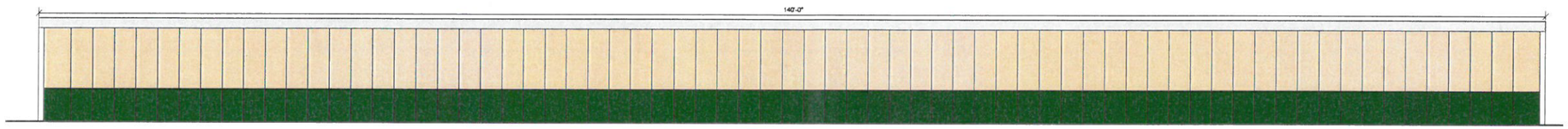
CLIENT
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	3/16" = 1'-0"
DESIGNED:	JDA
JOB NO.	2125
FILE:	2125elev.dwg

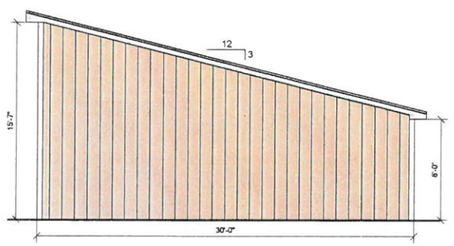
SHEET A-1.1



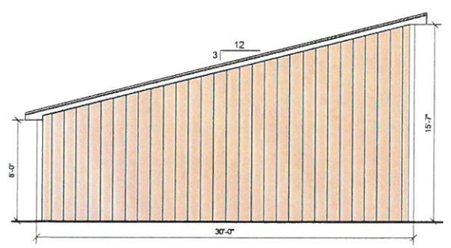
BUILDING 2 & 3 WEST ELEVATION
BUILDING 4 & 5 EAST ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 2 & 3 EAST ELEVATION
BUILDING 4 & 5 WEST ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 2 & 3 NORTH ELEVATION
BUILDING 4 & 5 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 2 & 3 SOUTH ELEVATION
BUILDING 4 & 5 NORTH ELEVATION
SCALE: 3/16" = 1'-0"

DATE: 5/2/2022
P.E. 10167

NO.	DATE	REVISIONS	APP'D BY
4	6/2/2022	MODIFIED BUILDING NO. 7	
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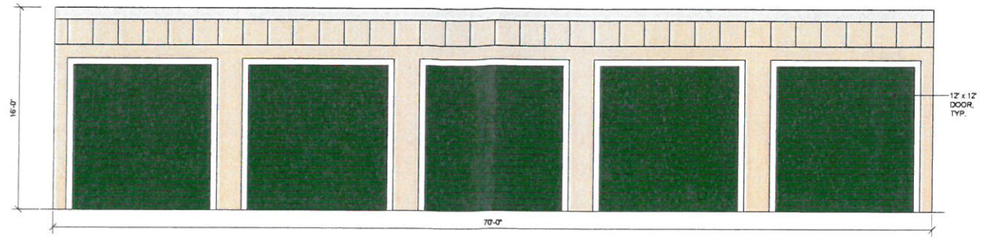
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: GRAY SELF STORAGE
PORTLAND ROAD, GRAY, ME

SHEET TITLE: BUILDING 2-5 ELEVATIONS

CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

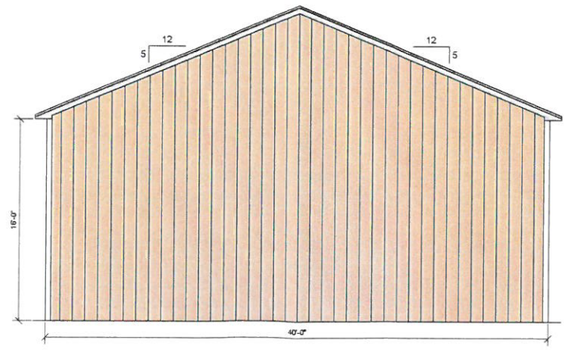
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SCALE:	3/16" = 1'-0"
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125elev.dwg
SHEET	A-1.2



BUILDING 7 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 7 NORTH ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 7 EAST AND WEST ELEVATION
SCALE: 3/16" = 1'-0"

DATE: 6/2/2022
P.E. 10167

NO.	DATE	REVISIONS	APP'D BY
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CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: GRAY SELF STORAGE
PORTLAND ROAD, GRAY, ME

SHEET TITLE: BUILDING 7 ELEVATIONS

CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11/10/2021
SCALE:	3/16" = 1'-0"
DESIGNED:	JDA
JOB NO:	2125
FILE:	2125elev.dwg
SHEET	A-1.3

TERRADYN
CONSULTANTS, LLC

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 310
Portland, ME 04101

May 31, 2022 2125

Ms Kristen Muszynski, Town Planner
Town of Gray Planning Department
Henry Pennell Municipal Complex
24 Main Street
Gray, ME 04039

Final Site Plan Application
Gray Self Storage
119 Portland Road, Gray, ME

Kristen,

Terradyn Consultants LLC, on behalf of Beth Cureton, is pleased to submit additional and updated information in support of the previously filed site plan application for the proposed Gray Self Storage Project.

Project Summary
The development parcel is approximately 4.1 acres and is shown as lots 31-10 & 31-14 on the Town of Gray Tax Map 59 and is approximately located at 119 Portland Road. The property is located within the Commercial (C) Zone. The properties will be merged into one property upon final approval.

The applicant is proposing to create a self-storage facility that will feature seven self-storage buildings along with the associated maneuvering area, utility infrastructure, landscaping and stormwater facilities. The buildings provide a total of 30,800 SF of indoor storage. Building #7 will be a climate-controlled building where access to units will be from an internal hallway. Four parking spaces have been added adjacent to this building. Facility rentals will be managed by a website. No rental office is proposed onsite which means that the facility does not require any water, sewage or employee parking facilities.

The applicant is proposing to construct metal buildings featuring earth tone colors. The applicant is currently planning on tan buildings with hunter green doors and trim. The side of Building 1 that faces Route 100 will be broken up with no fewer than four faux windows. Sixteen trees will be planted along the front setback to provide additional screening. There will be a new sign adjacent to the entrance that will conform to all requirements of the land use ordinance. It will be externally lit.

The project will be accessed by a new driveway off Portland Road (Route 100). The driveway leads to leads to a front gate that is approximately 100' off the edge of the road. This distance provides more than enough stacking opportunity. The gate will be controlled with a keypad mechanism. The applicant will provide the access code to the Gray Fire & Rescue Department. A black chain link security fence will surround the front & southerly sides of the development area.

Almost all of the development will drain to a new under-drained filter basin. The filter basin also provides control of the peak rate of runoff to below existing levels. Half of the roof area for Buildings 1, 6 & 7 will drain to a filter strip. The design meets the MDEP & Town of Gray ordinance requirements. A full stormwater analysis was previously provided. We're hopeful that Maine Department of Environmental Protection will have completed their review of the project Stormwater Permit Application and NRPA Tier 1 Wetland Alteration Permit prior to the meeting.

Changes Since Last Meeting

We had a public hearing last November. There have been a handful of significant changes to both the Town Land Use Ordinance, our permitting status with MDEP and the associated plan set. The changes are outlined below:

1. The Town Council voted to allow multiple self-storage buildings on one property. This change now clears the way for the Planning Board to approve this project if they see fit.

2. The Town Council removed outdoor storage as an allowed use for this property so that component has been removed from the project and replaced with a seventh building. The seventh building will be a climate-controlled building where users will need to enter the building to access their unit. We've added four parking spaces adjacent to this building to facilitate loading & unloading.

3. We ran into a complication with the MDEP and the classification of the wetlands on site. MDEP ruled that all wetlands located on the northeastern property corner were classified as wetlands of special significance since a portion of them were within 250' of the mapped boundary of the wetlands of special significance that are located on the opposite side of the road. After several months of discussion, they agreed to review the project as was previously submitted. Unfortunately, this means that we still don't have final approval for our MDEP Stormwater Permit or NRPA Tier 1 Wetland Alteration Permit.

4. Three additional evergreen trees have been added to the southeast corner of the property that will help shield the view of the site as vehicles travel north on Route 100.

5. The applicant has agreed to add four faux windows to the Route 100 facing side of Building #1 to help break up the building facade. The applicant feels that the view of the building will already be broken up by the sixteen trees that are proposed to be planted as well as the preservation of the existing trees in the roadside wetland area.

Comment Responses:

We have answered all previous engineering and staff comments and have provided detailed responses below. The request/comment is shown below with our response in *italics.*

1. The post development watershed map shows all building roof runoff tributary to the soil filter. Based upon the submitted photos of storage buildings, the roofs are gable roofs, therefore half of buildings #1 and #6 are not tributary to the filter.

Response: We've updated the stormwater report & associated post development watershed map to show the removal of the outdoor storage area. In the process, we also added the roof drain filter strips to the calculations & plan. Building #7 also features a roof drain filter strip. See details on Sheet C-2.0.

2. The outlet of the proposed soil filter underdrain pipe at the Portland Road ditch is 96.80'. The road ditch in the vicinity of this project is extremely flat and does not drain well.

   Response: We adjusted the stormwater pond to alleviate the issue of the underdrain outlet & the roadside ditch. The pond was raised just enough to allow the underdrain to flow to to the level spreader that is adjacent to the stormwater pond.

3. The pond test pit, MDEP stormwater permit application, NRPA Permit application, Public Works review of underdrain outlet, are pending.

   Response: We are still waiting for final sign off from the MDEP. We've provided copies of those applications for your records. The pond test pit information is now included in the stormwater report.

4. The pond liner should be installed to the elevation of the water quality volume (WQV) at a minimum. The liner elevation is listed as 100.5, the stormwater report lists the WQV provided at elevation 101.

   Response: The pond liner has been extended up to the water quality elevation. That elevation is now 101.5. See detail on Sheet 3.2.

5. Provide revised Hydrocad report with 1.5" orifice as controlling outlet.

   Response: The orifice has been reduced to 1" and added to the pond as a controlling outlet (secondary outlet). See stormwater calculations.

6. The response to comments lists a drawdown analysis as provided. The analysis was not included in the revised application information that we received.

   Response: See Attachment 4 of the stormwater report for the drawdown analysis.

7. The level lip spreader at the pond outlet lists the storm drain outlet invert as 98.0 and the level spreader as 98.2. The level lip should be at 98.5 based on the detail.

   Response: See Sheet 2.0 of the plan set. The underdrained outlet invert & lip of the level spreader has been set at 98.2. The detail of the level spreader has been modified for clarity.

8. The plan callout for the level spreader length is 28', the detail lists a length of 20'. Revise the detail. Add a table if the two level spreaders are different lengths.

   Response: The detail has been revised as requested. The level spreader is now shown to be 20' wide. The 10 year flow is approximately 3.0 cfs. Using the standard sizing of 1 foot per every 0.25 cfs, that means that a minimum width of 12' would be required. 20' is more than enough.

9. Based on discussions with the Director of Public Works, the underdrain soil filter underdrain outlet should discharge to a level lip spreader that allows sheet flow to the road ditch rather than the direct discharge as currently shown.

   Response: The pond was redesigned to allow the soil filter underdrain outlet to flow to the adjacent level spreader. It no longer outlets to the road ditch.

10. Buildings 1 & 6 show a roof drain filter strip along one side. The filter strip detail shows a underdrain/foundation drain. Where will the underdrain/foundation drain outlet? Also, do the other buildings also have a foundation drain, and if so, where will they outlet?

    Response: See Sheet C-2.0 for underdrain outlet locations. The applicant does not know if drains will be necessary for the remainder of the pads. We've added a note to C-2.0 indicating that foundation drains cannot drain to the stormwater pond and must be outlet to a non-wetland area with a properly sized riprap outlet.

11. Provide additional detail for the sediment forebay. Will the berm between the forebay and underdrain filter area be constructed of compacted soil where water will flow up and over the top, or will it be stone where the water will flow through? If the former, an erosion control matting or some other type of permanent erosion control be provided to prevent erosion.

    Response: Additional detail has been added to the Underdrained Soil Filter Detail on Sheet 3.2, as requested.

<u>Comments per town staff:</u>

1. Public Works Director Alec Dodd shares the engineer's concerns regarding the underdrain discharge directly piped into the road ditch. He suggests a level lip spreader, to be located at the interior of the property, to disperse the discharge away from the road. In periods of heavy rain, particularly when the ground is frozen, stormwater overflows onto the road in this area, creating an ice hazard on the road, so a direct outlet to the existing ditch would increase that potential.

Response: The pond has been re-designed to remove the need to outlet the underdrain to the ditch.

12. The project uses two parcels, so the lots need to be merged into one to adhere to setback and siting requirements.

    Response: Comment acknowledged. The applicant agrees that the parcels can be merged into one as of final approval.

13. Most notably, the zoning ordinance Sect. 402.6.2 G-H requires that only one principal building may be located per lot. Additionally, a self-storage facility is defined as "*a* structure containing separate storage spaces of varying size, leased or rented on an individual basis." In conferring with the town attorney on these points, she advised that we should pursue an ordinance change to amend the language, as the ordinance does not currently allow multiple buildings in the definition of a self-storage facility or exempt such facilities from the single principal building requirement. Town staff is pro-actively pursuing a timeline for an amendment to address this matter.

    Response: The ordinance now allows multiple buildings for this use. However, outdoor storage is not an allowed use, so it has been removed from the plan.

14. Buffering/Screening – particularly evergreens - should be considered for the proposed stormwater pond as well as along the property lines to screen the view. The existing trees may be sufficient on North side. South side of property has no buffering proposed. Front has mostly deciduous, with two evergreen plantings listed out front. The board may wish to consider requiring two-level landscaping for the rear buildings due to the property grade. Additionally, the board may want to consider green fencing, not black as currently proposed.

    Response: Additional trees have been added to the plan in the requested locations.

15. Parking is not addressed on the site plan. Self-storage facility is not a use specifically provided for in the minimum parking standards table in the zoning ordinance, but it advises applying standards of a similar use. (402.10.11 9 D) For "warehouse" use, .7 spaces are required per 1,000 sf., which would be 19 spaces for this site.

    Response: No parking is required for buildings 1-6 as discussed with the planning board, but Building 7 may be an air conditioned building with units accessed from in internal walkway. The building is 2,800 SF, so 1.96 spaces are required. The plan now shows 3 spaces adjacent to the building.

16. Pedestrian ways within the site are not addressed. Zoning 402.10.11 C requires that the plan must provide for a system of pedestrian ways within the development appropriate to the type and scale.

    Response: The planning board agreed that no pedestrian way was necessary.

17. The plan does not include a fire protection system.

    Response: The planning board indicated that no fire protection system was necessary since the risk was to property and not people.

#

William C. Haskell, P.E. of Gorrill Palmer provided these additional comments based on our final submittal materials:

#

1. Receipt of MDEP permits should be made a condition of approval.

   Response: Comment acknowledged

2. The foundation drain note which was stated to be on plan sheet C-2.0 was not found on the plan.

   Response: The note is in the upper right-hand corner of the page and states: Foundation Drain Note: Foundation drains shall not drain to the stormwater pond. Outlet of drain to flow to a non-wetland area and be armored with a properly sized riprap outlet.

3. The 1" orifice should be turned off as an outlet for the spillway analysis in Hydrocad.

   Response: Updated Emergency Spillway Calculations have been attached. See Attachment 3.

4. MDEP Chapter 500 Appendix E.3 states that the principal spillway must control the maximum flows without activating the emergency spillway. The submitted hydrocad utilizes the spillway for flow control for the 2, 10, and 25-year storms.

   Response: MDEP does not require a separate emergency spillway if a spillway is already used for the primary flow control device. I forwarded an email directly to you that verifies this position.

5. The parking space abutting building 6 may be difficult to use given there is now buffer to the building. We would recommend adding an additional 3' to 4' space between the edge of the parking space and the end of the building.

   Response: We re-designed the area. One parking space was removed and some green space was added between the parking area and both adjacent buildings. Furthermore, we defined the entrance location to Building 7.

6. The access door location for building 7 should be shown along with the accessible route from the ADA parking space to the door.

   Response: We defined the entrance location. Based on the spot grades, you can see that all slopes are less than 2% from the handicapped space and access to the front door.

Kristen Muszynski, Community Planner provided these additional comments based on our final submittal materials:

1. Evidence of financial means (this was to be submitted "under separate cover" per last submittal; I don't see it as part of this submittal. This is typically just a letter from the applicant's financial institution confirming sufficient funds to complete the proposed project.

   Response: It is my understanding that the applicant has the funds to complete the project in his bank account. It is also my understanding that he wants to provide this information directly to the planner outside in hopes of keeping his personal account information private.

2. Building façade drawings. We have no front/sideview mockups and no elevations; only images of other "similar" buildings in old packet, and no front/side of the new building shown. The narrative states that at least four faux windows will be on the face of building #1; an image of this would be helpful for the board. Information about the building materials (siding/roofing) would also be helpful. The PB chairman had asked for renderings of the buildings, with the colors and the landscaping shown, at the November 2021 meeting. Building #1 facing the road will be of particular importance for review.

   Response: We submitted façade drawings in one of our previous submissions, but we have updated them with the windows and attached them here for your convenience. We were unable to find someone to prepare a rendering of the building with trees within the applicant's budget. Based on our recollection of the meeting, we don't believe it was required. The applicant is to save & plant a significant amount of trees in the area between Building 1 and Route 100. See Attachment 4.

3. A couple of other items: There does not appear to be any information about the lighting, other than the siting of building lights as shown on the plan. Can you provide detail on the type of lighting units and their reach? It looks like there are none on the road side of Building #1, so no light will be going out onto the road other than from the sign, correct? Are the lights on at all times or triggered by motion? Can you speak to their direction? (The town is moving toward a "dark skies" ordinance and is looking to discourage any upward pointing lights).

   Response: We submitted a photometrics plan previously. We've updated it to include Building 7. All lights will feature full cut off fixtures, which means then shine down toward

the ground. There are no building lights on the roadside of Building 1. The sign is externally lit. The applicant is considering motion-sensored lighting. See Attachment 5

4. The fire chief has raised concerns about the turning radii around the buildings. Can you please provide turning templates for the board's review, based on a fire truck that is 44.5 feet long with a wheelbase of 20.5 feet?

   Response: We'd previously submitted a turning template but have attached it here for your convenience. The fire truck can easily maneuver through the site. See Attachment 6.

5. I also do not see any information in the original or new submittal regarding whether or not the site is impacted by any flood zone or wildlife habitat, if you could please add that information. If none, it could be included as a line in the intro "project summary" narrative.

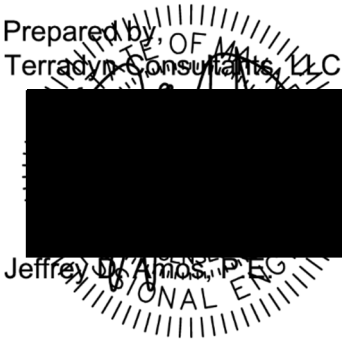
   Response: The property is not located within a flood zone. I've attached a portion of Community Panel 230048 0015A. The site is not located within any environmentally sensitive area. It is sandwiched between Route 100 and the turnpike. We've attached maps that show that the site is not located within a Deer Wintering Area nor does it contain anything included in the Beginning with Habitat database of engendered plants. The project is located within 250' of a wading bird & waterfowl habitat. This was the primary issue with the delay in MDEP permitting. MDEP is now comfortable with our impacts to the portion of wetlands on our property that are within 250 of the area because it is separated by Route 100. All three maps are included in Attachment 7.

#

The following items are attached:

- Attachment 1 – Updated Stormwater Report Narrative
- Attachment 2 – Conditional Use Criteria
- Attachment 3 – Updated Emergency Spillway Calculation
- Attachment 4 – Building Elevations
- Attachment 5 – Photometrics Plan
- Attachment 6 – Turning Template Exhibit
- Attachment 7 – Site Environmental Maps
- Attachment 8 - Engineers Cost Estimate

Prepared by,
Terradyn Consultants, LLC



Jeffrey D. Amos, P.E.

Revised 4-1-2022

STORMWATER MANAGEMENT PLAN

Gray Self Storage
Gray, Maine

The following Stormwater Management Plan has been prepared for the Gray Self Storage Project to evaluate stormwater runoff and erosion control for the proposed self-storage project to be located at 986 Portland Road in Gray, Maine.

Site Calculations

Total Property Area	4.1 Ac (+/-)
Total Project Impervious Area	1.51 Ac
Total Developed Area	2.04 Ac

Existing Conditions

The development parcel is located on the west side of Portland Road, near 119 Portland Road. The Maine Turnpike is located along the back property line. See attached Figure 1: USGS Quadrangle Map. The development parcel is approximately 4.1 acres and is shown as lots 31-10 & 31-14 on the Town of Gray Tax Map 59. The property contains an old driveway that connects Portland Road to a small <10,000 SF cleared area that is located directly adjacent to the neighboring commercial property to the south. The rest of the property is undeveloped forest & wetland areas. See attached Figure 2: Aerial Map.

The property drains to the Portland Road drainage system. The southern edge of the property drains to a culvert that located at the southeast corner of the property. This location is modeled as Study Point #1 in this report. The remainder of the site drains to a wetland system that is located on the northeast corner of the property. This corner is modeled as Study Point #2. Both areas drain across Portland Road where they're intercepted by Wiggins Brook before flowing into the Pleasant River.

Flooding

The development area is not located within an area of flood hazard according to the Federal Insurance Rate Map 230048 0015 A. See Figure 3: FEMA Floodmap.

Modeling Assumptions

The onsite stormwater facilities were sized utilizing the USDA Soil Conservation Service (SCS) TR-20 Runoff Simulation Model, as contained in the HydroCAD computer software program (Version 9.0). Runoff curve numbers were determined for each direct watershed by measuring the area of

each hydrologic soil group within each type of land cover. Weighted curve numbers were then calculated using curve numbers for various cover types and hydrologic soil groups, assuming "good" conditions as defined in U.S Soil Conservation Service (SCS) publications. Times of concentration and travel times were determined from site topographic maps in accordance with SCS procedures. A maximum length of 150 feet was used for sheet flow.

All of the watersheds' peak runoff rates were analyzed for the 2, 10, and 25-year frequency, 24-hour duration storm events. A Type III rainfall distribution was applied to these storms. The rainfall amounts for Cumberland County are as follows:

Storm Frequency Precipitation (in./24 hr)	
2-year	3.1
10-year	4.6
25-year	5.8

Onsite Soils

The area soils were delineated from the Cumberland County Medium Intensity Soil Survey as shown on the Soil Data Viewer on the NRCS website (See attached map). The soil survey reports the developable portion of the property consists of hydrologic group C soils. The wetlands are generally hydrologic group D soils. See Figure 4: Soils Map.

The soils are listed below:

Soil Name	Hydrologic Soil Group
Biddeford Mucky Peat (Bo)	D
Paxton (PfC)	C
Scantic (Sn)	D
Woodbridge (WrB)	C

Water Quantity (Flooding Standard)

The following table summarizes the results of stormwater calculations for the design storm events for the project areas. Calculations and computer modeling sheets are provided with this report.

Table 1 - Stormwater Runoff Summary Table
Pre-Development vs. Post-Development

Study Point #	2Yr/24Hr (cfs)		10Yr/24Hr (cfs)		25Yr/24Hr (cfs)	
	Pre	Post	Pre	Post	Pre	Post
1	0.8	0.8	1.8	1.7	2.6	2.5
2	2.6	2.2	5.4	4.4	7.8	6.2

As the above result table shows, the post-development flow rates for the 2, 10 and 25-year/24 hour design storm events do not exceed the pre-development conditions.

Water Quality (BMP Standard)

The water quality requirements will be met with the construction of an under-drained filter basin.

New Impervious Area: The project will result in the creation of approximately 65,770 SF of impervious area. The filter basin will result in the treatment of 56,946 SF of impervious area and the roof drain filters will treat approximately 7,000 SF, resulting in a treatment percentage of (63,946/65,770) =97.2%.

Percentage of Treatment of the Impervious Area =97.2% (95% req'd)

Project Developed Area: The project will result in the creation of approximately 88,942 SF of developed area. This figure includes 65,770 SF of impervious area and 23,172 SF of landscaped area. The filter basin and roof drain filters will result in the treatment of approximately 71,316 SF of the developed area resulting in a treatment percentage of (71,316/88,942) x 100%= 80.2%.

Percentage of Treatment of the Developed Area = 80.2% (80% required)

Housekeeping and Maintenance & Inspection guidelines are attached to this report.

Filter Basin Sizing

Total Pond

STAGE (FT)	AREA (SF)	STORAGE (CF)
100.5	4920	0
101	5090	2502
101.5	5259	5090
102	5429	7762
102.8	5700	12213

WATERSHED IMPERVIOUS AREA=	56946	SF
WATERSHED LANDSCAPED AREA=	7370	SF
REQUIRED WATER QUALITY VOLUME=	4991	CF
PROVIDED WATER QUALITY VOLUME=	5090	CF

The required water quality volume was calculated by multiplying the impervious area by 1.0" and the landscaped area by 0.4".

Roof Dripline Filter Bed
We propose to provide treatment for the roof runoff for buildings 1, 6 & 7. The bed is required to provide volume for 1" of runoff from the contributing area and store it within a reservoir bed. The bed sizing is as follows:

Area of Watershed Roof 1 & 6: 280'x10' = 2,800 SF
Treatment Volume Required: Area x runoff depth: 2,800 SF x 1/12 FT = 234 CF
Bed Sizing:
Porosity = 40% Bed Length = 280' Bed Width = 3' Bed Depth = 1.0'
Available Volume= 280' x 3' x 1.0' x 0.40 = 336 CF.

Area of Watershed Roof 7: 70'x20' = 1,400 SF
Treatment Volume Required: Area x runoff depth: 1,400 SF x 1/12 FT = 117 CF
Bed Sizing:
Porosity = 40% Bed Length = 70' Bed Width = 3' Bed Depth = 1.5'
Available Volume= 70' x 3' x 1.5' x 0.40 = 126 CF.

Summary
Based on the results of this evaluation, the proposed stormwater design is not expected to cause flooding, erosion or other significant adverse effects downstream of the site.

Prepared by,
Terradyn Consultants, LLC
[redacted]
Jeffrey D. Amos, P.E.

Attached:
Attachment 1: Site Figures:
- USGS Quadrangle Map
- Aerial Photo
- FEMA Floodmap
- Medium Intensity Soil Map

Attachment 2: Post Development Hydrocad Calculations – 2, 10 & 25 Year Storm
Attachment 3: Pond Spillway Checks – 25 & 100 Year
Attachment 4: Drawdown Calculations
Attachment 5: Maintenance & Inspection of Stormwater Facilities
Attachment 6: Housekeeping Plan
Attachment 7: Pond Test Pit Log/Memo
Attachment 8: Post Development Stormwater Treatment Map

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Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

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565 Congress Street, Suite 201
Portland, ME 04101

ATTACHMENT 4 – Conformance to Conditional Use Standards

Gray Self Storage, Portland Road

402.9.3.F Standards Applicable to Conditional Use Permits

1. Will be compatible with the general character of the neighborhood with regard to design, scale, and bulk of proposed structures;

   Response: The project is compatible with the neighborhood. Another self storage facility is located one property away to the south. The property across the street is undeveloped and a large forested wetland lies between the proposed site and the residence to the north.

2. Will not have a significant detrimental effect on the use and peaceful enjoyment of abutting property as a result of noise, vibrations, fumes, odor, dust, light or glare.

   Response: The project will not have a significant impact to the neighboring properties. The development is a low traffic generator. Most of the site traffic will be during standard business hours. No fumes, vibrations, odor or dust will be created by the facility. The building mounted lights are full cut-off. The cut-sheet for the fixture is shown on Sheet C-3.2. The residence to the north is separated by a forested area.

3. Will not have a significant adverse effect on adjacent or nearby property values;

   Response: No adverse effect on adjacent or nearby property values is expected. The development is consistent with other commercial development in the immediate vicinity.

4. Will not result in significant hazards to pedestrian or vehicular traffic or significant traffic congestion;

   Response: The project is a very low traffic generator. It will not cause traffic congestion.

5. Will not result in significant fire danger;
   Response: Storage of petroleum products is prohibited. Uninhabited storage units on an unmanned site generally don't pose fire risk to people.

6. Will not result in significant flood hazards or flood damage, drainage problems, ground or surface water contamination, or soil erosion;

   Response: Stormwater calculations were provided that show that peak rates of runoff are controlled. The site is not located within a flood zone. No septic system is proposed and no

petroleum products are allowed to be stored on the site. There's no significant risk for either surface water or groundwater contamination.

7. Will be served adequately by, but will not overburden, existing public services and facilities, including fire protection services, roads, water and storm drainage systems.

   Response: Access, circulation, utilities and storm drainage systems are designed to conform to the Ordinance. The facility will be a low traffic generator, will not use any public water, will not result in additional school children, and has been designed to control stormwater to an appropriate level.

Summary for Pond FB1: Filter Basin

Inflow Area = 1.476 ac, 88.54% Impervious, Inflow Depth > 5.21" for 25 Year event
Inflow = 8.88 cfs @ 12.05 hrs, Volume= 0.641 af
Outflow = 7.70 cfs @ 12.09 hrs, Volume= 0.412 af, Atten= 13%, Lag= 2.6 min
Primary = 7.70 cfs @ 12.09 hrs, Volume= 0.412 af
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 101.79' @ 12.09 hrs Surf.Area= 5,356 sf Storage= 11,525 cf

Plug-Flow detention time= 191.9 min calculated for 0.411 af (64% of inflow)
Center-of-Mass det. time= 91.7 min (853.4 - 761.7)

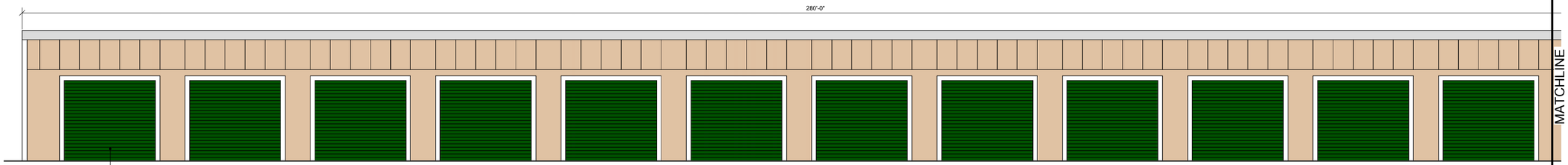
Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	17,134 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	4,920	0.0	0	0
100.50	4,920	40.0	4,920	4,920
101.00	5,090	100.0	2,503	7,423
102.00	5,429	100.0	5,260	12,682
102.80	5,700	100.0	4,452	17,134

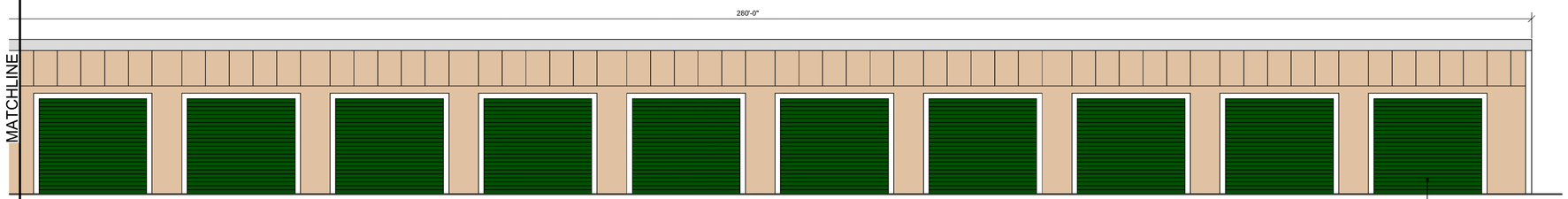
Device	Routing	Invert	Outlet Devices
#1	Primary	101.50'	**20.0' long x 10.0' breadth Primary Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	98.20'	**1.0" Vert. Endcap Orifice X 0.00** C= 0.600
#3	Device 2	98.50'	**4.0" Round Underdrain X 0.00** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.20' S= 0.0030 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf

Primary OutFlow Max=7.50 cfs @ 12.09 hrs HW=101.78' (Free Discharge)
└**1=Primary Spillway** (Weir Controls 7.50 cfs @ 1.33 fps)

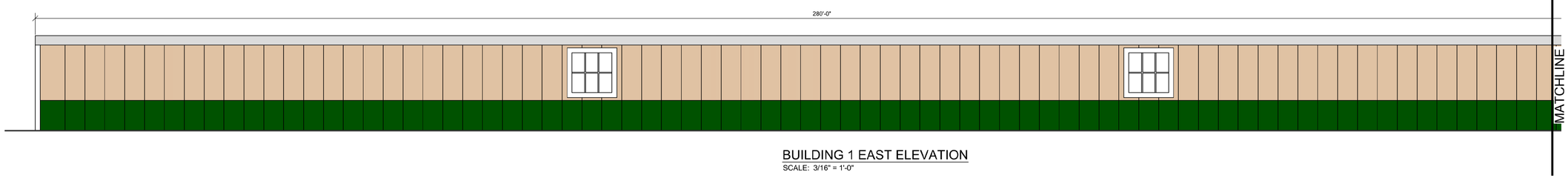
Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=98.00' (Free Discharge)
└**2=Endcap Orifice** (Controls 0.00 cfs)
└**3=Underdrain** (Controls 0.00 cfs)



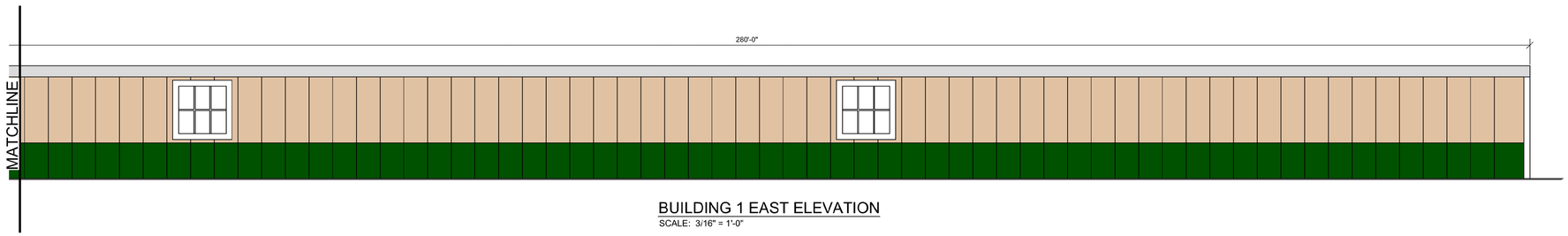
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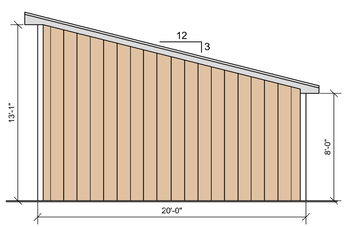
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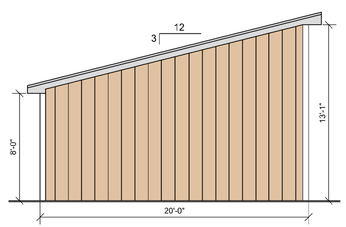
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BUILDING 1 EAST ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 1 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 1 NORTH ELEVATION
SCALE: 3/16" = 1'-0"

NO.	DATE	REVISIONS	APP'D BY

DATE: DATE
P.E.: P.E.

TERRADYN CONSULTANTS, LLC
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting
41 CAMPUS DRIVE, SUITE 101, NEW GLOUCESTER, ME 04260
565 CONGRESS STREET, SUITE 200, PORTLAND, ME 04102
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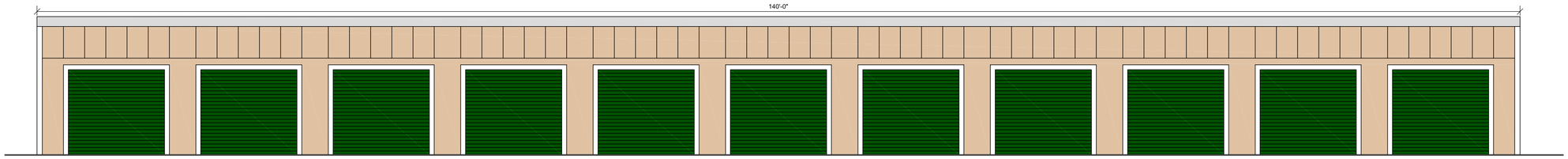
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PORTLAND ROAD, GRAY, ME

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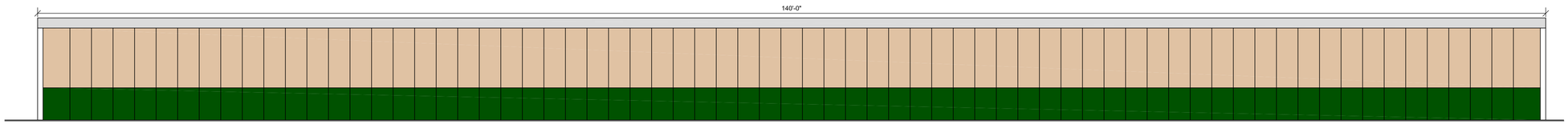
CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11-10-2021
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DESIGNED:	JDA
JOB NO:	21-25
FILE:	2125 elev

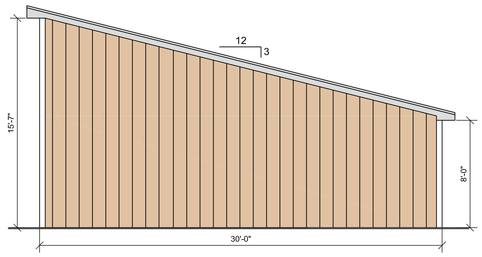
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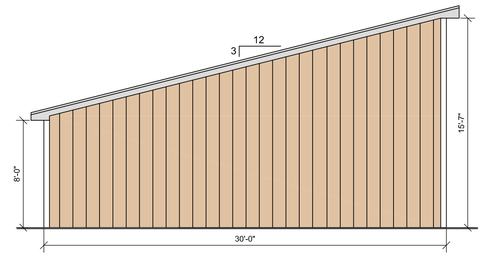
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BUILDING 4 & 5 EAST ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 2 & 3 EAST ELEVATION
BUILDING 4 & 5 WEST ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 2 & 3 NORTH ELEVATION
BUILDING 4 & 5 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



BUILDING 2 & 3 SOUTH ELEVATION
BUILDING 4 & 5 NORTH ELEVATION
SCALE: 3/16" = 1'-0"

DATE: DATE
P.E.: P.E.

NO.	DATE	REVISIONS	APP'D BY

TERRADYN CONSULTANTS, LLC
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NEW GLOUCESTER, ME 04260
OFFICE: (207) 926-5111 FAX: (207) 221-1317
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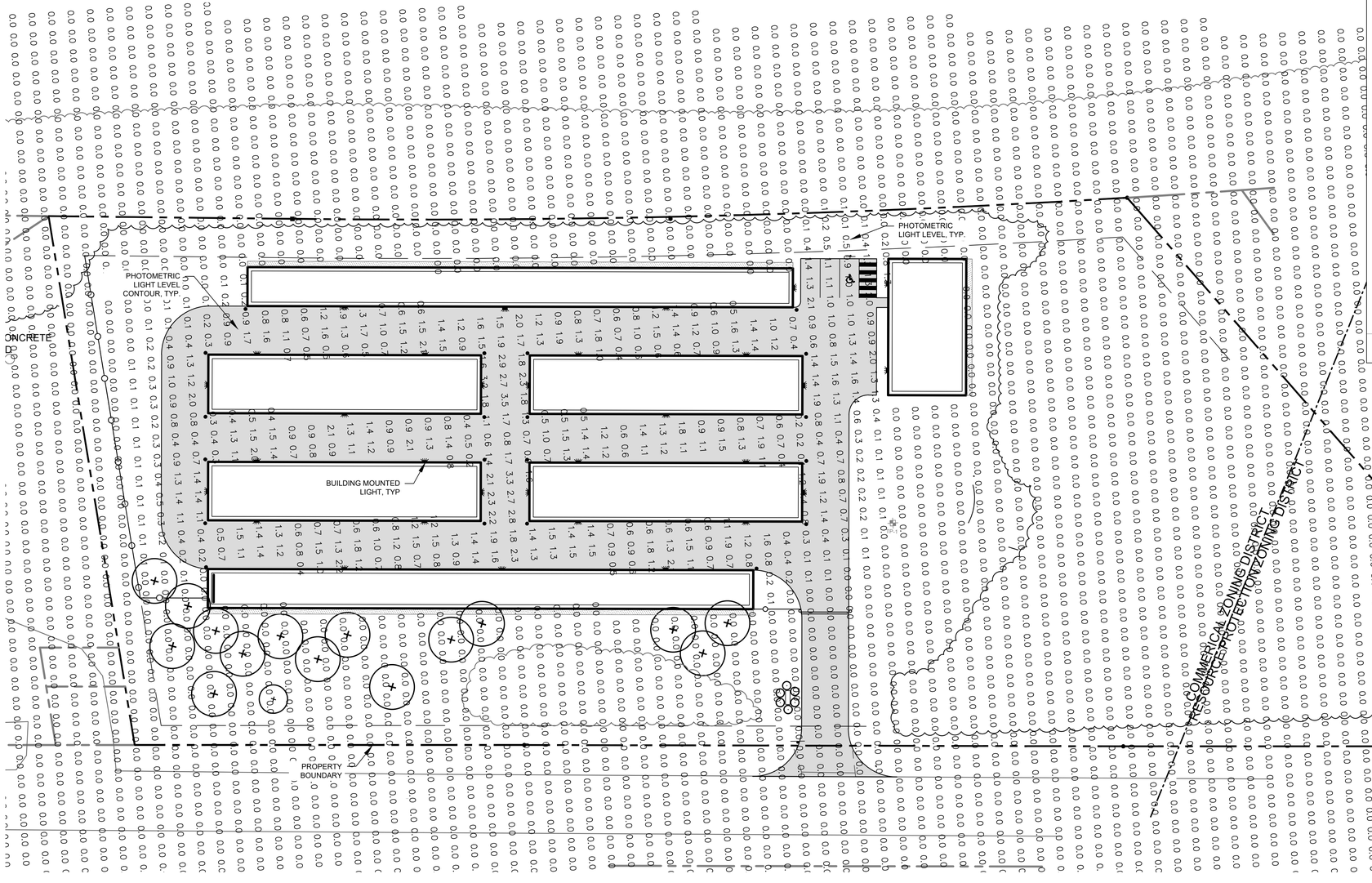
PROJECT: GRAY SELF STORAGE
PORTLAND ROAD, GRAY, ME

SHEET TITLE: BUILDING 2-5 ELEVATIONS

CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	11-10-2021
SCALE:	3/16" = 1'-0"
DESIGNED:	JDA
JOB NO:	21-25
FILE:	2125 elev

SHEET A-1.2



LIGHT FIXTURE TABLE

LABEL	LIGHT FIXTURE	MANUFACTURER	MANUFACTURERS ID	NUMBER OF LIGHTS	MOUNTING HEIGHT	MOUNTING LOCATION
A	LNC COMPACT LED LITEPAK	HUBBELL	LNC-9LU-3K-4	31	10'	WALL

NOTES:
1. LIGHTING PLAN PREPARED USING DESIGN MASTER PHOTOMETRICS SOFTWARE
2. ONLY PROPOSED LIGHTING FIXTURES ARE MODELED
3. DEPRECIATION FACTOR FOR LED IS 0.90
4. LIGHT LEVELS ARE ZERO AT THE PROPERTY LINE.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

HUBBELL Outdoor Lighting

DATE: | LOCATION:
TYPE: | PROJECT:
CATALOG #:

LNC
COMPACT LED LITEPAK

FEATURES
- Compact LNC LED is designed for perimeter illumination and available in 3 lumen packages for safety, security and identity
- 3000K, 4000K, 5000K and Amber color temperatures
- Up to 4:1 spacing to mounting height ratio means fewer fixtures to install
- Acrylic diffuser included! Use for applications near entrances or locations where reduced brightness is desired. (Maximum spacing with diffuser 30ft)
- Die-cast aluminum housing with decorative Laredo styling
- Full cut-off neighbor friendly
- Listed to UL1598 for use in wet locations



RELATED PRODUCTS
LNC2 LNC3 LNC4

*3000K and warmer CCTs only

SPECIFICATIONS
CONSTRUCTION
- Decorative die-cast aluminum housing and door
- Rugged design protects internal components and provides excellent thermal management for long life
- Powder paint finishes provide lasting appearance in outdoor environments
- Full cut-off distribution; Ambient diffuser included, use for applications near enterances or locations where reduced brightness is desired

OPTICS
- Drivers are 120-277V, 50/60Hz Type II, III and Type IV lenses provide wide lateral spread
- 3000K - 80 CRI, 4000K - 70 CRI, and 5000K - 70 CRI, CCT nominal
- Drivers have greater than .90 power factor and less than 20% Total Harmonic Distortion

INSTALLATION
- Quick mount adapter provides quick installation, designed for recessed box 4" square junction box

ELECTRICAL
- 60,000 hours minimum LED life at L96 rating per IESNA TM-21-11
- Minimum operating temperature is -40°C/-40°F
- 0-10V dimming 120-277V only
- LNC5L – 5 LEDs, Types II, III or IV available, see page 2 for electrical details
- LNC7L – 7 LEDs, Type II, III or IV available, see page 2 for electrical details
- LNC9L – 9 LEDs, Types II, III or IV available, see page 2 for electrical details

CONTROLS
- Photocontrol option is available to provide dusk-to-dawn control for additional energy savings

CERTIFICATIONS
- Listed and labeled to UL 1598 for wet locations, 25°C ambient environments

WARRANTY
- 5 year limited warranty
- See HLI Standard Warranty for additional information

KEY DATA	
Lumen Range	800–2100
Wattage Range	13–22
Efficacy Range (LPW)	64–95
Fixture Projected Life (Hours)	L96>60K
Weights lbs. (kg)	9.6 (24.5)

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701 Millennium Blvd • Greenville, SC 29607 / Tel 864.678.1000 / Website www.hubbelloutdoor.com
HUBBELL Lighting

LNC PSG PAGE
LNC BROCHURE
LED BUILDING GUIDE
INSTALLATION INSTRUCTIONS

DATE: 5/31/2022
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY
3	5/31/2022	REVISED PER FINAL 3RD PARTY REVEIW	
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

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TERRADYN CONSULTANTS, LLC
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

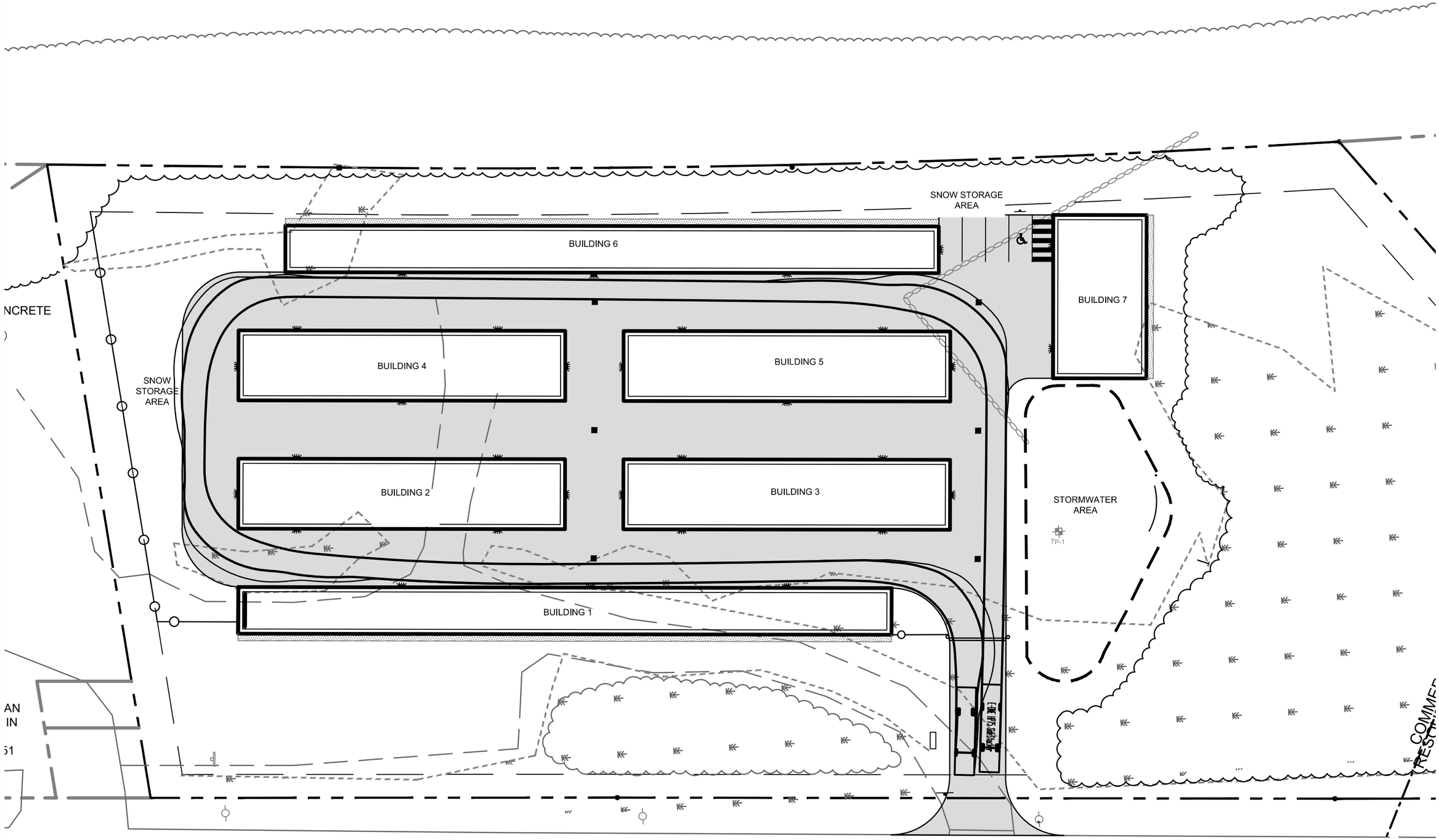
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE:
PHOTOMETRIC LIGHTING PLAN

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	3/16/2022
SCALE:	1" = 30'
DESIGNED:	JDA
JOB NO:	2125
FILE:	
SHEET	P-1.0



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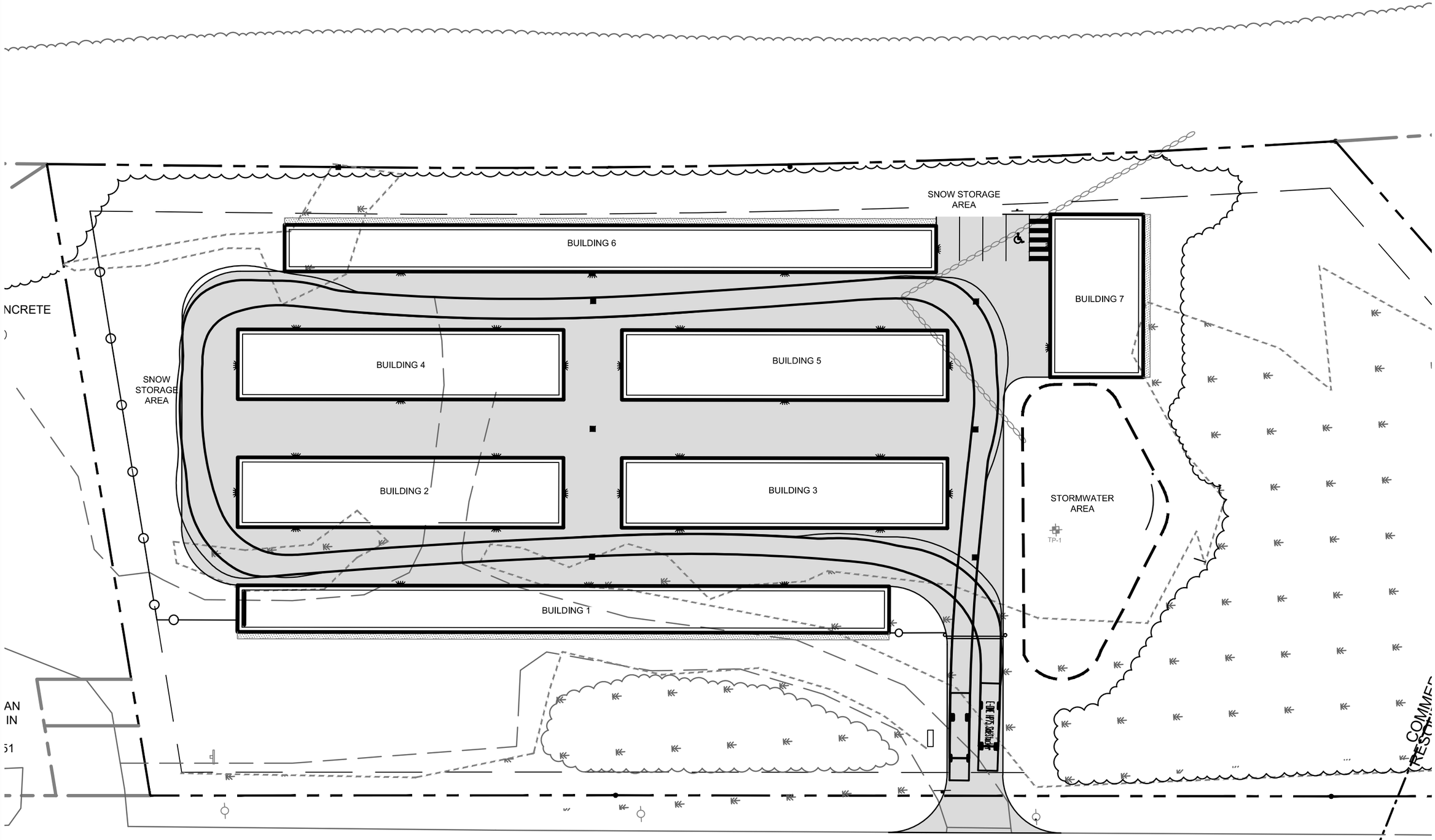
Civil Engineering - Land Planning - Stormwater Design - Environmental Permitting

274

SHEET DESCRIPTION
ATTACHMENT 5 - TURNING TEMPLATE EXHIBIT
GRAY SELF STORAGE

PREPARED FOR
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, MAINE 04097

JOB NO.	21-25
DATE	5/25/2022
SCALE	1"=40'
SHEET	1
OF	3



41 Campus Drive, Suite 101
New Gloucester, ME 04260

565 Congress Street, Suite 310
Portland, ME 04101

(207) 926-5111
www.terradynconsultants.com

TERRADYN
CONSULTANTS, LLC

Civil Engineering - Land Planning - Stormwater Design - Environmental Perr

275

SHEET DESCRIPTION
ATTACHMENT 5 - TURNING TEMPLATE EXHIBIT
CUMBERLAND CENTER

PREPARED FOR
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, MAINE 04097

JOB NO.
21-25

DATE
5/25/2022

SCALE
1"=40'

SHEET
2

OF
3

41 Campus Drive, Suite 101
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NCRETE

)

AN
IN

51

SNOW STORAGE AREA

BUILDING 6

BUILDING 4

BUILDING 5

BUILDING 7

BUILDING 2

BUILDING 3

BUILDING 1

SNOW STORAGE AREA

STORMWATER AREA

TP-1

SHEET DESCRIPTION
ATTACHMENT 5 - TURNING TEMPLATE EXHIBIT
CUMBERLAND CENTER

PREPARED FOR
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, MAINE 04097

JOB NO.
21-25

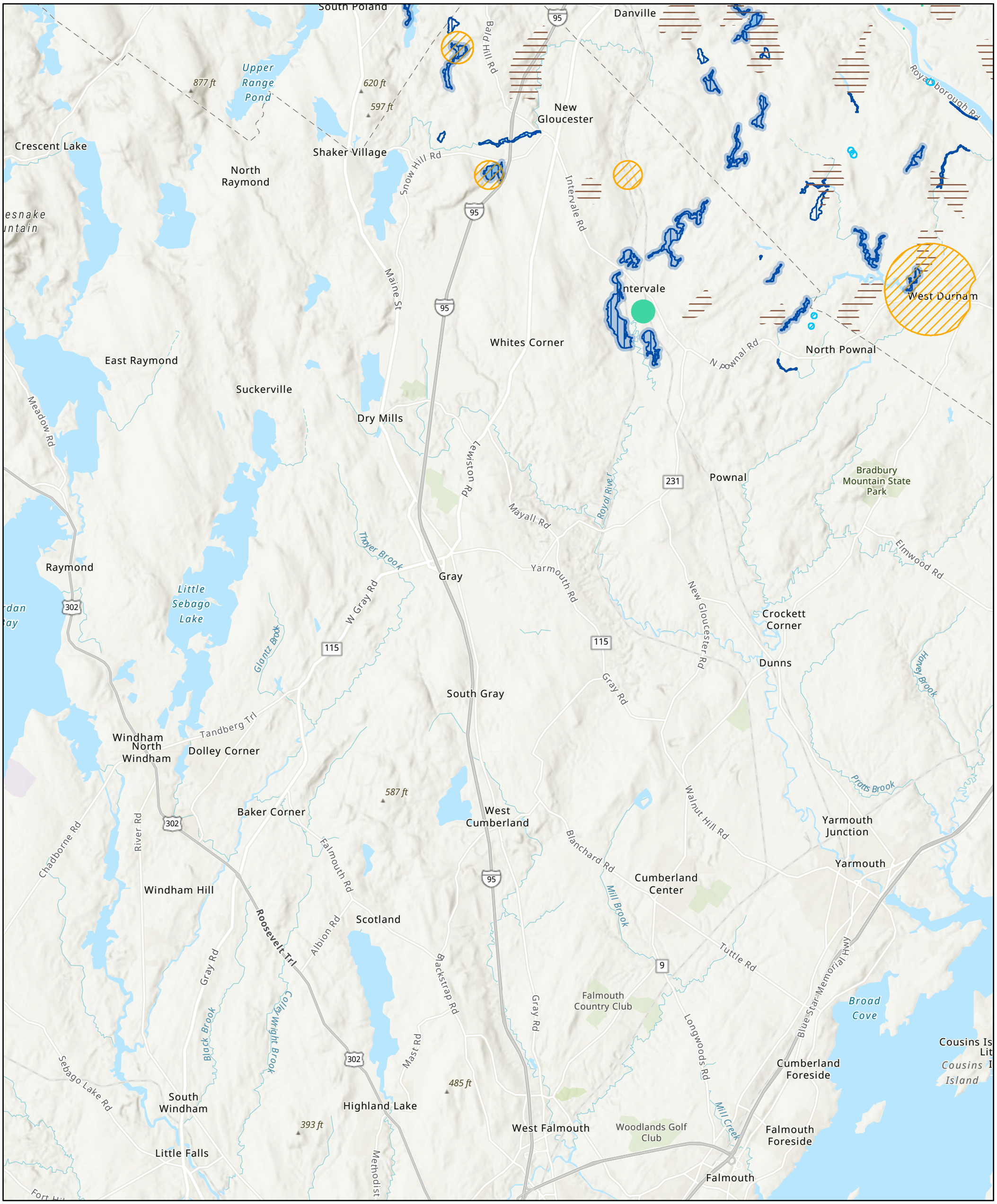
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1"=40'

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3

OF
3

Beginning with Habitat



5/31/2022

1:140,995

0 1 2 4 mi

0 1.75 3.5 7 km

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

DEER WINTERING AREA MAP - GRAY SELF STORAGE



"Portland Rd, Gray"



1/12/2022, 12:50:34 PM

- Maine Tax Parcels
- Endangered and Threatened Fish
- Endangered Threatened and Special Concern Wildlife
- Significant Vernal Pools
- Tidal Waterfowl and Wading Bird Habitat

Inland Waterfowl and Wading Bird Habitat

- Moderate
- High

Shorebird Areas

- Roosting
- Feeding
- Both

1:2,257

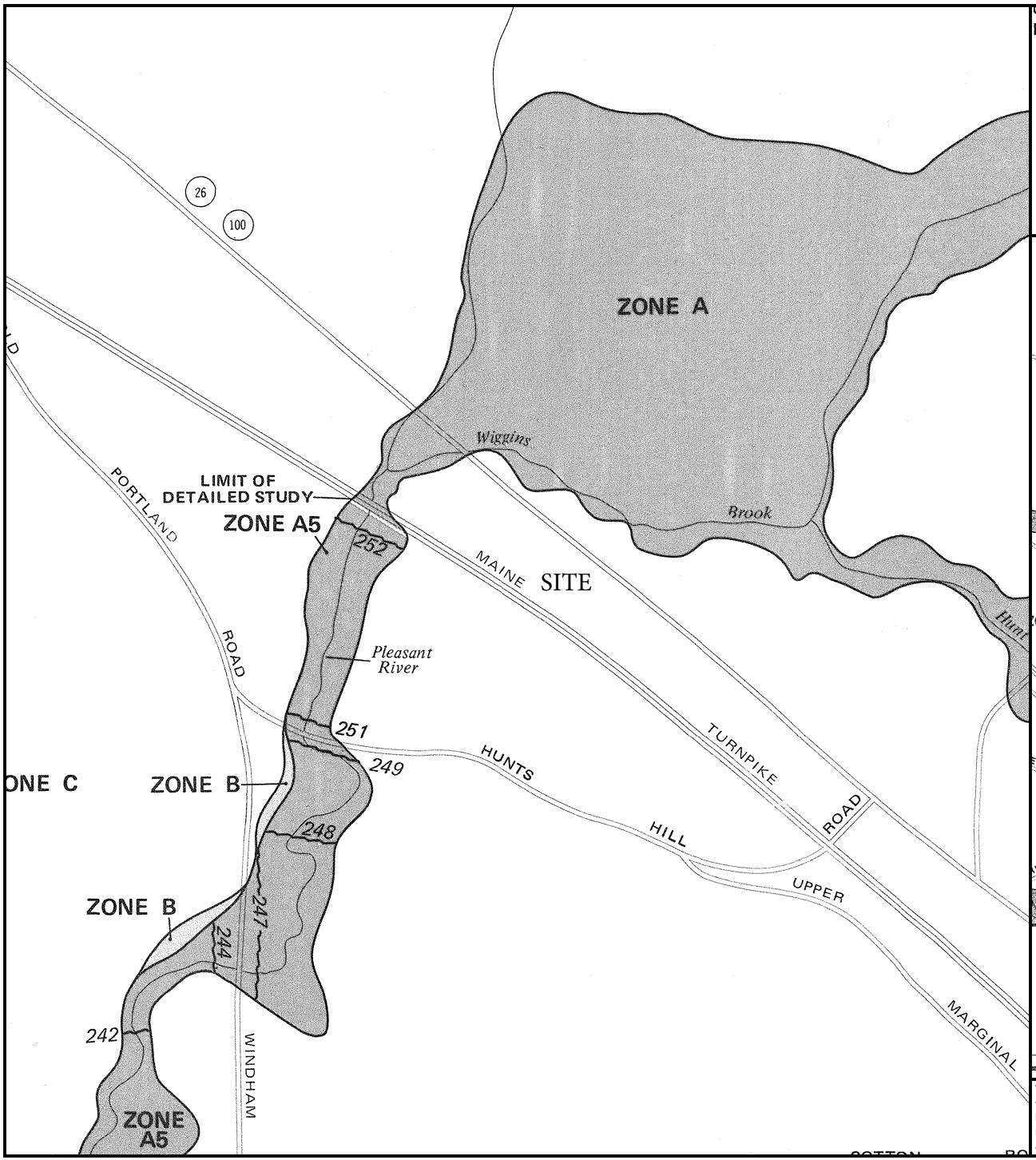
0 0.01 0.03 0.05 mi

0 0.02 0.04 0.08 km

Maxar, Microsoft, Maine Department of Inland Fisheries and Wildlife, Esri Community Maps Contributors, © OpenStreetMap, Microsoft, Esri Canada, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, EPA, NPS. US Census Bureau, USDA

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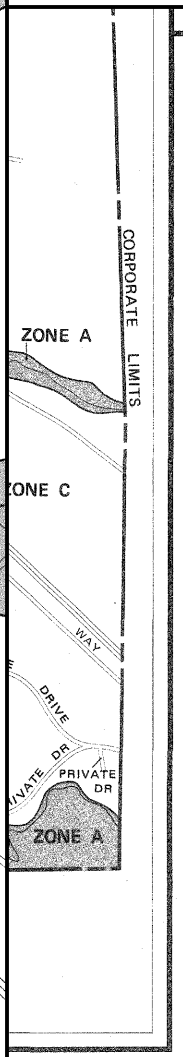
Maxar, Microsoft | USGS National Map 3D Elevation Program (3DEP) | Department of Agriculture, Conservation and Forestry Division of Parks and Public Lands, Land Use Planning Commission, Department of Inland Fisheries and Wildlife, State Planning Office, The Nature Conservancy, New



contact your insurance agent, or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE

1000 0 1000 FEET



NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
GRAY, MAINE
CUMBERLAND COUNTY

PANEL 15 OF 15
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230048 0015 A

EFFECTIVE DATE:
JANUARY 6,1982

federal emergency management agency

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at https://msc.fema.gov.

TERRADYN CONSULTANTS, LLC
41 Campus Dr. Ste 301
New Gloucester, ME 04260
(207) 926-5111

JOB NO. 2025
SHEET NO. 1 OF 1
CALCULATED BY JDA DATE 11/10/2021

BUDGETARY COST ESTIMATE - SITE WORK
GRAY SELF STORAGE

ITEM	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	AMOUNT
	EARTHWORK				
1	GRUB OPEN AREA	AC	$2,500.00	2	$5,250.00
2	SITE FILLS WITH ONSITE MATERIAL	CY	$10.00	4600	$46,000.00
3	STORMWATER POND	LS	$60,000.00	1	$60,000.00
	PARKING & ACCESS				
4	HOT BITUMINOUS SURFACE PAVEMENT	TON	$100.00	210	$21,000.00
5	HOT BITUMINOUS BINDER PAVEMENT	TON	$90.00	410	$36,900.00
6	BASE GRAVEL MDOT TYPE A	CY	$30.00	403	$12,090.00
7	SUBBASE GRAVEL MDOT TYPE D	CY	$18.00	2015	$36,270.00
	SITE IMPROVEMENTS				
8	SIGNS	EA	$300.00	1	$300.00
9	FENCE	LF	$10.00	1300	$13,000.00
10	ENTRANCE GATES	EA	$1,200.00	1	$1,200.00
	DRAINAGE				
11	15" DIAMETER STORM DRAIN	LF	$40.00	360	$14,400.00
12	18" DIAMETER STORM DRAIN	LF	$55.00	24	$1,320.00
13	6" DIAMETER STORM DRAIN	LF	$20.00	24	$480.00
14	4' DIAMETER CATCH BASIN	EA	$4,000.00	6	$24,000.00
	UTILITIES				
15	TRANSFORMER PAD	LS	$3,000.00	1	$3,000.00
16	LIGHT POLE BASES	EA	$800.00	0	$0.00
17	SITE ELECTRICAL	LS	$15,000.00	1	$15,000.00
	EROSION & SEDIMENT CONTROL				
18	STABILIZED CONSTRUCTION ENTRANCE	EA	$2,000.00	1	$2,000.00
19	RIPRAP	CY	$40.00	16	$640.00
20	SILT FENCE/MULCH BERM	LF	$5.00	900	$4,500.00
21	DIRTBAG	EA	$300.00	1	$300.00
22	LOAM & SEED	CY	$12.00	285	$3,420.00
23	LANDSCAPE PLANTINGS	LS	$5,000.00	1	$5,000.00
				Total =	**$306,070.00**

NOTES

1. THE OPINION OF PROBABLE CONSTRUCTION COST IS BASED UPON THE PERMITTING PLANS DATED NOVEMBER 11, 2021 PREPARED BY TERRADYN CONSULTANTS, LLC. IT DOES NOT INCLUDE COST ASSOCIATED WITH THE BUILDING CONSTRUCTION, ENGINEERING DESIGN FEES, LAND ACQUISITION, LEGAL FEES, PERMITING FEES, TESTING SERVICES OR CONSTRUCTION PHASE SERVICES.

2. THE ONSITE PAVEMENT AND GRANULAR MATERIAL QUANTITIES ARE BASED UPON THE FOLLOWING SECTION:

MATERIAL DESCRIPTION	PAVEMENT BUILDUP (IN)
BITUMINOUS CONCRETE SURFACE COURSE (INCHES)	1
BITUMINOUS CONCRETE BINDER COURSE (INCHES)	2
AGGREGATE BASE GRAVEL (INCHES)	3
AGGREGATE SUBBASE GRAVEL (INCHES)	15

TERRADYN
CONSULTANTS, LLC

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 310
Portland, ME 04101

May 19, 2022 2125

Ms Kristen Muszynski, Town Planner
Town of Gray Planning Department
Henry Pennell Municipal Complex
24 Main Street
Gray, ME 04039

Final Site Plan Application
Gray Self Storage
119 Portland Road, Gray, ME

Kristen,

Terradyn Consultants LLC, on behalf of Beth Cureton, is pleased to submit additional and updated information in support of the previously filed site plan application for the proposed Gray Self Storage Project.

Project Summary

The development parcel is approximately 4.1 acres and is shown as lots 31-10 & 31-14 on the Town of Gray Tax Map 59 and is approximately located at 119 Portland Road. The property is located within the Commercial (C) Zone. The properties will be merged into one property upon final approval.

The applicant is proposing to create a self-storage facility that will feature seven self-storage buildings along with the associated maneuvering area, utility infrastructure, landscaping and stormwater facilities. The buildings provide a total of 30,800 SF of indoor storage. Building #7 will be a climate-controlled building where access to units will be from an internal hallway. Four parking spaces have been added adjacent to this building. Facility rentals will be managed by a website. No rental office is proposed onsite which means that the facility does not require any water, sewage or employee parking facilities.

The applicant is proposing to construct metal buildings featuring earth tone colors. The applicant is currently planning on tan buildings with hunter green doors and trim. The side of Building 1 that faces Route 100 will be broken up with no fewer than four faux windows. Sixteen trees will be planted along the front setback to provide additional screening. There will be a new sign adjacent to the entrance that will conform to all requirements of the land use ordinance. It will be externally lit.

The project will be accessed by a new driveway off Portland Road (Route 100). The driveway leads to leads to a front gate that is approximately 100' off the edge of the road. This distance provides more than enough stacking opportunity. The gate will be controlled with a keypad mechanism. The applicant will provide the access code to the Gray Fire & Rescue Department. A black chain link security fence will surround the front & southerly sides of the development area.

Almost all of the development will drain to a new under-drained filter basin. The filter basin also provides control of the peak rate of runoff to below existing levels. Half of the roof area for Buildings 1, 6 & 7 will drain to a filter strip. The design meets the MDEP & Town of Gray ordinance requirements. A full stormwater analysis was previously provided. We're hopeful that Maine Department of Environmental Protection will have completed their review of the project Stormwater Permit Application and NRPA Tier 1 Wetland Alteration Permit prior to the meeting.

Changes Since Last Meeting

We had a public hearing last November. There have been a handful of significant changes to both the Town Land Use Ordinance, our permitting status with MDEP and the associated plan set. The changes are outlined below:

1. The Town Council voted to allow multiple self-storage buildings on one property. This change now clears the way for the Planning Board to approve this project if they see fit.

2. The Town Council removed outdoor storage as an allowed use for this property so that component has been removed from the project and replaced with a seventh building. The seventh building will be a climate-controlled building where users will need to enter the building to access their unit. We've added four parking spaces adjacent to this building to facilitate loading & unloading.

3. We ran into a complication with the MDEP and the classification of the wetlands on site. MDEP ruled that all wetlands located on the northeastern property corner were classified as wetlands of special significance since a portion of them were within 250' of the mapped boundary of the wetlands of special significance that are located on the opposite side of the road. After several months of discussion, they agreed to review the project as was previously submitted. Unfortunately, this means that we still don't have final approval for our MDEP Stormwater Permit or NRPA Tier 1 Wetland Alteration Permit.

4. Three additional evergreen trees have been added to the southeast corner of the property that will help shield the view of the site as vehicles travel north on Route 100.

5. The applicant has agreed to add four faux windows to the Route 100 facing side of Building #1 to help break up the building facade. The applicant feels that the view of the building will already be broken up by the sixteen trees that are proposed to be planted as well as the preservation of the existing trees in the roadside wetland area.

Comment Responses:

We have answered all previous engineering and staff comments and have provided detailed responses belowThe request/comment is shown below with our response in *italics.*

1. The post development watershed map shows all building roof runoff tributary to the soil filter. Based upon the submitted photos of storage buildings, the roofs are gable roofs, therefore half of buildings #1 and #6 are not tributary to the filter.

Response: We've updated the stormwater report & associated post development watershed map to show the removal of the outdoor storage area. In the process, we also added the roof drain filter strips to the calculations & plan. Building #7 also features a roof drain filter strip. See details on Sheet C-2.0.

2. The outlet of the proposed soil filter underdrain pipe at the Portland Road ditch is 96.80'. The road ditch in the vicinity of this project is extremely flat and does not drain well.

   Response: We adjusted the stormwater pond to alleviate the issue of the underdrain outlet & the roadside ditch. The pond was raised just enough to allow the underdrain to flow to to the level spreader that is adjacent to the stormwater pond.

3. The pond test pit, MDEP stormwater permit application, NRPA Permit application, Public Works review of underdrain outlet, are pending.

   Response: We are still waiting for final sign off from the MDEP. We've provided copies of those applications for your records. The pond test pit information is now included as Attachment 7 in the stormwater report.

4. The pond liner should be installed to the elevation of the water quality volume (WQV) at a minimum. The liner elevation is listed as 100.5, the stormwater report lists the WQV provided at elevation 101.

   Response: The pond liner has been extended up to the water quality elevation. That elevation is now 101.5. See detail on Sheet 3.2.

5. Provide revised Hydrocad report with 1.5" orifice as controlling outlet.

   Response: The orifice has been reduced to 1" and added to the pond as a controlling outlet (secondary outlet). See stormwater calculations.

6. The response to comments lists a drawdown analysis as provided. The analysis was not included in the revised application information that we received.

   Response: See Attachment 4 of the stormwater report for the drawdown analysis.

7. The level lip spreader at the pond outlet lists the storm drain outlet invert as 98.0 and the level spreader as 98.2. The level lip should be at 98.5 based on the detail.

   Response: See Sheet 2.0 of the plan set. The underdrained outlet invert & lip of the level spreader has been set at 98.2. The detail of the level spreader has been modified for clarity.

8. The plan callout for the level spreader length is 28', the detail lists a length of 20'. Revise the detail. Add a table if the two level spreaders are different lengths.

   Response: The detail has been revised as requested. The level spreader is now shown to be 20' wide. The 10 year flow is approximately 3.0 cfs. Using the standard sizing of 1 foot per every 0.25 cfs, that means that a minimum width of 12' would be required. 20' is more than enough.

9. Based on discussions with the Director of Public Works, the underdrain soil filter underdrain outlet should discharge to a level lip spreader that allows sheet flow to the road ditch rather than the direct discharge as currently shown.

   Response: The pond was redesigned to allow the soil filter underdrain outlet to flow to the adjacent level spreader. It no longer outlets to the road ditch.

10. Buildings 1 & 6 show a roof drain filter strip along one side. The filter strip detail shows a underdrain/foundation drain. Where will the underdrain/foundation drain outlet? Also, do the other buildings also have a foundation drain, and if so, where will they outlet?

    Response: See Sheet C-2.0 for underdrain outlet locations. The applicant does not know if drains will be necessary for the remainder of the pads. We've added a note to C-2.0 indicating that foundation drains cannot drain to the stormwater pond and must be outlet to a non-wetland area with a properly sized riprap outlet.

11. Provide additional detail for the sediment forebay. Will the berm between the forebay and underdrain filter area be constructed of compacted soil where water will flow up and over the top, or will it be stone where the water will flow through? If the former, an erosion control matting or some other type of permanent erosion control be provided to prevent erosion.

    Response: Additional detail has been added to the Underdrained Soil Filter Detail on Sheet 3.2, as requested.

<u>Comments per town staff:</u>

1. Public Works Director Alec Dodd shares the engineer's concerns regarding the underdrain discharge directly piped into the road ditch. He suggests a level lip spreader, to be located at the interior of the property, to disperse the discharge away from the road. In periods of heavy rain, particularly when the ground is frozen, stormwater overflows onto the road in this area, creating an ice hazard on the road, so a direct outlet to the existing ditch would increase that potential.

Response: The pond has been re-designed to remove the need to outlet the underdrain to the ditch.

12. The project uses two parcels, so the lots need to be merged into one to adhere to setback and siting requirements.

    Response: Comment acknowledged. The applicant agrees that the parcels can be merged into one as of final approval.

13. Most notably, the zoning ordinance Sect. 402.6.2 G-H requires that only one principal building may be located per lot. Additionally, a self-storage facility is defined as "*a* structure containing separate storage spaces of varying size, leased or rented on an individual basis." In conferring with the town attorney on these points, she advised that we should pursue an ordinance change to amend the language, as the ordinance does not currently allow multiple buildings in the definition of a self-storage facility or exempt such facilities from the single principal building requirement. Town staff is pro-actively pursuing a timeline for an amendment to address this matter.

    Response: The ordinance now allows multiple buildings for this use. However, outdoor storage is not an allowed use, so it has been removed from the plan.

14. Buffering/Screening – particularly evergreens - should be considered for the proposed stormwater pond as well as along the property lines to screen the view. The existing trees may be sufficient on North side. South side of property has no buffering proposed. Front has mostly deciduous, with two evergreen plantings listed out front. The board may wish to consider requiring two-level landscaping for the rear buildings due to the property grade. Additionally, the board may want to consider green fencing, not black as currently proposed.

    Response: Additional trees have been added to the plan in the requested locations.

15. Parking is not addressed on the site plan. Self-storage facility is not a use specifically provided for in the minimum parking standards table in the zoning ordinance, but it advises applying standards of a similar use. (402.10.11 9 D) For "warehouse" use, .7 spaces are required per 1,000 sf., which would be 19 spaces for this site.

    Response: No parking is required for buildings 1-6 as discussed with the planning board, but Building 7 may be an air conditioned building with units accessed from in internal walkway. The building is 2,800 SF, so 1.96 spaces are required. The plan now shows 4 spaces adjacent to the building.

16. Pedestrian ways within the site are not addressed. Zoning 402.10.11 C requires that the plan must provide for a system of pedestrian ways within the development appropriate to the type and scale.

    Response: The planning board agreed that no pedestrian way was necessary.

17. The plan does not include a fire protection system.

    Response: The planning board indicated that no fire protection system was necessary since the risk was to property and not people.

The following items are attached:

- Attachment 1 – Updated Stormwater Report
- Attachment 2 – Copy of Maine DEP Stormwater Permit Application
- Attachment 3 – Copy of NRPA Tier 1 Wetland Alteration Permit Application
- Attachment 4 – Conditional Use Criteria (previously submitted)

Prepared by,
Terradyn Consultants, LLC

[redacted]

Jeff

Revised 4-1-2022

STORMWATER MANAGEMENT PLAN

Gray Self Storage
Gray, Maine

The following Stormwater Management Plan has been prepared for the Gray Self Storage Project to evaluate stormwater runoff and erosion control for the proposed self-storage project to be located at 986 Portland Road in Gray, Maine.

Site Calculations

Total Property Area	4.1 Ac (+/-)
Total Project Impervious Area	1.51 Ac
Total Developed Area	2.04 Ac

Existing Conditions

The development parcel is located on the west side of Portland Road, near 119 Portland Road. The Maine Turnpike is located along the back property line. See attached Figure 1: USGS Quadrangle Map. The development parcel is approximately 4.1 acres and is shown as lots 31-10 & 31-14 on the Town of Gray Tax Map 59. The property contains an old driveway that connects Portland Road to a small <10,000 SF cleared area that is located directly adjacent to the neighboring commercial property to the south. The rest of the property is undeveloped forest & wetland areas. See attached Figure 2: Aerial Map.

The property drains to the Portland Road drainage system. The southern edge of the property drains to a culvert that located at the southeast corner of the property. This location is modeled as Study Point #1 in this report. The remainder of the site drains to a wetland system that is located on the northeast corner of the property. This corner is modeled as Study Point #2. Both areas drain across Portland Road where they're intercepted by Wiggins Brook before flowing into the Pleasant River.

Flooding

The development area is not located within an area of flood hazard according to the Federal Insurance Rate Map 230048 0015 A. See Figure 3: FEMA Floodmap.

Modeling Assumptions

The onsite stormwater facilities were sized utilizing the USDA Soil Conservation Service (SCS) TR-20 Runoff Simulation Model, as contained in the HydroCAD computer software program (Version 9.0). Runoff curve numbers were determined for each direct watershed by measuring the area of

each hydrologic soil group within each type of land cover. Weighted curve numbers were then calculated using curve numbers for various cover types and hydrologic soil groups, assuming "good" conditions as defined in U.S Soil Conservation Service (SCS) publications. Times of concentration and travel times were determined from site topographic maps in accordance with SCS procedures. A maximum length of 150 feet was used for sheet flow.

All of the watersheds' peak runoff rates were analyzed for the 2, 10, and 25-year frequency, 24-hour duration storm events. A Type III rainfall distribution was applied to these storms. The rainfall amounts for Cumberland County are as follows:

Storm Frequency Precipitation (in./24 hr)	
2-year	3.1
10-year	4.6
25-year	5.8

Onsite Soils

The area soils were delineated from the Cumberland County Medium Intensity Soil Survey as shown on the Soil Data Viewer on the NRCS website (See attached map). The soil survey reports the developable portion of the property consists of hydrologic group C soils. The wetlands are generally hydrologic group D soils. See Figure 4: Soils Map.

The soils are listed below:

Soil Name	Hydrologic Soil Group
Biddeford Mucky Peat (Bo)	D
Paxton (PfC)	C
Scantic (Sn)	D
Woodbridge (WrB)	C

Water Quantity (Flooding Standard)

The following table summarizes the results of stormwater calculations for the design storm events for the project areas. Calculations and computer modeling sheets are provided with this report.

Table 1 - Stormwater Runoff Summary Table
Pre-Development vs. Post-Development

Study Point #	2Yr/24Hr (cfs)		10Yr/24Hr (cfs)		25Yr/24Hr (cfs)	
	Pre	Post	Pre	Post	Pre	Post
1	0.8	0.8	1.8	1.7	2.6	2.5
2	2.6	2.2	5.4	4.4	7.8	6.2

As the above result table shows, the post-development flow rates for the 2, 10 and 25-year/24 hour design storm events do not exceed the pre-development conditions.

Water Quality (BMP Standard)

The water quality requirements will be met with the construction of an under-drained filter basin.

New Impervious Area: The project will result in the creation of approximately 65,770 SF of impervious area. The filter basin will result in the treatment of 56,946 SF of impervious area and the roof drain filters will treat approximately 7,000 SF, resulting in a treatment percentage of (63,946/65,770) =97.2%.

Percentage of Treatment of the Impervious Area =97.2% (95% req'd)

Project Developed Area: The project will result in the creation of approximately 88,942 SF of developed area. This figure includes 65,770 SF of impervious area and 23,172 SF of landscaped area. The filter basin and roof drain filters will result in the treatment of approximately 71,316 SF of the developed area resulting in a treatment percentage of (71,316/88,942) x 100%= 80.2%.

Percentage of Treatment of the Developed Area = 80.2% (80% required)

Housekeeping and Maintenance & Inspection guidelines are attached to this report.

Filter Basin Sizing

Total Pond

STAGE (FT)	AREA (SF)	STORAGE (CF)
100.5	4920	0
101	5090	2502
101.5	5259	5090
102	5429	7762
102.8	5700	12213

WATERSHED IMPERVIOUS AREA=	56946	SF
WATERSHED LANDSCAPED AREA=	7370	SF
REQUIRED WATER QUALITY VOLUME=	4991	CF
PROVIDED WATER QUALITY VOLUME=	5090	CF

The required water quality volume was calculated by multiplying the impervious area by 1.0" and the landscaped area by 0.4".

Roof Dripline Filter Bed
We propose to provide treatment for the roof runoff for buildings 1, 6 & 7. The bed is required to provide volume for 1" of runoff from the contributing area and store it within a reservoir bed. The bed sizing is as follows:

Area of Watershed Roof 1 & 6: 280'x10' = 2,800 SF
Treatment Volume Required: Area x runoff depth: 2,800 SF x 1/12 FT = 234 CF
Bed Sizing:
Porosity = 40% Bed Length = 280' Bed Width = 3' Bed Depth = 1.0'
Available Volume= 280' x 3' x 1.0' x 0.40 = 336 CF.

Area of Watershed Roof 7: 70'x20' = 1,400 SF
Treatment Volume Required: Area x runoff depth: 1,400 SF x 1/12 FT = 117 CF
Bed Sizing:
Porosity = 40% Bed Length = 70' Bed Width = 3' Bed Depth = 1.5'
Available Volume= 70' x 3' x 1.5' x 0.40 = 126 CF.

Summary
Based on the results of this evaluation, the proposed stormwater design is not expected to cause flooding, erosion or other significant adverse effects downstream of the site.

Prepared by,
Terradyn Consultants, LLC
[redacted]
Jeffrey D. Amos, P.E.

Attached:
Attachment 1: Site Figures:
- USGS Quadrangle Map
- Aerial Photo
- FEMA Floodmap
- Medium Intensity Soil Map

Attachment 2: Post Development Hydrocad Calculations – 2, 10 & 25 Year Storm
Attachment 3: Pond Spillway Checks – 25 & 100 Year
Attachment 4: Drawdown Calculations
Attachment 5: Maintenance & Inspection of Stormwater Facilities
Attachment 6: Housekeeping Plan
Attachment 7: Pond Test Pit Log/Memo
Attachment 8: Post Development Stormwater Treatment Map

Attachment 1

Site Figures

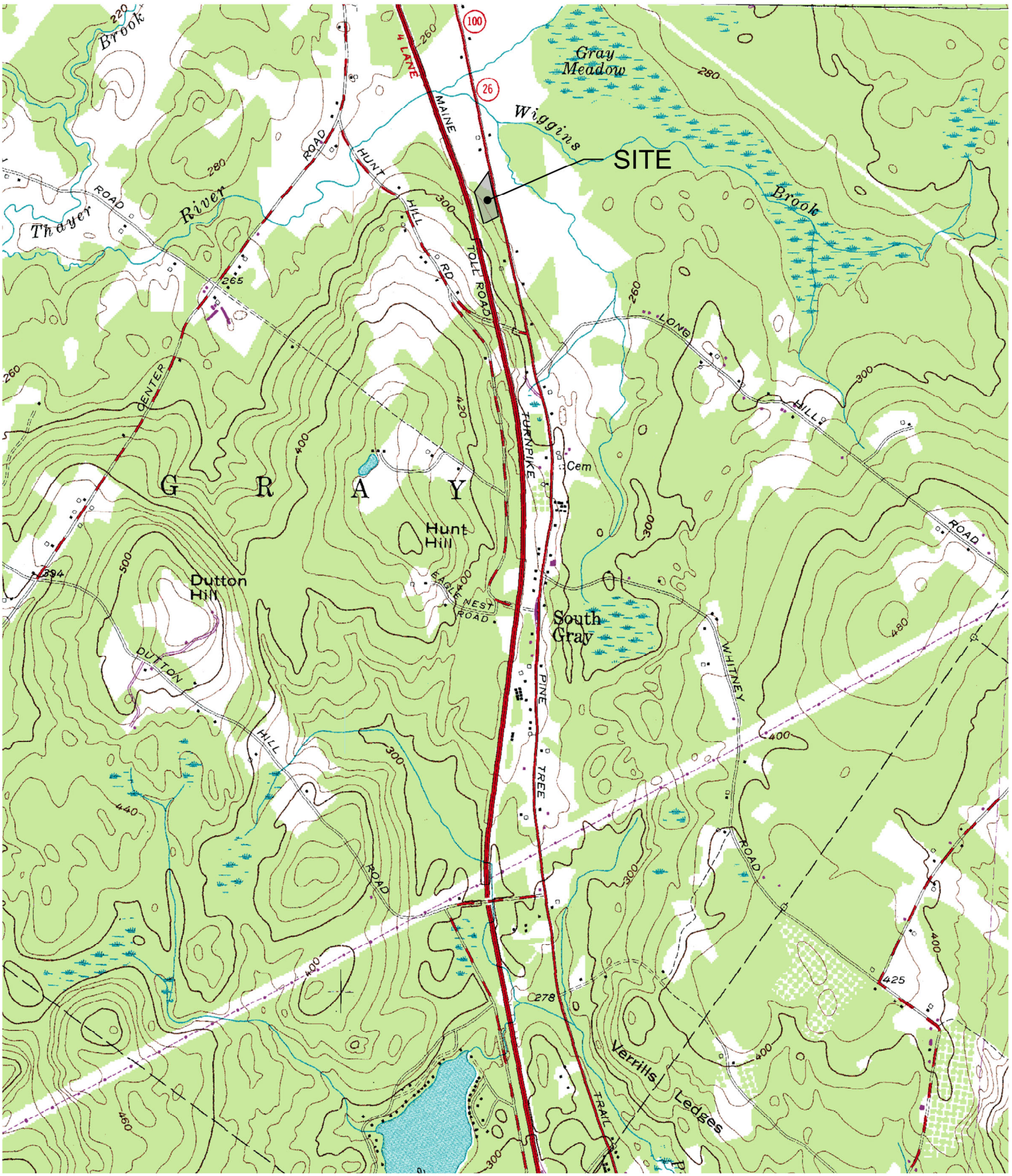


FIGURE 1:U.S.G.S. QUADRANGLE MAP	TERRADYN CONSULTANTS, LLC	PROJECT NO. 2125	SHEET 1
PROJECT: CURETON SELF STORAGE	PINELAND 41 CAMPUS DRIVE, SUITE 101 NEW GLOUCESTER, ME 04260	DATE 4/21/2021	OF 2
PREPARED FOR: BETH CURETON 29 DERBY LANE NORTH YARMOUTH, ME 04097	PORTLAND 565 CONGRESS STREET, SUITE 201 PORTLAND, ME 04101	SCALE 1"=2,000'	
	207.926.5111 • info@terradynconsultants.com • www.terradynconsultants.com		



FIGURE 2: AERIAL MAP

PROJECT:
CURETON SELF STORAGE

PREPARED FOR:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

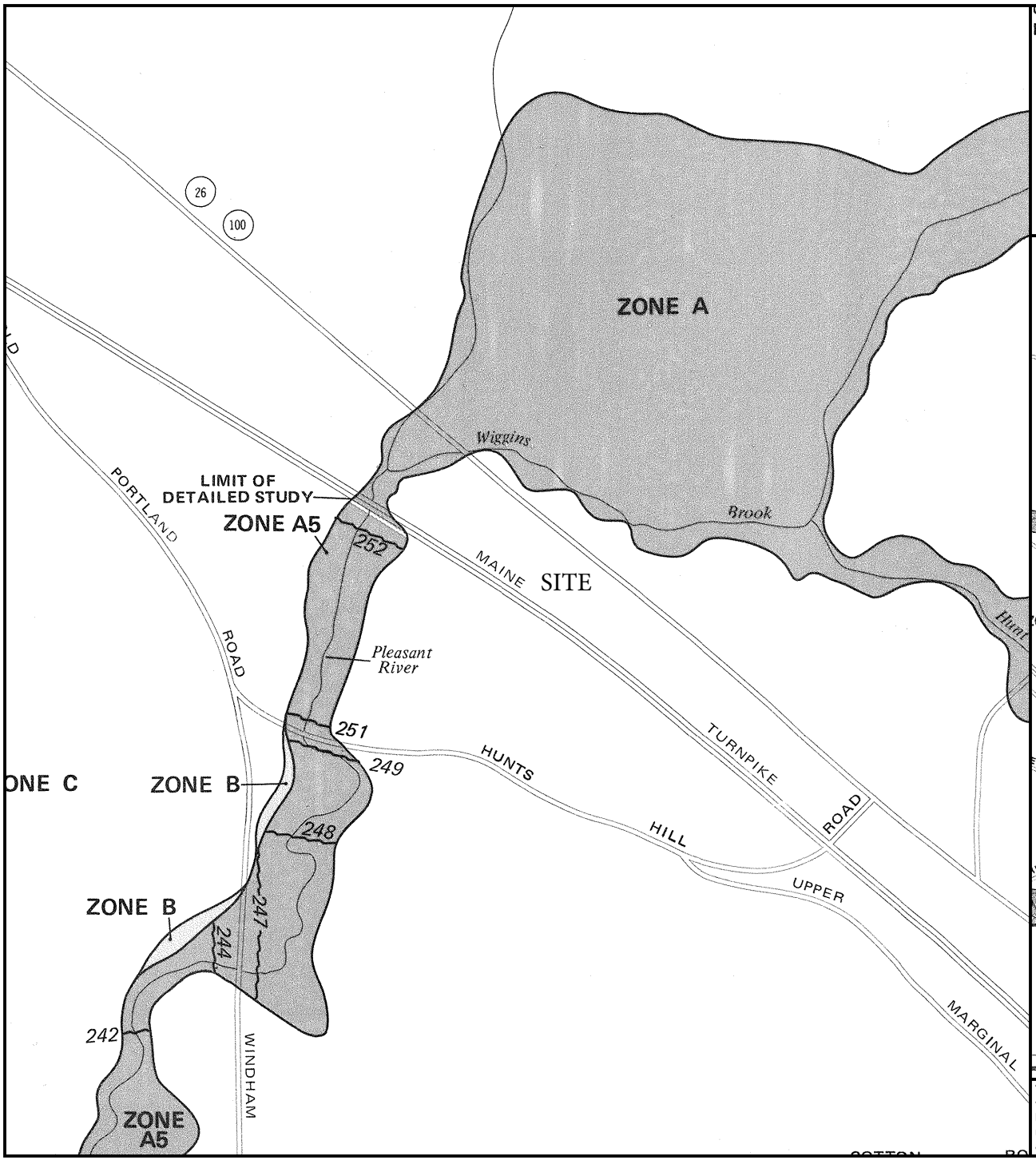
TERRADYN CONSULTANTS, LLC

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NEW GLOUCESTER, ME 04260

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565 CONGRESS STREET, SUITE 201
PORTLAND, ME 04101

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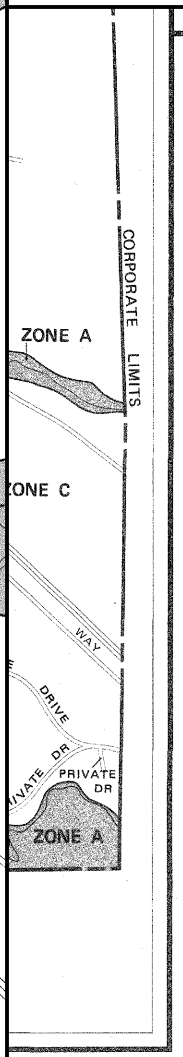
PROJECT NO.	SHEET
2125	2
DATE	OF
4/21/2021	2
SCALE	
1"=200'	



contact your insurance agent, or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE

1000 0 1000 FEET



NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
GRAY, MAINE
CUMBERLAND COUNTY

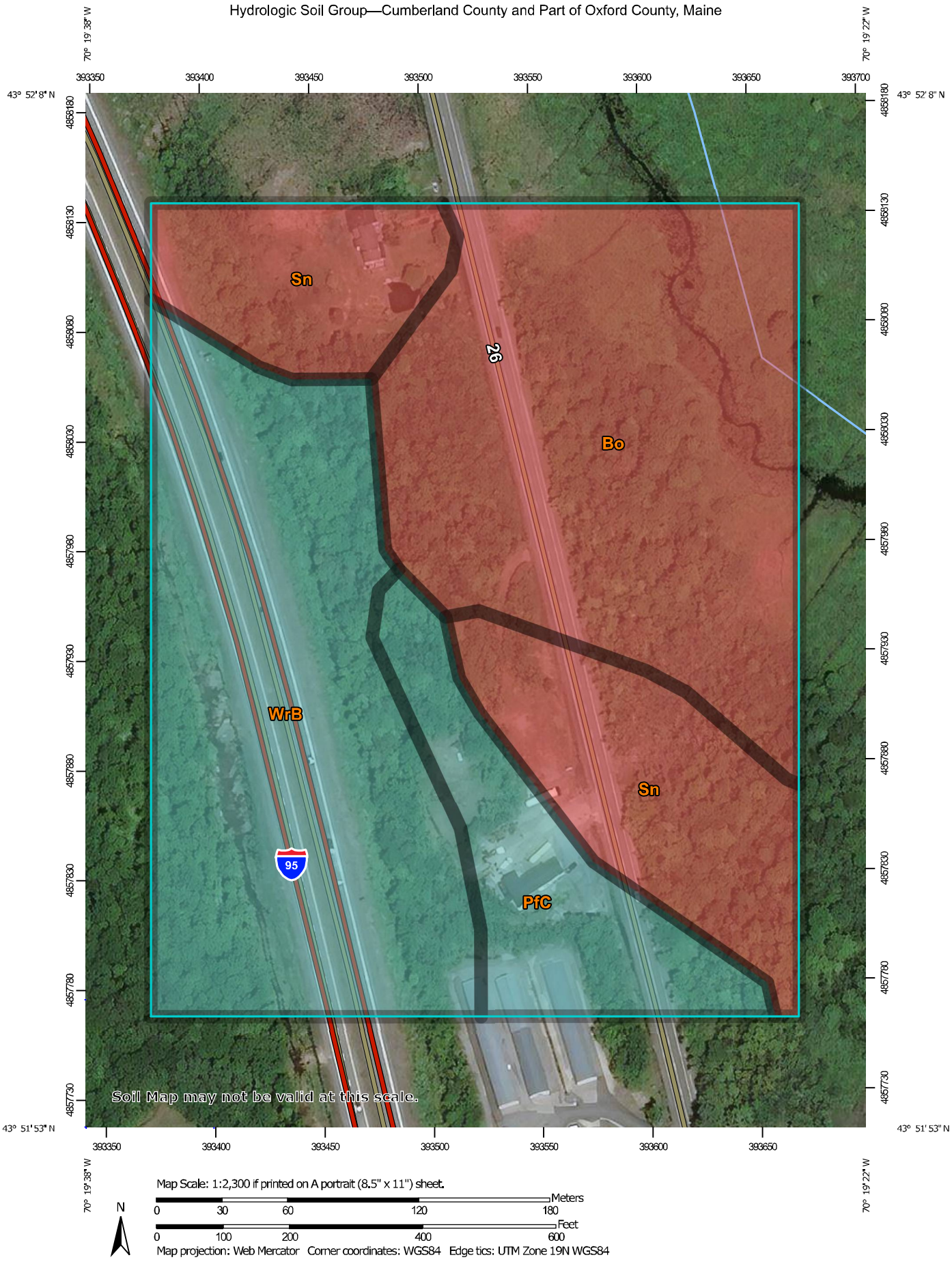
PANEL 15 OF 15
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230048 0015 A

EFFECTIVE DATE:
JANUARY 6,1982

federal emergency management agency

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at https://msc.fema.gov.



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MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 17, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 7, 2019—Jul 2, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Bo	Biddeford mucky peat, 0 to 3 percent slopes	D	9.5	34.8%
PfC	Paxton very stony fine sandy loam, 8 to 15 percent slopes	C	3.0	10.9%
Sn	Scantic silt loam, 0 to 3 percent slopes	D	5.7	20.9%
WrB	Woodbridge fine sandy loam, 0 to 8 percent slopes	C	9.1	33.4%
Totals for Area of Interest			**27.2**	**100.0%**

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Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

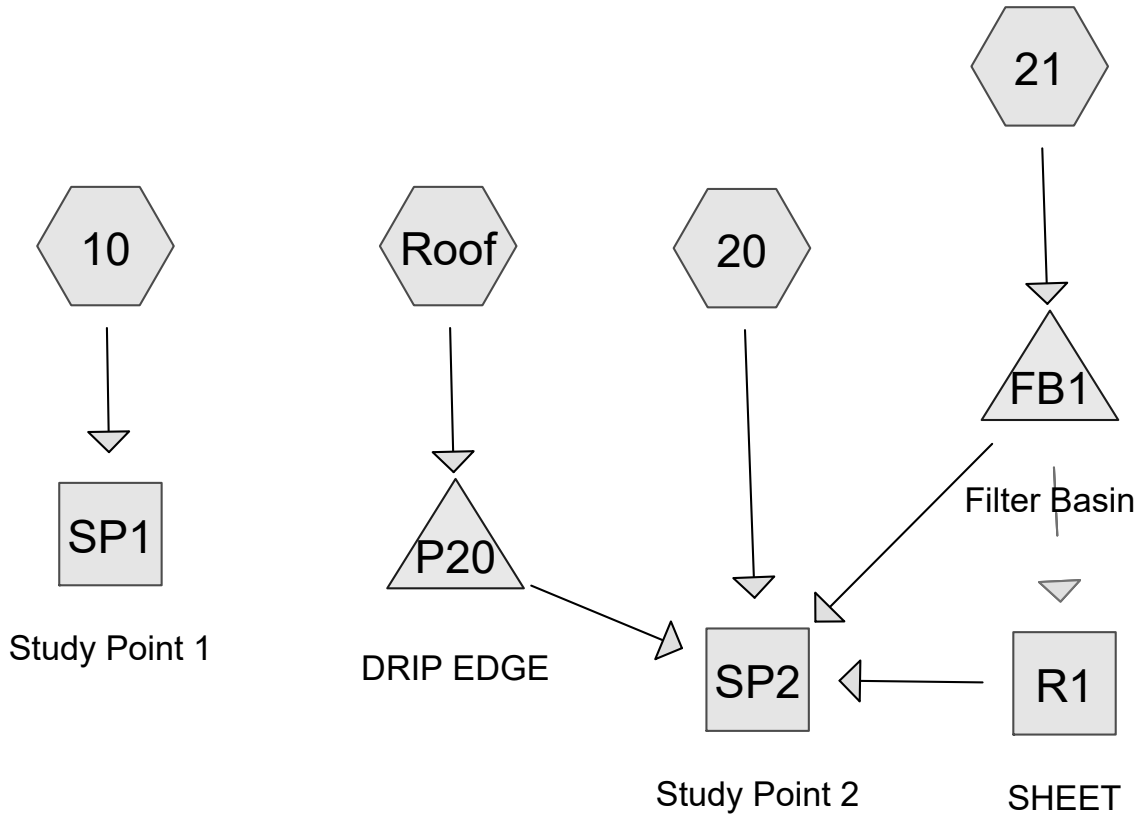
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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Attachment 2

Post Development Hydrocad Calculations



Subcat Reach Pond Link

Routing Diagram for 2125 Post with RDF
Prepared by {enter your company name here}, Printed 5/19/2022
HydroCAD® 10.00-26 s/n 10466 © 2020 HydroCAD Software Solutions LLC

Time span=2.00-72.00 hrs, dt=0.05 hrs, 1401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10: Runoff Area=48,485 sf 10.05% Impervious Runoff Depth=1.03"
Flow Length=370' Tc=23.9 min CN=75 Runoff=0.79 cfs 0.095 af

Subcatchment 20: Runoff Area=150,266 sf 8.78% Impervious Runoff Depth=1.14"
Flow Length=625' Tc=116.1 min CN=77 Runoff=1.12 cfs 0.328 af

Subcatchment 21: Runoff Area=64,316 sf 88.54% Impervious Runoff Depth=2.55"
Flow Length=376' Tc=3.0 min CN=95 Runoff=4.52 cfs 0.313 af

Subcatchment Roof: Runoff Area=7,000 sf 100.00% Impervious Runoff Depth>2.87"
Tc=6.0 min CN=98 Runoff=0.47 cfs 0.038 af

Reach R1: SHEET Avg. Flow Depth=0.10' Max Vel=0.03 fps Inflow=0.05 cfs 0.212 af
n=0.800 L=150.0' S=0.0067 '/' Capacity=0.24 cfs Outflow=0.05 cfs 0.204 af

Reach SP1: Study Point 1 Inflow=0.79 cfs 0.095 af
Outflow=0.79 cfs 0.095 af

Reach SP2: Study Point 2 Inflow=1.18 cfs 0.599 af
Outflow=1.18 cfs 0.599 af

Pond FB1: Filter Basin Peak Elev=101.52' Storage=10,093 cf Inflow=4.52 cfs 0.313 af
Primary=0.16 cfs 0.033 af Secondary=0.05 cfs 0.212 af Outflow=0.20 cfs 0.245 af

Pond P20: DRIP EDGE Peak Elev=103.70' Storage=0.012 af Inflow=0.47 cfs 0.038 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0200 '/' Outflow=0.24 cfs 0.034 af

Total Runoff Area = 6.200 ac Runoff Volume = 0.775 af Average Runoff Depth = 1.50"
69.63% Pervious = 4.317 ac 30.37% Impervious = 1.883 ac

Summary for Subcatchment 10:

Runoff = 0.79 cfs @ 12.36 hrs, Volume= 0.095 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

Area (sf)	CN	Description
9,750	92	Paved roads w/open ditches, 50% imp, HSG C
5,302	74	>75% Grass cover, Good, HSG C
33,433	70	Woods, Good, HSG C
48,485	75	Weighted Average
43,610		89.95% Pervious Area
4,875		10.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	125	0.1300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.0	140	0.0570	1.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	105	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
23.9	370	Total			

Summary for Subcatchment 20:

Runoff = 1.12 cfs @ 13.58 hrs, Volume= 0.328 af, Depth= 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
	22,750	92	Paved roads w/open ditches, 50% imp, HSG C
*	1,824	98	Impervious
	10,500	74	>75% Grass cover, Good, HSG C
	46,901	70	Woods, Good, HSG C
	68,291	77	Woods, Good, HSG D
	150,266	77	Weighted Average
	137,067		91.22% Pervious Area
	13,199		8.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.9	150	0.0600	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.4	190	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
75.8	150	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
5.0	135	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
116.1	625	Total			

Summary for Subcatchment 21:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.52 cfs @ 12.05 hrs, Volume= 0.313 af, Depth= 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
*	56,946	98	Impervious
	7,370	74	>75% Grass cover, Good, HSG C
	64,316	95	Weighted Average
	7,370		11.46% Pervious Area
	56,946		88.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	36	0.0200	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
1.7	150	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	190	0.0050	4.03	4.95	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
3.0	376	Total			

Summary for Subcatchment Roof:

Runoff = 0.47 cfs @ 12.09 hrs, Volume= 0.038 af, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
*	7,000	98	Buildings
	7,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Reach R1: SHEET

Inflow = 0.05 cfs @ 14.37 hrs, Volume= 0.212 af
Outflow = 0.05 cfs @ 21.28 hrs, Volume= 0.204 af, Atten= 0%, Lag= 414.7 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.03 fps, Min. Travel Time= 81.4 min
Avg. Velocity = 0.03 fps, Avg. Travel Time= 87.6 min

Peak Storage= 232 cf @ 19.92 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 0.25' Flow Area= 4.4 sf, Capacity= 0.24 cfs

15.00' x 0.25' deep channel, n= 0.800
Side Slope Z-value= 10.0 '/' Top Width= 20.00'
Length= 150.0' Slope= 0.0067 '/'
Inlet Invert= 98.00', Outlet Invert= 97.00'



‡

Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.113 ac, 10.05% Impervious, Inflow Depth = 1.03" for 2 Year event
Inflow = 0.79 cfs @ 12.36 hrs, Volume= 0.095 af
Outflow = 0.79 cfs @ 12.36 hrs, Volume= 0.095 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: Study Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.087 ac, 34.82% Impervious, Inflow Depth > 1.41" for 2 Year event
Inflow = 1.18 cfs @ 13.57 hrs, Volume= 0.599 af
Outflow = 1.18 cfs @ 13.57 hrs, Volume= 0.599 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs

Summary for Pond FB1: Filter Basin

Inflow Area = 1.476 ac, 88.54% Impervious, Inflow Depth = 2.55" for 2 Year event
Inflow = 4.52 cfs @ 12.05 hrs, Volume= 0.313 af
Outflow = 0.20 cfs @ 14.37 hrs, Volume= 0.245 af, Atten= 96%, Lag= 139.2 min
Primary = 0.16 cfs @ 14.37 hrs, Volume= 0.033 af
Secondary = 0.05 cfs @ 14.37 hrs, Volume= 0.212 af

Routing by Stor-Ind method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 101.52' @ 14.37 hrs Surf.Area= 5,265 sf Storage= 10,093 cf

Plug-Flow detention time= 1,476.6 min calculated for 0.245 af (78% of inflow)
Center-of-Mass det. time= 1,397.8 min (2,177.0 - 779.2)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	17,134 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	4,920	0.0	0	0
100.50	4,920	40.0	4,920	4,920
101.00	5,090	100.0	2,503	7,423
102.00	5,429	100.0	5,260	12,682
102.80	5,700	100.0	4,452	17,134

Device	Routing	Invert	Outlet Devices
#1	Primary	101.50'	**20.0' long x 10.0' breadth Primary Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	98.20'	**1.0" Vert. Endcap Orifice** C= 0.600
#3	Device 2	98.50'	**4.0" Round Underdrain** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.20' S= 0.0030 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 14.37 hrs HW=101.52' (Free Discharge)
└**1=Primary Spillway** (Weir Controls 0.10 cfs @ 0.31 fps)

Secondary OutFlow Max=0.05 cfs @ 14.37 hrs HW=101.52' (Free Discharge)
└**2=Endcap Orifice** (Orifice Controls 0.05 cfs @ 8.71 fps)
└**3=Underdrain** (Passes 0.05 cfs of 0.36 cfs potential flow)

Summary for Pond P20: DRIP EDGE

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.161 ac,100.00% Impervious, Inflow Depth > 2.87" for 2 Year event
Inflow = 0.47 cfs @ 12.09 hrs, Volume= 0.038 af
Outflow = 0.24 cfs @ 12.23 hrs, Volume= 0.034 af, Atten= 49%, Lag= 8.7 min
Primary = 0.24 cfs @ 12.23 hrs, Volume= 0.034 af

Routing by Stor-Ind method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 103.70' @ 12.23 hrs Surf.Area= 0.024 ac Storage= 0.012 af

Plug-Flow detention time= 132.2 min calculated for 0.034 af (88% of inflow)
Center-of-Mass det. time= 75.6 min (833.0 - 757.4)

Volume	Invert	Avail.Storage	Storage Description
#1	102.50'	0.023 af	**3.00'W x 345.00'L x 2.50'H Prismatoid** 0.059 af Overall - 0.001 af Embedded = 0.059 af x 40.0% Voids
#2	103.00'	0.001 af	**4.0" Round Pipe Storage** Inside #1 L= 345.0' 0.001 af Overall - 0.2" Wall Thickness = 0.001 af
		0.024 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	103.00'	**4.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 103.00' / 102.00' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.24 cfs @ 12.23 hrs HW=103.70' (Free Discharge)
1=Culvert (Inlet Controls 0.24 cfs @ 2.77 fps)

Time span=2.00-72.00 hrs, dt=0.05 hrs, 1401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10: Runoff Area=48,485 sf 10.05% Impervious Runoff Depth=2.13"
Flow Length=370' Tc=23.9 min CN=75 Runoff=1.72 cfs 0.197 af

Subcatchment 20: Runoff Area=150,266 sf 8.78% Impervious Runoff Depth=2.29"
Flow Length=625' Tc=116.1 min CN=77 Runoff=2.36 cfs 0.659 af

Subcatchment 21: Runoff Area=64,316 sf 88.54% Impervious Runoff Depth=4.02"
Flow Length=376' Tc=3.0 min CN=95 Runoff=6.95 cfs 0.495 af

Subcatchment Roof: Runoff Area=7,000 sf 100.00% Impervious Runoff Depth>4.36"
Tc=6.0 min CN=98 Runoff=0.71 cfs 0.058 af

Reach R1: SHEET Avg. Flow Depth=0.10' Max Vel=0.03 fps Inflow=0.05 cfs 0.217 af
n=0.800 L=150.0' S=0.0067 '/' Capacity=0.24 cfs Outflow=0.05 cfs 0.209 af

Reach SP1: Study Point 1 Inflow=1.72 cfs 0.197 af
Outflow=1.72 cfs 0.197 af

Reach SP2: Study Point 2 Inflow=3.63 cfs 1.131 af
Outflow=3.63 cfs 1.131 af

Pond FB1: Filter Basin Peak Elev=101.65' Storage=10,814 cf Inflow=6.95 cfs 0.495 af
Primary=2.96 cfs 0.209 af Secondary=0.05 cfs 0.217 af Outflow=3.01 cfs 0.426 af

Pond P20: DRIP EDGE Peak Elev=104.11' Storage=0.016 af Inflow=0.71 cfs 0.058 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0200 '/' Outflow=0.32 cfs 0.054 af

Total Runoff Area = 6.200 ac Runoff Volume = 1.410 af Average Runoff Depth = 2.73"
69.63% Pervious = 4.317 ac 30.37% Impervious = 1.883 ac

Summary for Subcatchment 10:

Runoff = 1.72 cfs @ 12.34 hrs, Volume= 0.197 af, Depth= 2.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

Area (sf)	CN	Description
9,750	92	Paved roads w/open ditches, 50% imp, HSG C
5,302	74	>75% Grass cover, Good, HSG C
33,433	70	Woods, Good, HSG C
48,485	75	Weighted Average
43,610		89.95% Pervious Area
4,875		10.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	125	0.1300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.0	140	0.0570	1.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	105	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
23.9	370	Total			

Summary for Subcatchment 20:

Runoff = 2.36 cfs @ 13.56 hrs, Volume= 0.659 af, Depth= 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
	22,750	92	Paved roads w/open ditches, 50% imp, HSG C
*	1,824	98	Impervious
	10,500	74	>75% Grass cover, Good, HSG C
	46,901	70	Woods, Good, HSG C
	68,291	77	Woods, Good, HSG D
	150,266	77	Weighted Average
	137,067		91.22% Pervious Area
	13,199		8.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.9	150	0.0600	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.4	190	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
75.8	150	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
5.0	135	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
116.1	625	Total			

Summary for Subcatchment 21:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.95 cfs @ 12.05 hrs, Volume= 0.495 af, Depth= 4.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	56,946	98	Impervious
	7,370	74	>75% Grass cover, Good, HSG C
	64,316	95	Weighted Average
	7,370		11.46% Pervious Area
	56,946		88.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	36	0.0200	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
1.7	150	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	190	0.0050	4.03	4.95	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
3.0	376	Total			

Summary for Subcatchment Roof:

Runoff = 0.71 cfs @ 12.09 hrs, Volume= 0.058 af, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	7,000	98	Buildings
	7,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Reach R1: SHEET

Inflow = 0.05 cfs @ 12.20 hrs, Volume= 0.217 af
Outflow = 0.05 cfs @ 19.08 hrs, Volume= 0.209 af, Atten= 2%, Lag= 412.6 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.03 fps, Min. Travel Time= 81.4 min
Avg. Velocity = 0.03 fps, Avg. Travel Time= 87.7 min

Peak Storage= 232 cf @ 17.72 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 0.25' Flow Area= 4.4 sf, Capacity= 0.24 cfs

15.00' x 0.25' deep channel, n= 0.800
Side Slope Z-value= 10.0 '/' Top Width= 20.00'
Length= 150.0' Slope= 0.0067 '/'
Inlet Invert= 98.00', Outlet Invert= 97.00'



‡

Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.113 ac, 10.05% Impervious, Inflow Depth = 2.13" for 10 Year event
Inflow = 1.72 cfs @ 12.34 hrs, Volume= 0.197 af
Outflow = 1.72 cfs @ 12.34 hrs, Volume= 0.197 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: Study Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.087 ac, 34.82% Impervious, Inflow Depth > 2.67" for 10 Year event
Inflow = 3.63 cfs @ 12.21 hrs, Volume= 1.131 af
Outflow = 3.63 cfs @ 12.21 hrs, Volume= 1.131 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs

Summary for Pond FB1: Filter Basin

Inflow Area = 1.476 ac, 88.54% Impervious, Inflow Depth = 4.02" for 10 Year event
Inflow = 6.95 cfs @ 12.05 hrs, Volume= 0.495 af
Outflow = 3.01 cfs @ 12.20 hrs, Volume= 0.426 af, Atten= 57%, Lag= 9.4 min
Primary = 2.96 cfs @ 12.20 hrs, Volume= 0.209 af
Secondary = 0.05 cfs @ 12.20 hrs, Volume= 0.217 af

Routing by Stor-Ind method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 101.65' @ 12.20 hrs Surf.Area= 5,311 sf Storage= 10,814 cf

Plug-Flow detention time= 891.3 min calculated for 0.426 af (86% of inflow)
Center-of-Mass det. time= 832.0 min (1,599.7 - 767.7)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	17,134 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	4,920	0.0	0	0
100.50	4,920	40.0	4,920	4,920
101.00	5,090	100.0	2,503	7,423
102.00	5,429	100.0	5,260	12,682
102.80	5,700	100.0	4,452	17,134

Device	Routing	Invert	Outlet Devices
#1	Primary	101.50'	**20.0' long x 10.0' breadth Primary Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	98.20'	**1.0" Vert. Endcap Orifice** C= 0.600
#3	Device 2	98.50'	**4.0" Round Underdrain** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.20' S= 0.0030 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf

Primary OutFlow Max=2.94 cfs @ 12.20 hrs HW=101.65' (Free Discharge)
└**1=Primary Spillway** (Weir Controls 2.94 cfs @ 0.97 fps)

Secondary OutFlow Max=0.05 cfs @ 12.20 hrs HW=101.65' (Free Discharge)
└**2=Endcap Orifice** (Orifice Controls 0.05 cfs @ 8.89 fps)
└**3=Underdrain** (Passes 0.05 cfs of 0.37 cfs potential flow)

Summary for Pond P20: DRIP EDGE

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.161 ac,100.00% Impervious, Inflow Depth > 4.36" for 10 Year event
Inflow = 0.71 cfs @ 12.09 hrs, Volume= 0.058 af
Outflow = 0.32 cfs @ 12.26 hrs, Volume= 0.054 af, Atten= 54%, Lag= 10.6 min
Primary = 0.32 cfs @ 12.26 hrs, Volume= 0.054 af

Routing by Stor-Ind method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 104.11' @ 12.26 hrs Surf.Area= 0.024 ac Storage= 0.016 af

Plug-Flow detention time= 107.7 min calculated for 0.054 af (92% of inflow)
Center-of-Mass det. time= 63.9 min (814.5 - 750.7)

Volume	Invert	Avail.Storage	Storage Description
#1	102.50'	0.023 af	**3.00'W x 345.00'L x 2.50'H Prismatoid** 0.059 af Overall - 0.001 af Embedded = 0.059 af x 40.0% Voids
#2	103.00'	0.001 af	**4.0" Round Pipe Storage** Inside #1 L= 345.0' 0.001 af Overall - 0.2" Wall Thickness = 0.001 af
		0.024 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	103.00'	**4.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 103.00' / 102.00' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.32 cfs @ 12.26 hrs HW=104.11' (Free Discharge)
1=Culvert (Inlet Controls 0.32 cfs @ 3.70 fps)

Time span=2.00-72.00 hrs, dt=0.05 hrs, 1401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10: Runoff Area=48,485 sf 10.05% Impervious Runoff Depth=3.11"
Flow Length=370' Tc=23.9 min CN=75 Runoff=2.53 cfs 0.289 af

Subcatchment 20: Runoff Area=150,266 sf 8.78% Impervious Runoff Depth=3.31"
Flow Length=625' Tc=116.1 min CN=77 Runoff=3.43 cfs 0.950 af

Subcatchment 21: Runoff Area=64,316 sf 88.54% Impervious Runoff Depth>5.21"
Flow Length=376' Tc=3.0 min CN=95 Runoff=8.88 cfs 0.641 af

Subcatchment Roof: Runoff Area=7,000 sf 100.00% Impervious Runoff Depth>5.54"
Tc=6.0 min CN=98 Runoff=0.89 cfs 0.074 af

Reach R1: SHEET Avg. Flow Depth=0.10' Max Vel=0.03 fps Inflow=0.05 cfs 0.220 af
n=0.800 L=150.0' S=0.0067 '/' Capacity=0.24 cfs Outflow=0.05 cfs 0.212 af

Reach SP1: Study Point 1 Inflow=2.53 cfs 0.289 af
Outflow=2.53 cfs 0.289 af

Reach SP2: Study Point 2 Inflow=8.29 cfs 1.584 af
Outflow=8.29 cfs 1.584 af

Pond FB1: Filter Basin Peak Elev=101.78' Storage=11,495 cf Inflow=8.88 cfs 0.641 af
Primary=7.47 cfs 0.352 af Secondary=0.05 cfs 0.220 af Outflow=7.52 cfs 0.572 af

Pond P20: DRIP EDGE Peak Elev=104.48' Storage=0.019 af Inflow=0.89 cfs 0.074 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0200 '/' Outflow=0.38 cfs 0.070 af

Total Runoff Area = 6.200 ac Runoff Volume = 1.954 af Average Runoff Depth = 3.78"
69.63% Pervious = 4.317 ac 30.37% Impervious = 1.883 ac

Summary for Subcatchment 10:

Runoff = 2.53 cfs @ 12.34 hrs, Volume= 0.289 af, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
9,750	92	Paved roads w/open ditches, 50% imp, HSG C
5,302	74	>75% Grass cover, Good, HSG C
33,433	70	Woods, Good, HSG C
48,485	75	Weighted Average
43,610		89.95% Pervious Area
4,875		10.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	125	0.1300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.0	140	0.0570	1.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	105	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
23.9	370	Total			

Summary for Subcatchment 20:

Runoff = 3.43 cfs @ 13.55 hrs, Volume= 0.950 af, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
	22,750	92	Paved roads w/open ditches, 50% imp, HSG C
*	1,824	98	Impervious
	10,500	74	>75% Grass cover, Good, HSG C
	46,901	70	Woods, Good, HSG C
	68,291	77	Woods, Good, HSG D
	150,266	77	Weighted Average
	137,067		91.22% Pervious Area
	13,199		8.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.9	150	0.0600	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.4	190	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
75.8	150	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
5.0	135	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
116.1	625	Total			

Summary for Subcatchment 21:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 8.88 cfs @ 12.05 hrs, Volume= 0.641 af, Depth> 5.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	56,946	98	Impervious
	7,370	74	>75% Grass cover, Good, HSG C
	64,316	95	Weighted Average
	7,370		11.46% Pervious Area
	56,946		88.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	36	0.0200	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
1.7	150	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	190	0.0050	4.03	4.95	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
3.0	376	Total			

Summary for Subcatchment Roof:

Runoff = 0.89 cfs @ 12.09 hrs, Volume= 0.074 af, Depth> 5.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	7,000	98	Buildings
	7,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Reach R1: SHEET

Inflow = 0.05 cfs @ 12.10 hrs, Volume= 0.220 af
Outflow = 0.05 cfs @ 18.03 hrs, Volume= 0.212 af, Atten= 4%, Lag= 356.2 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.03 fps, Min. Travel Time= 81.3 min
Avg. Velocity = 0.03 fps, Avg. Travel Time= 87.8 min

Peak Storage= 232 cf @ 16.68 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 0.25' Flow Area= 4.4 sf, Capacity= 0.24 cfs

15.00' x 0.25' deep channel, n= 0.800
Side Slope Z-value= 10.0 '/' Top Width= 20.00'
Length= 150.0' Slope= 0.0067 '/'
Inlet Invert= 98.00', Outlet Invert= 97.00'



‡

Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.113 ac, 10.05% Impervious, Inflow Depth = 3.11" for 25 Year event
Inflow = 2.53 cfs @ 12.34 hrs, Volume= 0.289 af
Outflow = 2.53 cfs @ 12.34 hrs, Volume= 0.289 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: Study Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.087 ac, 34.82% Impervious, Inflow Depth > 3.74" for 25 Year event
Inflow = 8.29 cfs @ 12.10 hrs, Volume= 1.584 af
Outflow = 8.29 cfs @ 12.10 hrs, Volume= 1.584 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs

Summary for Pond FB1: Filter Basin

Inflow Area = 1.476 ac, 88.54% Impervious, Inflow Depth > 5.21" for 25 Year event
Inflow = 8.88 cfs @ 12.05 hrs, Volume= 0.641 af
Outflow = 7.52 cfs @ 12.10 hrs, Volume= 0.572 af, Atten= 15%, Lag= 3.1 min
Primary = 7.47 cfs @ 12.10 hrs, Volume= 0.352 af
Secondary = 0.05 cfs @ 12.10 hrs, Volume= 0.220 af

Routing by Stor-Ind method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 101.78' @ 12.10 hrs Surf.Area= 5,354 sf Storage= 11,495 cf

Plug-Flow detention time= 684.7 min calculated for 0.572 af (89% of inflow)
Center-of-Mass det. time= 632.8 min (1,394.5 - 761.7)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	17,134 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	4,920	0.0	0	0
100.50	4,920	40.0	4,920	4,920
101.00	5,090	100.0	2,503	7,423
102.00	5,429	100.0	5,260	12,682
102.80	5,700	100.0	4,452	17,134

Device	Routing	Invert	Outlet Devices
#1	Primary	101.50'	**20.0' long x 10.0' breadth Primary Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	98.20'	**1.0" Vert. Endcap Orifice** C= 0.600
#3	Device 2	98.50'	**4.0" Round Underdrain** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.20' S= 0.0030 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf

Primary OutFlow Max=7.39 cfs @ 12.10 hrs HW=101.78' (Free Discharge)
└**1=Primary Spillway** (Weir Controls 7.39 cfs @ 1.33 fps)

Secondary OutFlow Max=0.05 cfs @ 12.10 hrs HW=101.78' (Free Discharge)
└**2=Endcap Orifice** (Orifice Controls 0.05 cfs @ 9.06 fps)
└**3=Underdrain** (Passes 0.05 cfs of 0.38 cfs potential flow)

Summary for Pond P20: DRIP EDGE

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.161 ac,100.00% Impervious, Inflow Depth > 5.54" for 25 Year event
Inflow = 0.89 cfs @ 12.09 hrs, Volume= 0.074 af
Outflow = 0.38 cfs @ 12.28 hrs, Volume= 0.070 af, Atten= 57%, Lag= 11.8 min
Primary = 0.38 cfs @ 12.28 hrs, Volume= 0.070 af

Routing by Stor-Ind method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 104.48' @ 12.28 hrs Surf.Area= 0.024 ac Storage= 0.019 af

Plug-Flow detention time= 94.8 min calculated for 0.069 af (94% of inflow)
Center-of-Mass det. time= 58.1 min (805.8 - 747.7)

Volume	Invert	Avail.Storage	Storage Description
#1	102.50'	0.023 af	**3.00'W x 345.00'L x 2.50'H Prismatoid** 0.059 af Overall - 0.001 af Embedded = 0.059 af x 40.0% Voids
#2	103.00'	0.001 af	**4.0" Round Pipe Storage** Inside #1 L= 345.0' 0.001 af Overall - 0.2" Wall Thickness = 0.001 af
		0.024 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	103.00'	**4.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 103.00' / 102.00' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.38 cfs @ 12.28 hrs HW=104.48' (Free Discharge)
1=Culvert (Inlet Controls 0.38 cfs @ 4.35 fps)

Attachment 3

Pond Spillway Checks – 25 & 100 Year

Summary for Pond FB1: Filter Basin

Inflow Area = 1.476 ac, 88.54% Impervious, Inflow Depth > 5.21" for 25 Year event
Inflow = 8.88 cfs @ 12.05 hrs, Volume= 0.641 af
Outflow = 7.52 cfs @ 12.10 hrs, Volume= 0.572 af, Atten= 15%, Lag= 3.1 min
Primary = 7.47 cfs @ 12.10 hrs, Volume= 0.352 af
Secondary = 0.05 cfs @ 12.10 hrs, Volume= 0.220 af

Routing by Stor-Ind method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 101.78' @ 12.10 hrs Surf.Area= 5,354 sf Storage= 11,495 cf

Plug-Flow detention time= 684.7 min calculated for 0.572 af (89% of inflow)
Center-of-Mass det. time= 632.8 min (1,394.5 - 761.7)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	17,134 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	4,920	0.0	0	0
100.50	4,920	40.0	4,920	4,920
101.00	5,090	100.0	2,503	7,423
102.00	5,429	100.0	5,260	12,682
102.80	5,700	100.0	4,452	17,134

Device	Routing	Invert	Outlet Devices
#1	Primary	101.50'	**20.0' long x 10.0' breadth Primary Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	98.20'	**1.0" Vert. Endcap Orifice** C= 0.600
#3	Device 2	98.50'	**4.0" Round Underdrain** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.20' S= 0.0030 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf

Primary OutFlow Max=7.39 cfs @ 12.10 hrs HW=101.78' (Free Discharge)
└**1=Primary Spillway** (Weir Controls 7.39 cfs @ 1.33 fps)

Secondary OutFlow Max=0.05 cfs @ 12.10 hrs HW=101.78' (Free Discharge)
└**2=Endcap Orifice** (Orifice Controls 0.05 cfs @ 9.06 fps)
└**3=Underdrain** (Passes 0.05 cfs of 0.38 cfs potential flow)

Summary for Pond FB1: Filter Basin

[82] Warning: Early inflow requires earlier time span

Inflow Area = 1.476 ac, 88.54% Impervious, Inflow Depth > 7.50" for 100 Year event
Inflow = 12.54 cfs @ 12.05 hrs, Volume= 0.922 af
Outflow = 11.33 cfs @ 12.08 hrs, Volume= 0.853 af, Atten= 10%, Lag= 1.9 min
Primary = 11.28 cfs @ 12.08 hrs, Volume= 0.628 af
Secondary = 0.05 cfs @ 12.08 hrs, Volume= 0.225 af

Routing by Stor-Ind method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 101.87' @ 12.08 hrs Surf.Area= 5,384 sf Storage= 11,956 cf

Plug-Flow detention time= 479.8 min calculated for 0.853 af (92% of inflow)
Center-of-Mass det. time= 441.5 min (1,195.9 - 754.4)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	17,134 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	4,920	0.0	0	0
100.50	4,920	40.0	4,920	4,920
101.00	5,090	100.0	2,503	7,423
102.00	5,429	100.0	5,260	12,682
102.80	5,700	100.0	4,452	17,134

Device	Routing	Invert	Outlet Devices
#1	Primary	101.50'	**20.0' long x 10.0' breadth Primary Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	98.20'	**1.0" Vert. Endcap Orifice** C= 0.600
#3	Device 2	98.50'	**4.0" Round Underdrain** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.20' S= 0.0030 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf

Primary OutFlow Max=10.91 cfs @ 12.08 hrs HW=101.86' (Free Discharge)
↑—**1=Primary Spillway** (Weir Controls 10.91 cfs @ 1.52 fps)

Secondary OutFlow Max=0.05 cfs @ 12.08 hrs HW=101.86' (Free Discharge)
↑—**2=Endcap Orifice** (Orifice Controls 0.05 cfs @ 9.16 fps)
↑—**3=Underdrain** (Passes 0.05 cfs of 0.38 cfs potential flow)

Attachment 4

Drawdown Calculations

Hydrograph for Pond FB1: Filter Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
2.00	0.00	0	98.00	0.00	0.00	0.00
4.50	0.05	244	98.12	0.00	0.00	0.00
7.00	0.12	977	98.50	0.00	0.00	0.00
9.50	0.31	2,629	99.34	0.03	0.00	0.03
12.00	**7.29**	**10,606**	**101.61**	**1.96**	**1.91**	**0.05**
14.50	**0.37**	**10,174**	**101.53**	**0.39**	**0.34**	**0.05**
17.00	0.18	10,086	101.51	0.19	0.14	0.05
19.50	0.12	10,057	101.51	0.12	0.07	0.05
22.00	0.09	10,046	101.51	0.09	0.05	0.05
24.50	0.00	9,956	101.49	0.05	0.00	0.05
27.00	0.00	9,533	101.41	0.05	0.00	0.05
29.50	0.00	9,115	101.33	0.05	0.00	0.05
32.00	0.00	8,702	101.25	0.05	0.00	0.05
34.50	0.00	8,295	101.17	0.04	0.00	0.04
37.00	0.00	7,893	101.09	0.04	0.00	0.04
39.50	0.00	7,497	101.01	0.04	0.00	0.04
42.00	0.00	7,106	100.94	0.04	0.00	0.04
44.50	0.00	6,721	100.86	0.04	0.00	0.04
47.00	0.00	6,341	100.79	0.04	0.00	0.04
49.50	0.00	5,967	100.71	0.04	0.00	0.04
52.00	0.00	5,598	100.64	0.04	0.00	0.04
54.50	0.00	5,235	100.56	0.04	0.00	0.04
57.00	0.00	4,878	100.48	0.04	0.00	0.04
59.50	0.00	4,531	100.30	0.04	0.00	0.04
62.00	0.00	4,199	100.13	0.04	0.00	0.04
64.50	0.00	3,881	99.97	0.03	0.00	0.03
67.00	0.00	3,577	99.82	0.03	0.00	0.03
69.50	0.00	3,288	99.67	0.03	0.00	0.03
72.00	0.00	3,012	99.53	0.03	0.00	0.03

Attachment 5

Maintenance & Inspection of Stormwater Facilities

TERRADYN CONSULTANTS, LLC

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

MAINTENANCE PLAN OF STORMWATER MANAGEMENT FACILITIES

GRAY SELF STORAGE
GRAY, MAINE

Prepared by:
Jeffrey D. Amos, P.E. 10167

Project Developer: Equity Trust Company
29 Derby Lane
North Yarmouth, ME 04097

Responsible Party: Equity Trust Company
29 Derby Lane
North Yarmouth, ME 04097

List of Stormwater Measures:
Conveyance & Distribution System (Stormwater Channels & Culverts)
Roadways & Parking Surfaces
Level Lip Spreader
Grassed Underdrained Soil Filter

Introduction:
Regular inspection and maintenance of the entire stormwater management system is crucial to the long-term effectiveness of the system. The responsible party must provide regular inspection and maintenance of all permanent erosion control measures and stormwater management structures, establish any contract services required to implement the program, and keep records and a maintenance log book of inspection and maintenance activities. At a minimum, the inspection and maintenance activities outlined herein should be performed at the recommended intervals. All inspection and maintenance documentation shall be maintained for at least 5 years. This project is subject to the Maine Department of Environmental Protection's 5-year Recertification Process.

All measures must be maintained in effective operating condition. A person with knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project shall conduct the inspections. The following areas, facilities, and measures must be inspected and identified deficiencies must be corrected.

Inspection & Maintenance Tasks:

Inspections should be performed by a qualified erosion control professional. NOTE: The following instruction are excerpts from the Maine Department of Environmental Protection's *Stormwater Management for Maine, Volume III BMPs Technical Design Manual*, dated January 2006.

1. Inspect **vegetated areas**, particularly slopes and embankments, early in the growing season or after storm events resulting in one inch of rain in 24 hours to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

2. Inspect **ditches, swales and other open stormwater channels** in the spring, in late fall, and after storm events resulting in one inch of rain in 24 hours to remove any obstructions to flow, remove accumulated sediments and debris, to control vegetated growth that could obstruct flow, and to repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or sideslopes.

3. Inspect **resource and treatment buffers** once a year for evidence of erosion, concentrating flow, and encroachment by development. If flows are concentrating within a buffer, site grading, level spreaders, or ditch turn-outs must be used to ensure a more even distribution of flow into a buffer. Check down slope of all spreaders and turn-outs for erosion. If erosion is present, adjust or modify the spreader's or turnout's lip to ensure a better distribution of flow into a buffer. Clean-out any accumulation of sediment within the spreader bays or turn-out pools.

Recertification requirement:

Within three months of the expiration of each five-year interval from the date of issuance of the permit, the permittee shall certify the following to the Department.

(a) All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

(b) All aspects of the stormwater control system are operating as approved, have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system, as necessary.

(c) The stormwater maintenance plan for the site is being implemented as approved by the Department, and the maintenance log is being maintained.

(d) All proprietary systems have been maintained according to the manufacturer's recommendations. Where required by the Department, the permittee shall execute a 5-year maintenance contract with a qualified professional for the coming 5-year interval. The maintenance contract must include provisions for routine inspections, cleaning and general maintenance.

(e) The Department may waive some or all of these recertification requirements on a case-by-case basis for permittees subject to the Department's Multi-Sector General Permit ("MSGP") and/or Maine Pollutant Discharge Elimination System ("MEPDES") programs where it is demonstrated that these programs are providing stormwater control that is at least as effective as required pursuant to this Chapter.

Conveyance & Distribution Systems: (Stormwater Channels & Culverts, etc.)

1. Inspection schedule:

a. Inspect ditches, swales and other open stormwater channels in the spring, in late fall, and after heavy rains (one inch of rain in 24 hours) to remove any obstructions to flow, remove accumulated sediments and debris, to control vegetated growth that could obstruct flow, and to repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or side-slopes.

b. Inspect culverts in the spring, in late fall, and after heavy rains to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to repair any erosion damage at the culvert's inlet and outlet.

c. Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

2. Mowing: Grass should not be trimmed extremely short, as this will reduce the filtering effect of the swale (MPCA, 1989). The cut vegetation should be removed to prevent the decaying organic litter from adding pollutants to the discharge from the swale. The mowed height of the grass should be 2-4 inches taller than the maximum flow depth of the design water quality storm. A minimum mow height of 6 inches is generally recommended (Galli, 1993).

3. Erosion: It is important to install erosion and sediment control measures to stabilize this area as soon as possible and to retain any organic matter in the bottom of the trench.

4. Fertilization: Routine fertilization and/or use of pesticides is strongly discouraged. If complete re-seeding is necessary, half the original recommended rate of fertilizer should be applied with a full rate of seed.

5. Sediment Removal: The level of sediment deposition in the channel should be monitored regularly, and removed from grassed channels before permanent damage is done to the grassed vegetation, or if infiltration times are longer than 12 hours. Sediment should be removed from riprap channels when it reduces the capacity of the channel.

Roadways & Parking Surfaces:

Paved surfaces shall be swept or vacuumed at least once annually in the Spring to remove all Winter sand, and periodically during the year on an as-needed basis to minimize transportation of sediment during rainfall events.

Vegetated Swales:

Mowing: Grass should not be trimmed extremely short, as this will reduce the filtering effect of the swale (MPCA, 1989). The cut vegetation should be removed to prevent the decaying organic litter from adding pollutants to the discharge from the swale. The mowed height of the grass should be 2-4 inches taller than the maximum flow depth of the design water quality storm. A minimum mow height of 6 inches is generally recommended (Galli, 1993).

Routine Maintenance and Inspection: The area should be inspected for failures following heavy rainfall (one inch of rain in 24 hours) and repaired as necessary for newly formed channels or gullies, reseeding/sodding of bare spots, removal of trash, leaves and/or accumulated sediments, the control of woody or other undesirable vegetation and to check the condition and integrity of the check dams.
Aeration: The buffer strip may require periodic mechanical aeration to restore infiltration capacity. This aeration must be done during a time when the area can be reseeded and mulched prior to any significant rainfall.

Erosion: It is important to install erosion and sediment control measures to stabilize this area as soon as possible and to retain any organic matter in the bottom of the trench.

Fertilization: Routine fertilization and/or use of pesticides is strongly discouraged. If complete re-seeding is necessary, half the original recommended rate of fertilizer should be applied with a full rate of seed.

Sediment Removal: The level of sediment deposition in the channel should be monitored regularly, and removed from grassed channels before permanent damage is done to the grassed vegetation, or if infiltration times are longer than 12 hours. Sediment should be removed from riprap channels when it reduces the capacity of the channel.

Level Lip Spreader:

Long term maintenance of the level spreader is essential to ensure its effectiveness. Spreaders constructed of wood, asphalt, stone or concrete curbing also require inspection and maintenance.

1. **Inspections:** At least once a year and following major storms (one inch of rain in 24 hours), the level spreader pool should be inspected for sand accumulation and debris that may reduce its capacity.
2. **Sediment Removal:** Sediment build-up within the swale should be removed when it has accumulated to approximately 25% of design volume or channel capacity. Dispose of the sediments appropriately.
3. **Debris:** Remove debris such as leaf litter, branches and tree growth from the spreader.
4. **Mowing:** Vegetated spreaders may require mowing.
5. **Snow Storage:** Do not store snow within the area of the level spreader.
6. **Level Spreader Replacement:** The reconstruction of the level spreader may be necessary when sheet flow from the spreader channelize into the buffer.

GRASSED UNDERDAINED SOIL FILTER:

During the first year, the basin will be inspected semi-annually and following major storm events. Debris and sediment buildup shall be removed from the forebay and basin as needed. Mowing of a grassed basin can occur semiannually to a height no less than 6 inches. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. Maintaining good grass cover will minimize clogging with fine sediments and if ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity.

Maintenance Agreement: A legal entity should be established with responsibility for inspecting and maintaining any underdrained filter. The legal agreement establishing the entity should list specific maintenance responsibilities (including timetables) and provide for the funding to cover long-term inspection and maintenance.

Soil Filter Inspection: The soil filter should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one inch storm or greater. And that following a storms that fill the system to overflow, it drains in no less than 24 to 48 hours. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.

Soil Filter Replacement: The top several inches of the filter shall be replaced with fresh material when water ponds on the surface of the bed for more than 72 hours. The removed sediments should be disposed of in an acceptable manner.

Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.

Mowing: If mowing is desired, only hand held string trimmers or push-mowers are allowed on the filter (no tractor) and the grass bed should be mowed no more than 2 times per growing season to maintain grass heights of no less than 6 inches.

Fertilization: Fertilization of the underdrained filter area should be avoided unless absolutely necessary to establish vegetation.

Harvesting and Weeding: Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary. Add new mulch only as necessary for bioretention cell.

Enc.

Sample Maintenance Log Sheet

Sample Maintenance Log Sheet:

Stormwater Management Facilities Inspection & Maintenance Log Gray Self Storage		
General Information:		
Inspected by:	Date:	Weather:
Reason for Inspection: (Regular Inspection) (Major Rain Event)		

BMP	Conditions Observed	Repairs Needed ?
1. Vegetated Areas		
2. Ditches, Swales, Open Channels		
3. Roadway & Parking Surfaces		
4. Level Lip Spreader		
5. Soil Filter		

Detailed Repair Notes:

BMP Type	Date	Description of Repairs & Sediment Disposal

Attachment 6

Housekeeping Plan

HOUSEKEEPING PERFORMANCE STANDARDS

FOR:

GRAY SELF STORAGE

GRAY, MAINE

Project Developer: Equity Trust Company
29 Derby Lane
North Yarmouth, ME 04097

Responsible Party: Equity Trust Company
29 Derby Lane
North Yarmouth, ME 04097

Introduction:

The contractor shall be responsible for maintaining proper housekeeping standards throughout the construction phase of the project. After the construction phase has been completed, the owner or operator of the project will be responsible.

Standards:

In accordance with the housekeeping performance standards required by MDEP chapter 500 stormwater regulations, the following standards shall be met:

1. **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.
2. **Groundwater protection.** 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.
3. **Fugitive sediment and dust.** 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.

   Operations during wet months that experience tracking of mud off the site onto public roads should provide for sweeping of road areas at least once a week and prior to significant storm events. Where chronic mud tracking occurs, a stabilized construction entrance should be provided. Operations during dry months, that experience fugitive dust problems, should wet down the access roads once a week or more frequently as needed.
4. **Debris and other materials.** Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

   To prevent these materials from becoming a source of pollutants, construction and post-construction activities related to a project may be required to comply with applicable

provision of rules related to solid, universal, and hazardous waste, including, but not limited to, the Maine solid waste and hazardous waste management rules; Maine hazardous waste management rules; Maine oil conveyance and storage rules; and Maine pesticide requirements.

5. **Trench or foundation de-watering.** Trench de-watering is the removal of water from trenches, foundations, coffer dams, ponds, and other areas within the construction area that retain water after excavation. In most cases the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the department.

6. **Authorized Non-stormwater discharges.** Identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:

(a) Discharges from firefighting activity;

(b) Fire hydrant flushings;

(c) Vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);

(d) Dust control runoff in accordance with permit conditions and Appendix (C)(3);

(e) Routine external building washdown, not including surface paint removal, that does not involve detergents;

(f) Pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;

(g) Uncontaminated air conditioning or compressor condensate;

(h) Uncontaminated groundwater or spring water;

(i) Foundation or footer drain-water where flows are not contaminated;

(j) Uncontaminated excavation dewatering (see requirements in Appendix C(5));

(k) Potable water sources including waterline flushings; and

(l) Landscape irrigation.

7. **Unauthorized non-stormwater discharges .** The Department's approval under this Chapter does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with Appendix C (6). Specifically, the Department's approval does not authorize discharges of the following:

(a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;

(b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;

(c) Soaps, solvents, or detergents used in vehicle and equipment washing; and

(d) Toxic or hazardous substances from a spill or other release.

Attachment 7

Pond Test Pit Log/Memo

Mark Cenci
Geologic, Inc.

CERTIFIED GEOLOGIST/LICENSED SITE EVALUATOR

93 Mill Road • North Yarmouth, Maine 04097
Cell: 207.329.3524 • mark@markcenci.com
www.markcenci.com

Soil Investigation for Stormwater Control Feature
Gray Self-Storage, Portland Road, Gray

Date: November 26, 2021

To: Jeff Amos
Terradyn Consultants, LLC
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Summary:

A soil boring was done in a proposed stormwater control feature. The soil is a poorly drained, fine textured soil.

Dates of Investigation: November 24, 2021

Location of Investigation:

The site is located at 190 Portland Road, Gray.

Purpose of Investigation:

The purpose of the investigation was to characterize the soil texture and drainage in an area being used for stormwater control.

Methods of Investigation:

A soil auger and probe were used. A site plan of the proposed stormwater feature, also depicting prior wetlands delineation and site location features by Terradyn Consultants

was used in the field during the investigation. The soil was investigated at the site depicted on the site plan.

Results of the Investigation:

The site is at the base of a sandy, glacial till hillside and adjacent to a large wetland known as Gray Meadows.

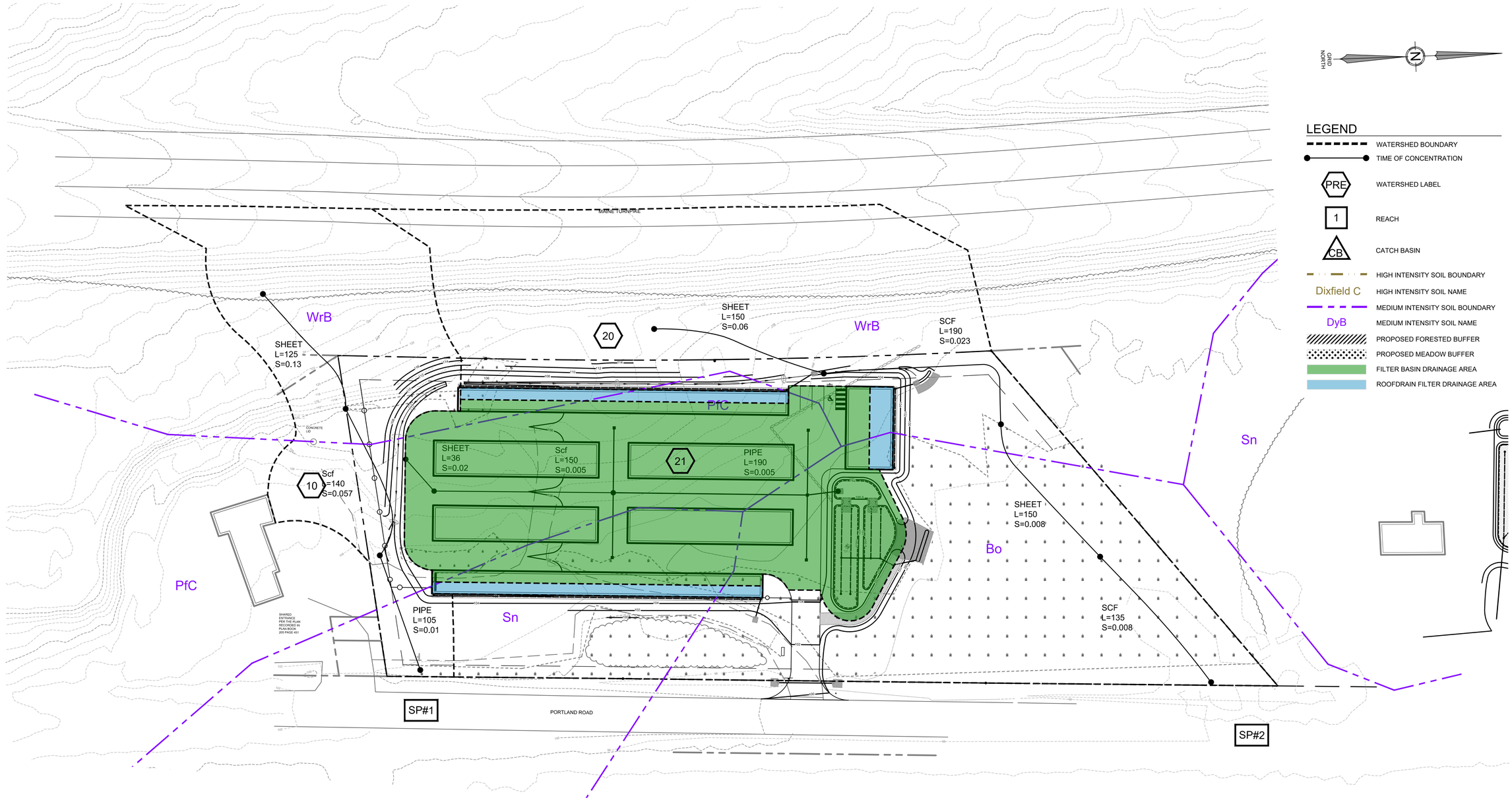
The soil is a fine sandy loam topsoil, and very fine sandy loam subsoil and a silt loam substratum. Water table mottles were visible at 8 inches below the surface and the soil was gleied in color. The soil is hydric.

[redacted]

Mark Cenci
Licensed Site Evaluator #262, Licensed Geologist #467

Attachment 8

Post Development Stormwater Treatment Map



GRID NORTH

LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- PRE — WATERSHED LABEL
- 1 — REACH
- CB — CATCH BASIN
- HIGH INTENSITY SOIL BOUNDARY
- Dixfield C — HIGH INTENSITY SOIL NAME
- MEDIUM INTENSITY SOIL BOUNDARY
- DyB — MEDIUM INTENSITY SOIL NAME
- PROPOSED FORESTED BUFFER
- PROPOSED MEADOW BUFFER
- FILTER BASIN DRAINAGE AREA
- ROOFDRAIN FILTER DRAINAGE AREA

New Impervious Area (SF) =	65770
New Landscaped Area (SF)=	23172
Developed Area (SF) =	88942

Watershed	Total Impervious Area (SF)	Total Landscaped Area (SF)	Total Developed Area (SF)	Incremental Treatment % (Impervious)	Incremental Treatment % (Developed)	BMP
10	0	5302	5302	0.00%	0.00%	None
21	56946	7370	64316	86.58%	72.31%	Filter Basin
Roof	7000	0	7000	10.64%	7.87%	Roof Drain Filter
20	1824	10500	12324	0.00%	0.00%	None
	65770	23172	88942	97.23%	80.18%	

SOILS NOTES:

SOILS WERE OBTAINED FROM THE CUMBERLAND COUNTY SOIL SURVEY AS SHOWN ON THE USDA WEB SOIL SURVEY. THE FULL OUTPUT CAN BE FOUND IN THE STORMWATER REPORT. THE SOIL SURVEY IS OF MEDIUM INTENSITY. THE SOILS ARE SUMMARIZED BELOW:

MAP UNIT SYMBOL	MAP UNIT NAME	HSG RATING
Bo	BIDDEFORD MUCKY PEAT	D
PfC	PAXTON	C
Sn	SCANTIC	D
WrB	WOODBRIDGE	C

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch =40 ft.

DATE: 3/16/2022
P.E.: 10167

NO.	DATE	REVISIONS	APPD BY
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

TERRADYN CONSULTANTS, LLC
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING
41 CAMPUS DRIVE
SUITE 305
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
OFFICE: (207) 926-5111
www.terradynconsultants.com

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE: POST DEVELOPMENT WATERSHED MAP

CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	3/16/2022
SCALE:	1"=40'
DESIGNED:	JDA
JOB NO:	2125
FILE:	

SHEET SWP-2.0

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

Job Number 21-25

December 16, 2021

Bureau of Land Resources
Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
STORWATER PERMIT APPLICATION
GRAY SELF STORAGE

Dear Staff:

On behalf of Equity Trust Company, FBO Beth Cureton, Terradyn Consultants is pleased to submit the enclosed Stormwater Permit Application for the proposed self-storage facility located at 119 Portland Road in Gray, Maine.

Chris Baldwin of the Cumberland County Soil & Water Conservation District will be reviewing the engineering calculations in lieu of the MDEP.

If you have any questions or require additional information, please contact Jeff Amos at 207-272-7571 or jeff@terradynconsultants.com.

Sincerely,

TERRADYN CONSULTANTS, LLC

[redacted]
Jeff Amos, P.E.
President

Cc. Chris Baldwin, District Engineer, CCSWCD
Beth Cureton, Applicant

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RESOURCES

FOR DEP USE
L-_____
ATS# _____
FEES PAID _____
DATE RECEIVED _____

Stormwater Application Form

PLEASE TYPE OR PRINT IN INK

This application is for (Check the one that applies):	❑ **New application** ❑ **Amendment**		
1. Name of Applicant:	Equity Trust Company	**5. Name of Agent:**	Jeff Amos, P.E. - Terradyn Consultants
2. Applicant's Mailing Address:	29 Derby Lane North Yarmouth, ME 04097	**6. Agent's Mailing Address:**	41 Campus Drive New Gloucester, ME 04260
3. Applicant's Phone #:	207-317-2014	**7. Agent's Phone #:**	207-926-5111
4. Email address (REQUIRED-license will be sent via email:	erincureton@gmail.com	**8.E-mail address (REQUIRED-license will be sent via email**	jeff@terradynconsultants.com
9. Location of Project: (Road, Street, Rt.#)	119 Portland Road (Rt 100)	**10. Town:**	Gray
		11. County:	Cumberland
12. Type of Direct Watershed: (Check all that apply)	❑ Lake not most at risk ❑ Lake most at risk ❑ Lake most at risk, severely blooming ☒ River, stream or brook ❑ Urban impaired stream ❑ Freshwater wetland ❑ Coastal wetland ❑ Wellhead of public water supply	**13. Amount of Disturbed Area:**	Total Amt.=__2.06_____acres
		14. Amount of Developed Area:	☒ 1 or more acres, but less than 5 acres ❑ 5 acres or more Total Amt.=_____acres
		15. Amount of Impervious Area:	❑ less than 20,000 sq. ft. ❑ 20,000 sq. ft. to 1 acre ☒ 1 to 3 acres ❑ 3 or more acres Total Amount of Impervious Acres =
16. Applicable Standards: (Check all that apply)	☒ Stormwater PBR ☒ Basic standards ☒ General standards: BMP ❑ General standards: phosphorus ❑ Flooding standard ❑ Urban impaired stream standards ❑ Other:_____	**17. Type of Stormwater Control:**	❑ Vegetative (e.g. buffers) ☒ Structural (e.g. underdrained filters, ponds, infiltration structures)

18. Exceptions &/or Waivers Requested:	**BMP Standards▼**	**Urban impaired stream standard▼**	**Flooding Standard▼**
	❑ Pretreatment measures ❑ Discharge to ocean/major river segment ❑ Linear portion of project ❑ Utility corridor ❑ Redevelopment	❑ Developed area not landscaped or impervious ❑ Redevelopment	❑ Discharge to ocean/major river segment ❑ Insignificant increase in peak flow

19. Proposed Start Date and Brief Project Description:	spring 2022 - Self storage facility featuring 6 buildings and an outdoor storage area.				
20. Size of Lot or Parcel:	❑ ____ sq. ft., or ☒ __3.65__acres	**UTM Easting:**		**UTM Northing:**	
21. Title, Right or Interest:	☒ own ❑ lease ❑ purchase option ❑ written agreement				
22. Deed Reference Numbers:	Book#: 38413 38125	Page: 249 201	**24. Map and Lot Numbers:**	Map #: 59	Lot #: 31-10&14
23. DEP Staff Previously Contacted:	Dawn Hallowell	**25. Project started prior to application?**	❑ Yes ☒ No	**Completed?**	❑ Yes ❑ No

SIGNATURES / CERTIFICATIONS ON PAGE 2

26. Resubmission of Application?	❑ Yes➔ ☒ No	**If yes, previous application #**		**Previous project manager:**	
27. Written Notice of Violation?	❑ Yes➔ ☒ No	**If yes, name of DEP enforcement staff involved:**			
28. Detailed Directions to the Project Site:		Property located approxiamtely 119 Portland Road in Gray.			

29. Stormwater Permit by Rule Submissions▼	**30. Stormwater Application Submissions▼**	
❒ *This form (including signature page)*	☒ This form (including signature page)	☒ Professional & Notice Certification
❒ *Fee*	☒ Fee	☒ Basic standards submissions
❒ *Topographic Map*	☒ Proof of title, right or interest	☒ General standards submissions
❒ *Plan or Drawing*	☒ Certificate of good standing (if applicable)	❒ Flooding standard submissions
❒ *Photos of Area*	☒ Photos of Area	❒ Other standard submissions
	☒ Copy of Public Notice	❒ Compensation Fee (if required)

31. FEES, Amount Enclosed:	$994
Does the agent have an interest in the project? If yes, what is the interest?: ❑ Yes ➔ ☒ No	

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following:

CERTIFICATIONS/ SIGNATURES

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by

[redacted] **on the front page of this application (see #4 for the applicant and #9 for the**

itle Agent **Date:** 12-8-2021

Notice of Intent to Comply with Maine Construction General Permit	**With this Stormwater Law application form and my signature below, I am filing notice of my intent to** [redacted] **s of the Maine Construction General Permit ( ) of the MCGP standards.** **Signed** [redacted] **Date:** 12-8-2021

NOTE: If a Notice of Intent is required, you must [redacted] ***ithin 20 days of completing permanent stabilization of the project site.***

ADDITIONAL SIGNATURES/CERTIFICATIONS

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, [redacted]plication for stormwater approval is complete and accurate to the best of

Name (print): Jeffrey D. Amos, P.E.

Date: 12-8-2021

Re/Cert/Lic No: _____
Engineer 10167
Geologist _____
Soil Scientist _____
Land Surveyor _____
Site Evaluator _____
Active Member of the Maine Bar _____
Professional Landscape Architect _____

Jessica Brown

From: noreply@informe.org
Sent: Friday, December 17, 2021 10:00 AM
Subject: DEP Payment Receipt

Payment Receipt Confirmation

Your payment was successfully processed.

Transaction Summary

Description	Amount
DEP Payment Portal	$994.00
Service Fee	$2.00
Maine.gov Total	$996.00

Customer Information

Customer Name Jeffrey Amos
Company Name Terradyn Consultants, LLC
Local Reference ID 1714591684
Receipt Date 12/17/2021
Receipt Time 10:00:02 AM EST

Payment Information

Payment Type Credit Card
Credit Card Type VISA
Credit Card Number ******6236
Order ID 59469482
Billing Name Jeffrey Amos

Billing Information

Billing Address 41 Campus Drive, Suite 301
Billing City, State New Gloucester, ME
ZIP/Postal Code 04260
Country US
Phone Number 207-926-5111
This receipt has been emailed to the address below.
Email Address jessica@terradynconsultants.com

PUBLIC NOTICE:
NOTICE OF INTENT TO FILE

Please take notice that Equity Trust Company, c.o. Beth Cureton, of 42 Portland Road, Gray, ME 04039, (ph 207-317-2014) intends to file a Stormwater management Law permit Application with the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. § 420-D on or about December 10, 2021.

The application is for Gray Self Storage, which includes the construction of a self-storage facility to be located on property shown as lots 31-10 & 31-14 on the Town of Gray tax map 59. The parcels are located approximately at 119 Portland Road.

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comments on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Environmental Protection's office in Augusta during normal working hours. A copy of the application may also be seen at the municipal offices in Gray, Maine.

Written public comments may be sent to the regional office in Augusta at: MDEP, Central Maine Regional Office, 17 State House Station, Augusta, Maine 04333

FORM C 05/06

Public Notice Filing and Certification

The DEP Rules, Chapter 2, require an applicant to provide public notice for all Stormwater Law projects with the exception of minor revisions and condition compliance applications. In the notice, the applicant must describe the proposed activity and where it is located. **"Abutter"** for the purposes of the notice provision means any person who owns property that is BOTH (1) adjoining and (2) within one mile of the delineated project boundary, including owners of property directly across a public or private right of way.

1. **Newspaper:** You must publish the Notice of Intent to File in a newspaper circulated in the area where the activity is located. The notice must appear in the newspaper within 30 days prior to the filing of the application with the Department. You may use the attached Notice of Intent to File form, or one containing identical information, for newspaper publication and certified mailing.

2. **Abutting Property Owners:** You must send a copy of the Notice of Intent to File by certified mail to the owners of the property abutting the activity. Their names and addresses can be obtained from the town tax maps or local officials. They must receive notice within 30 days prior to the filing of the application with the Department.

3. **Municipal Office:** You must send a copy of the Notice of Intent to File and a **duplicate of the entire application** to the Municipal Office.

   ATTACH a list of then names and addresses of the owners of abutting property.

CERTIFICATION

By signing below, the applicant or authorized agent certifies that:

1. A notice of Intent to File was published in a newspaper circulated in the area where the project site is located within 30 days prior to filing the application;
2. A certified mailing of the Notice of Intent to File was sent to all abutters within 30 days of the filing of the application.
3. A certified mailing of the Notice of Intent to File, and a duplicate copy of the application was sent to the town office of the municipality in which the project is located; and
4. Provided notice of, if required, and held a public informational meeting in accordance with Chapter 2. Rules Concerning the Processing of Applications, Section 14, prior to filing the application. Notice of the meeting was sent by certified mail to abutters and to the town office of the municipality in which the project is located at least ten days prior to the meeting. Notice of the meeting was also published once in a newspaper circulated in the area where the project site is located at least seven days prior to the meeting.

The Public Informational Meeting was held on N/A.

Date

[redacted]lic attended the Public Informational Meeting.

[redacted] 12/8/2021

Date

FORM D 5/2017

Fee Worksheet

Use this form to help determine the permit fee. The fee is based upon the amount of disturbed area associated with the project. THE EXAMPLE BELOW IS NOT BASED ON CURRENT FEES. To determine current stormwater licensing fees, please visit the Department's website at: http://www.maine.gov/dep/permits/

NOTE: Ditches, swales, ditch turn-outs, level spreaders, and similar Best Management Practices (BMPs) used solely to convey or discharge water to a vegetated buffer are not considered, by themselves, to constitute structural BMPs, provided that the applicant assumes that all water quality treatment takes place in the buffer. If any treatment is assumed within the BMPs used to convey water to the buffer, they are treated as structural BMPs for the purposes of determining the applicable fee (and review period). "Disturbed area" and "impervious area" are defined in Chapter 500, Section 2(F) and (L).

Example (a): If solely vegetative control measures are used (e.g. buffers), using an example fee of $250.00* for up to one acre of disturbed area, plus $125.00† for each additional whole acre of disturbed area, the total fee is calculated as shown below.

Project will create 2.34 acres of disturbed area.

Fee = $250.00+ [$125.00 x (1)] = $375.00

Your fee:

Current fee from fee schedule plus		[1/2 current fee times # additional whole acres]		equals application fee
$_____	+	[$_____ X	(____)] =	$_____

Example (b): If any structural control measures are used (e.g. underdrained filters, ponds, infiltration systems), using an example fee of $500.00 for up to one acre of disturbed area, plus $250.00 for each additional whole acre of disturbed area, the total fee is calculated as shown below.

Project will create 2.34 acres of disturbed area.

Fee = $500.00 + [$250.00 x (1)]. Fee = $750.00.

Your fee:

Current fee from fee schedule	plus	[1/2 current fee times # additional whole acres]		equals application fee
$ 663	+	[$ 331 X	(1)] =	$ 994

* The total fee for the first acre of disturbed area is obtained by combining the processing and licensing fees contained in the current fee schedule.

† The fee for each additional whole acre of disturbed area is one-half the combined processing and licensing fee.

MAINE REAL ESTATE TAX-Paid

1002140152513

DEED OF SALE BY
PERSONAL REPRESENTATIVE (TESTATE)
(Statutory Short Form)

CHRISTOPHER WOOD, duly appointed and acting Personal Representative of the **ESTATE OF DOROTHY M. WOOD**, deceased, as shown by the probate records of Cumberland County, Maine (Docket No. 2011-0735), having given notice to each person succeeding to an interest in the real property described below at least 10 days prior to sale, by the power conferred by law and every other power, for consideration paid, grants to **EQUITY TRUST COMPANY CUSTODIAN FBO BETH ANN CURETON ROTH IRA**, of North Yarmouth, Maine whose mailing address is 29 Derby Lane, N. Yarmouth, ME 04097, the real property located on the westerly side of Portland Road (Route 100) in Gray, Cumberland County, Maine more particularly described as follows:

Reference is made to the premises described on Exhibit A attached hereto and incorporated herein.

Dated: June 24, 2021.

Estate of Dorothy M. Wood

By: [redacted]
Christopher Wood, Personal Representative

STATE OF ~~MAINE~~ Connecticut
~~CUMBERLAND~~, SS. Torrington Litchfield June 24, 2021

Personally appeared before me the above-named Christopher Wood in his said capacity and acknowledged the foregoing instrument to be his free act and deed.

[redacted]
Notary Public

[redacted]
Print Name

MONICA S. DIULIO
NOTARY PUBLIC
My Commission Expires Aug. 31, 2025

640.01

DOC :49240 BK:38413 PG:250
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
07/09/2021, 02:32:09P
Register of Deeds Jessica M. Spaulding E-RECORDED

EXHIBIT A

A certain lot or parcel of land located on the westerly side of the Portland Road (Route 100) in Gray, Cumberland County, Maine more particularly described as follows:

Beginning at a 5/8th inch capped rebar (#1328) set on the westerly sideline of Portland Road at the northerly corner of land now or formerly of Welch (Deed recorded at the Cumberland County Registry of Deeds in Book 16350, Page 203);

Thence S 52° 55' 30" W along the northwesterly sideline of Welch 358.18 feet to a 3/4 inch Iron pipe 12 inches tall on the easterly sideline of land of Maine Turnpike Authority;

Thence in a northerly direction along the sideline of said Maine Turnpike Authority land 235.53 feet to a 5/8th inch capped rebar (#1328) set at a corner of land now or formerly of D'Entremont (29451/217);

Thence N 52° 29' 09 E along D'Entremont land 373.57 feet to a 5/8th inch capped rebar (#1328) set on the westerly sideline of the Portland Road;

Thence S 03° 34' 06" W along the westerly sideline of Portland Road 247.50 feet to the point of beginning.

Being a parcel of land containing 1.56 acres and being a portion and a potion only of the premises conveyed to Dorothy Wood by deed recorded at the Cumberland County Registry of Deeds in Book 2226, Page 72.

1002140141429

MAINE REAL ESTATE TAX-Paid

WARRANTY DEED

David S. Welch and Terri L. Welch of Windham, Cumberland County, Maine, for consideration paid, grant(s) to **Equity Trust Company Custodian FBO Beth Cureton IRA**, of North Yarmouth, Cumberland County, Maine (whose mailing address is 29 Derby Lane, North Yarmouth, ME 04097) with Warranty Covenants, the following described real estate:

See "Exhibit A" Attached

For grantors' source of title, reference may be had to a deed from Robert D. Morgan and David T. Burroughs to the grantor(s) herein, dated May 22, 2001, recorded in Cumberland Registry of Deeds, Book 16350, Page 203.

Any and all other rights, easements, privileges and appurtenance belonging to the granted estate are hereby conveyed.

This conveyance is made subject to the property taxes assessed against the premises, which said taxes are to be prorated between the parties hereto as of the date of delivery of this deed in accordance with 36 M.R.S.A., sec. 558.

Witness my/our hand(s) and seal(s) this 28 day of April, 2021.

WITNESS:

_____ [redacted]
David S. Welch

_____ [redacted]
Terri L. Welch

STATE OF MAINE
Androscoggin, ss April 28, 2021

Then personally appeared the above named David S. Welch and Terri L. Welch and acknowledged the foregoing instrument to be his/her free act and deed.

Before me,

[redacted]
Notary Public/Justice of the Peace
Commission Expiration:

File No.: 2021-2893

SAMANTHA R. TIBBETTS
Notary Public - Maine
My Commission Expires
April 21, 2024

DOC :30327 BK:38125 PG:202
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
04/28/2021, 09:06:13A
Register of Deeds Nancy A. Lane E-RECORDED

File No: 2021-2893

"Exhibit A"

A certain lot or parcel of land, together with any buildings or improvements thereon, situated in the Town of Gray, County of Cumberland, and State of Maine, more particularly bounded and described as follows:

Lot B as depicted on Standard Boundary Survey, Property Plan of Lot Division dated June 3, 2005, recorded in the Cumberland County Registry of Deeds in Plan Book 205, Page 451.

Submittal Checklist

Submissions for all stormwater projects, as applicable, except stormwater PBR:

- ☒ Completed application form with signatures
- ☒ Fee worksheet & fee
- ☒ Professional & notice certification
- ☒ Notice of intent to file
- ☒ Proof of title, right, or interest
- ☐ Certificate of Good Standing (corporations only)
- ☒ Photos of the project site

Basic standards submissions:

- ☒ Erosion and sedimentation control plan
    - Location plan
    - Site details
- ☒ Inspection and maintenance plan
    - List of measures
    - Inspection & maintenance tasks
    - Task frequency
    - Responsible parties
    - Maintenance plans
- ☒ Housekeeping plan

General standards submissions:

- ☒ Narrative
- ☒ Drainage plans
- ☒ Calculations
    - Water volume
    - Buffer sizing
- ☒ Details, designs, and specification
    - Ponds
    - Underdrained vegetated filters
    - Infiltration systems
    - Buffers
- ☐ Phosphorus export calculations
- ☐ Maintenance contract

Flooding standard submissions:

- ☐ Control of peak flows
- ☐ Details, designs, and specifications

Revised 11-11-2021

STORMWATER MANAGEMENT PLAN

Gray Self Storage
Gray, Maine

The following Stormwater Management Plan has been prepared for the Gray Self Storage Projectt to evaluate stormwater runoff and erosion control for the proposed self-storage project to be located at 986 Portland Road in Gray, Maine.

Site Calculations

Total Property Area	4.1 Ac (+/-)
Total Project Impervious Area	1.53 Ac
Total Developed Area	2.06 Ac

Existing Conditions

The development parcel is located on the west side of Portland Road, near 119 Portland Road. The Maine Turnpike is located along the back property line. See attached Figure 1: USGS Quadrangle Map. The development parcel is approximately 4.1 acres and is shown as lots 31-10 & 31-14 on the Town of Gray Tax Map 59. The property contains an old driveway that connects Portland Road to a small <10,000 SF cleared area that is located directly adjacent to the neighboring commercial property to the south. The rest of the property is undeveloped forest & wetland areas. See attached Figure 2: Aerial Map.

The property drains to the Portland Road drainage system. The southern edge of the property drains to a culvert that located at the southeast corner of the property. This location is modeled as Study Point #1 in this report. The remainder of the site drains to a wetland system that is located on the northeast corner of the property. This corner is modeled as Study Point #2. Both areas drain across Portland Road where they're intercepted by Wiggins Brook before flowing into the Pleasant River.

Flooding

The development area is not located within an area of flood hazard according to the Federal Insurance Rate Map 230048 0015 A. See Figure 3: FEMA Floodmap.

Modeling Assumptions

The onsite stormwater facilities were sized utilizing the USDA Soil Conservation Service (SCS) TR-20 Runoff Simulation Model, as contained in the HydroCAD computer software program (Version 9.0). Runoff curve numbers were determined for each direct watershed by measuring the area of

each hydrologic soil group within each type of land cover. Weighted curve numbers were then calculated using curve numbers for various cover types and hydrologic soil groups, assuming "good" conditions as defined in U.S Soil Conservation Service (SCS) publications. Times of concentration and travel times were determined from site topographic maps in accordance with SCS procedures. A maximum length of 150 feet was used for sheet flow.

All of the watersheds' peak runoff rates were analyzed for the 2, 10, and 25-year frequency, 24-hour duration storm events. A Type III rainfall distribution was applied to these storms. The rainfall amounts for Cumberland County are as follows:

Storm Frequency Precipitation (in./24 hr)	
2-year	3.1
10-year	4.6
25-year	5.8

Onsite Soils

The area soils were delineated from the Cumberland County Medium Intensity Soil Survey as shown on the Soil Data Viewer on the NRCS website (See attached map). The soil survey reports the developable portion of the property consists of hydrologic group C soils. The wetlands are generally hydrologic group D soils. See Figure 4: Soils Map.

The soils are listed below:

Soil Name	Hydrologic Soil Group
Biddeford Mucky Peat (Bo)	D
Paxton (PfC)	C
Scantic (Sn)	D
Woodbridge (WrB)	C

Water Quantity (Flooding Standard)

The following table summarizes the results of stormwater calculations for the design storm events for the project areas. Calculations and computer modeling sheets are provided with this report.

Table 1 - Stormwater Runoff Summary Table
Pre-Development vs. Post-Development

Study Point #	2Yr/24Hr (cfs)		10Yr/24Hr (cfs)		25Yr/24Hr (cfs)	
	Pre	Post	Pre	Post	Pre	Post
1	0.8	0.8	1.8	1.7	2.6	2.5
2	2.6	2.2	5.4	4.4	7.8	6.2

As the above result table shows, the post-development flow rates for the 2, 10 and 25-year/24 hour design storm events do not exceed the pre-development conditions.

Water Quality (BMP Standard)

The water quality requirements will be met with the construction of an under-drained filter basin.

New Impervious Area: The project will result in the creation of approximately 66,824 SF of impervious area. The filter basin will result in the treatment of 53,900 SF of impervious area and the roof drain filters will treat approximately 11,100 SF, resulting in a treatment percentage of (65,000/66,824) =97.3%.

Percentage of Treatment of the Impervious Area =97.3% (95% req'd)

Project Developed Area: The project will result in the creation of approximately 89,552 SF of developed area. This figure includes 66,824 SF of impervious area and 22,728 SF of landscaped area. The filter basin will result in the treatment of approximately 75,228 SF of the developed area resulting in a treatment percentage of (75,228/89,552) x 100%= 84.0%.

Percentage of Treatment of the Developed Area = 84.0% (80% required)

Housekeeping and Maintenance & Inspection guidelines are attached to this report.

Filter Basin Sizing

Total Pond

STAGE (FT)	AREA (SF)	STORAGE (CF)
99.75	3915	0
100	4061	997
101	4643	5347
101.5	4934	7743
102	5225	10283
102.85	5720	14934

WATERSHED IMPERVIOUS AREA=	53900	SF
WATERSHED LANDSCAPED AREA=	10228	SF
REQUIRED WATER QUALITY VOLUME=	4853	CF
PROVIDED WATER QUALITY VOLUME=	5349	CF

The required water quality volume was calculated by multiplying the impervious area by 1.0" and the landscaped area by 0.4".

Roof Dripline Filter Bed

We propose to provide treatment for the roof runoff for buildings 1 & 6. The bed is required to provide volume for 1" of runoff from the contributing area and store it within a reservoir bed. The bed sizing is as follows:

Area of Watershed: = 5,500 SF
Treatment Volume Required: Area x runoff depth: 5,500 SF x 1/12 FT = 460 CF
Bed Sizing:
Porosity = 40% Bed Length = 275' Bed Width = 3' Bed Depth = 1.5'
Available Volume= 275' x 3' x 2.0' x 0.40 = 495 CF.

The design is adequate since the available volume exceeds the required volume. The filter strips meet the standard sizing criteria and will have a corresponding treatment factor of 0.4.

Summary

Based on the results of this evaluation, the proposed stormwater design is not expected to cause flooding, erosion or other significant adverse effects downstream of the site.

Prepared by,
Terradyn Consultants, LLC



Jeffrey D. Amos, P.E.

Attached:

Site Figures:
- USGS Quadrangle Map
- Aerial Photo
- FEMA Floodmap
- Medium Intensity Soil Map

Pre Development Hydrocad Calculations
Post Development Hydrocad Calculations
Pond Spillway Check – 25 Year
Pond Spillway Check – 100 Year
Maintenance & Inspection of Stormwater Facilities
Housekeeping Plan
Pre Development Watershed Maps
Post Development Stormwater Treatment Map

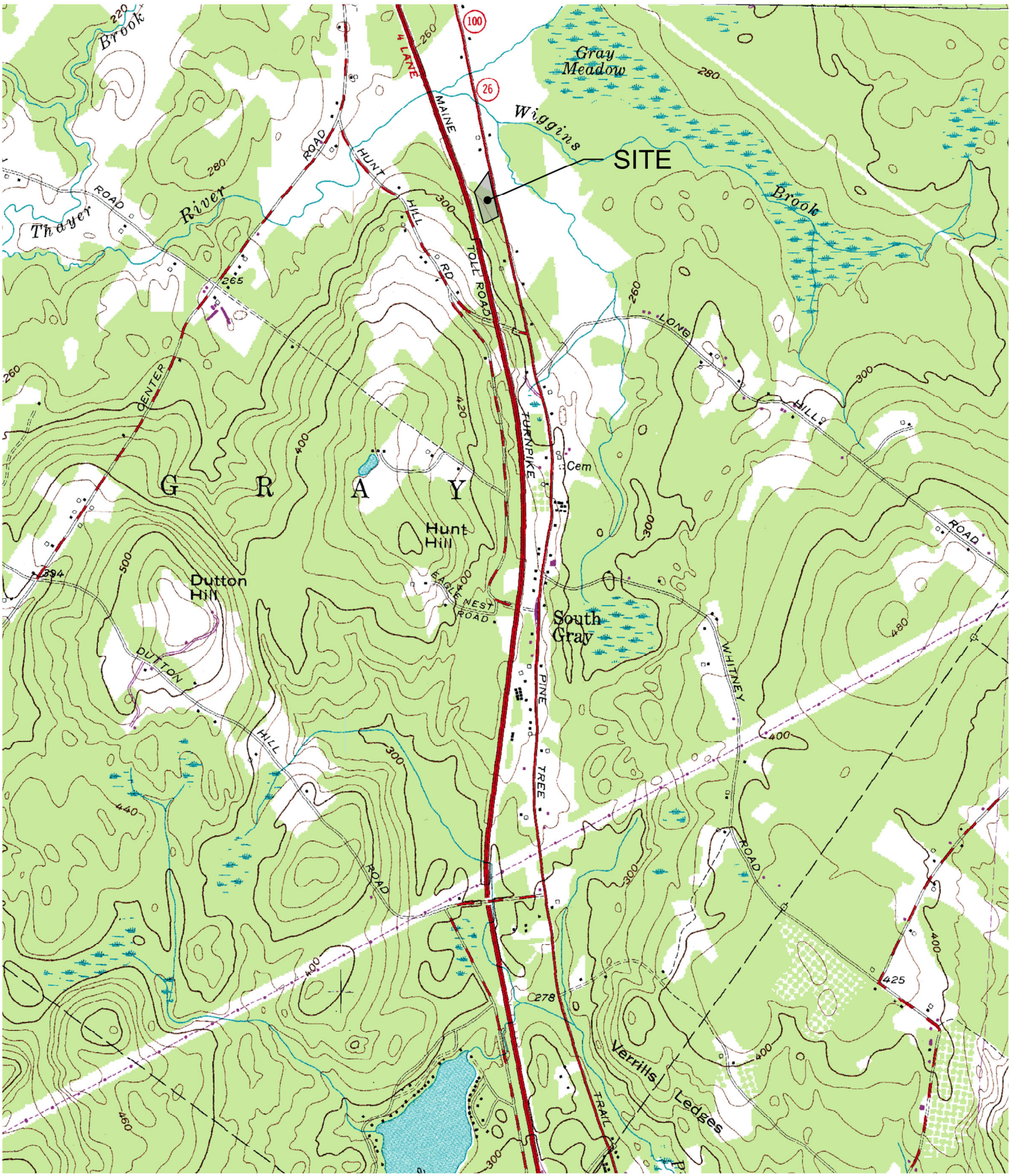


FIGURE 1:U.S.G.S. QUADRANGLE MAP

PROJECT:
CURETON SELF STORAGE

PREPARED FOR:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

TERRADYN CONSULTANTS, LLC

PINELAND
41 CAMPUS DRIVE, SUITE 101
NEW GLOUCESTER, ME 04260

PORTLAND
565 CONGRESS STREET, SUITE 201
PORTLAND, ME 04101

207.926.5111 • info@terradynconsultants.com • www.terradynconsultants.com

PROJECT NO.	SHEET
2125	1
DATE	OF
4/21/2021	2
SCALE	
1"=2,000'	



FIGURE 2: AERIAL MAP

PROJECT:
CURETON SELF STORAGE

PREPARED FOR:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

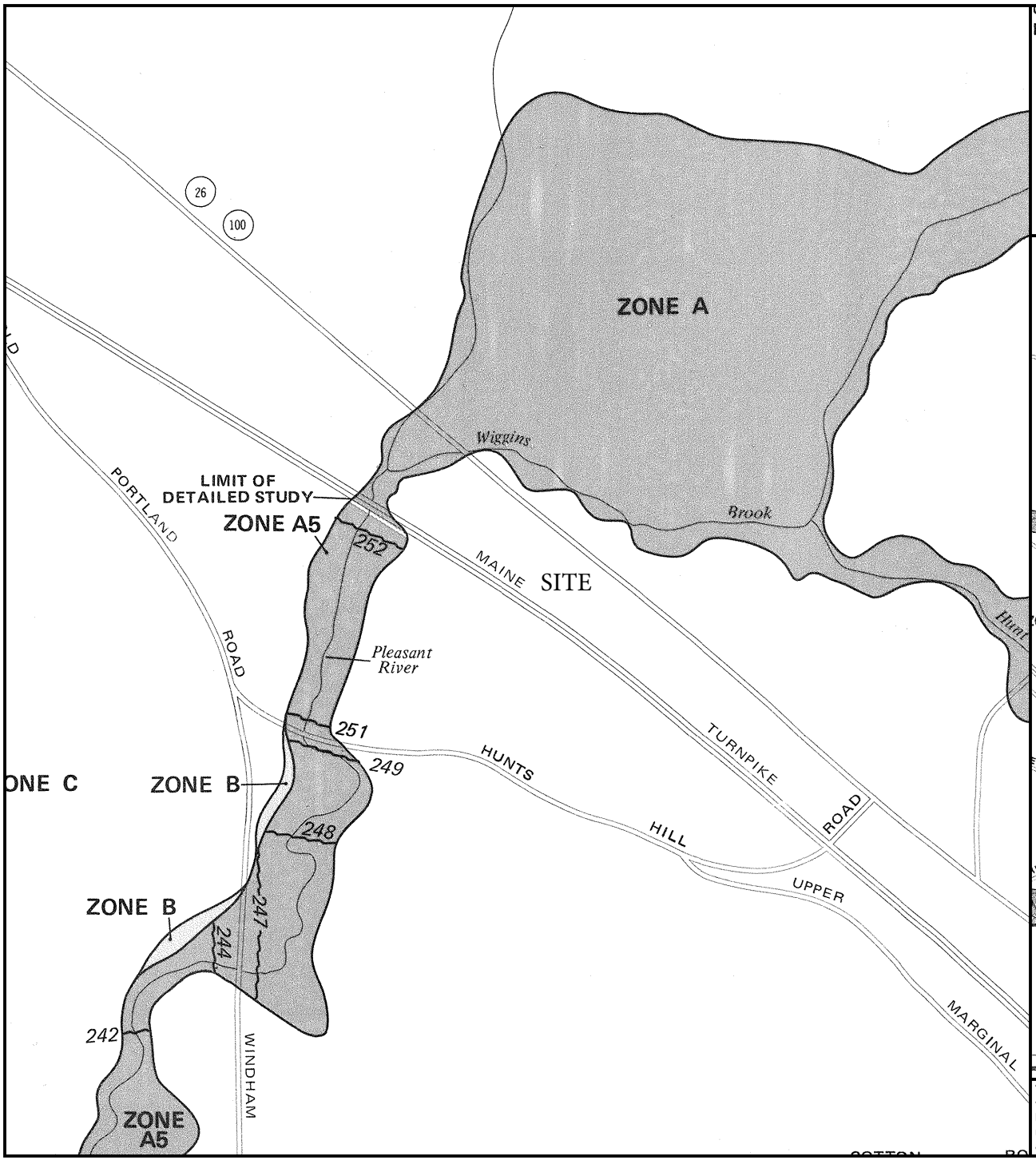
TERRADYN CONSULTANTS, LLC

PINELAND
41 CAMPUS DRIVE, SUITE 101
NEW GLOUCESTER, ME 04260

PORTLAND
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PORTLAND, ME 04101

207.926.5111 • info@terradynconsultants.com • www.terradynconsultants.com

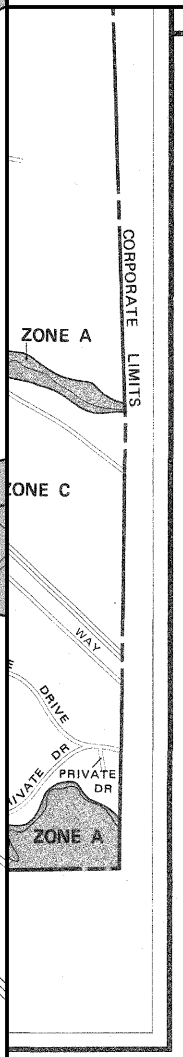
PROJECT NO.	SHEET
2125	2
DATE	OF
4/21/2021	2
SCALE	
1"=200'	



contact your insurance agent, or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE

1000 0 1000 FEET



NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
GRAY, MAINE
CUMBERLAND COUNTY

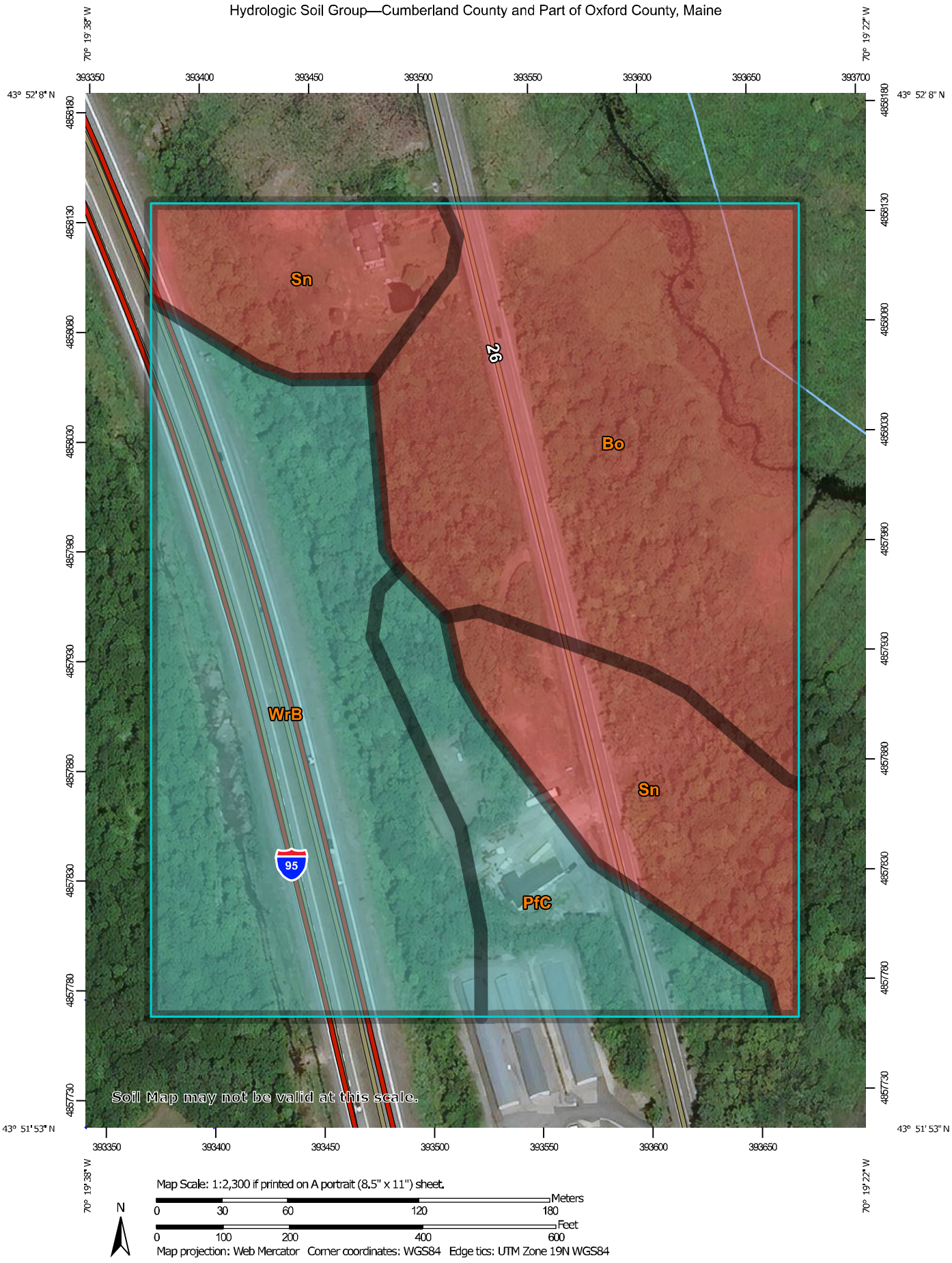
PANEL 15 OF 15
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230048 0015 A

EFFECTIVE DATE:
JANUARY 6,1982

federal emergency management agency

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at https://msc.fema.gov.



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MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 17, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 7, 2019—Jul 2, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Bo	Biddeford mucky peat, 0 to 3 percent slopes	D	9.5	34.8%
PfC	Paxton very stony fine sandy loam, 8 to 15 percent slopes	C	3.0	10.9%
Sn	Scantic silt loam, 0 to 3 percent slopes	D	5.7	20.9%
WrB	Woodbridge fine sandy loam, 0 to 8 percent slopes	C	9.1	33.4%
Totals for Area of Interest			**27.2**	**100.0%**

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Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

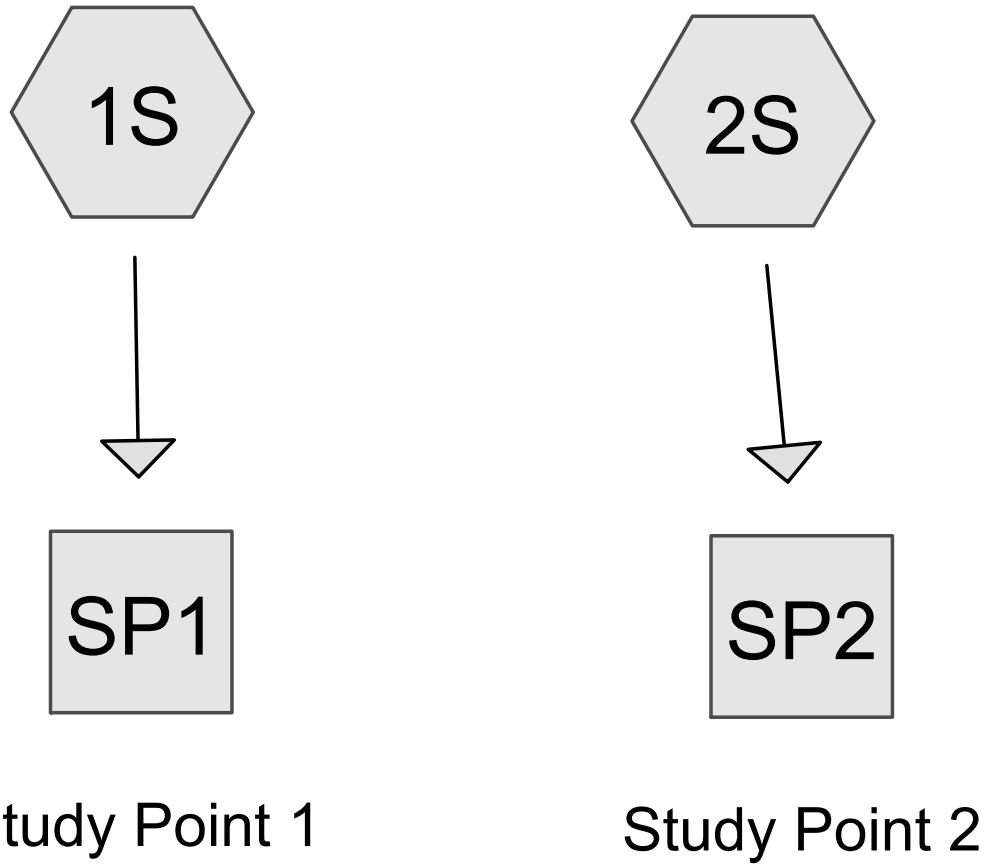
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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Subcat Reach Pond Link

Routing Diagram for 2125 Pre
Prepared by {enter your company name here}, Printed 10/25/2021
HydroCAD® 10.00-26 s/n 10466 © 2020 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=47,852 sf 17.54% Impervious Runoff Depth>0.98"
Flow Length=370' Tc=23.9 min CN=76 Runoff=0.83 cfs 0.090 af

Subcatchment 2S: Runoff Area=222,223 sf 10.67% Impervious Runoff Depth>1.02"
Flow Length=690' Tc=59.9 min CN=77 Runoff=2.59 cfs 0.434 af

Reach SP1: Study Point 1 Inflow=0.83 cfs 0.090 af
Outflow=0.83 cfs 0.090 af

Reach SP2: Study Point 2 Inflow=2.59 cfs 0.434 af
Outflow=2.59 cfs 0.434 af

Total Runoff Area = 6.200 ac Runoff Volume = 0.524 af Average Runoff Depth = 1.01"
88.12% Pervious = 5.463 ac 11.88% Impervious = 0.737 ac

Summary for Subcatchment 1S:

Runoff = 0.83 cfs @ 12.36 hrs, Volume= 0.090 af, Depth> 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
	8,750	92	Paved roads w/open ditches, 50% imp, HSG C
*	4,017	98	Gravel Pad
	35,085	70	Woods, Good, HSG C
	47,852	76	Weighted Average
	39,460		82.46% Pervious Area
	8,392		17.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	125	0.1300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.0	140	0.0570	1.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	105	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
23.9	370	Total			

Summary for Subcatchment 2S:

Runoff = 2.59 cfs @ 12.86 hrs, Volume= 0.434 af, Depth> 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
	23,750	92	Paved roads w/open ditches, 50% imp, HSG C
*	11,827	98	Gravel Pad
	96,547	70	Woods, Good, HSG C
	90,099	77	Woods, Good, HSG D
	222,223	77	Weighted Average
	198,521		89.33% Pervious Area
	23,702		10.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.9	150	0.0600	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
0.7	60	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.3	480	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
59.9	690	Total			

Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.099 ac, 17.54% Impervious, Inflow Depth > 0.98" for 2 Year event
Inflow = 0.83 cfs @ 12.36 hrs, Volume= 0.090 af
Outflow = 0.83 cfs @ 12.36 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: Study Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.102 ac, 10.67% Impervious, Inflow Depth > 1.02" for 2 Year event
Inflow = 2.59 cfs @ 12.86 hrs, Volume= 0.434 af
Outflow = 2.59 cfs @ 12.86 hrs, Volume= 0.434 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=47,852 sf 17.54% Impervious Runoff Depth>2.04"
Flow Length=370' Tc=23.9 min CN=76 Runoff=1.76 cfs 0.186 af

Subcatchment 2S: Runoff Area=222,223 sf 10.67% Impervious Runoff Depth>2.09"
Flow Length=690' Tc=59.9 min CN=77 Runoff=5.37 cfs 0.887 af

Reach SP1: Study Point 1 Inflow=1.76 cfs 0.186 af
Outflow=1.76 cfs 0.186 af

Reach SP2: Study Point 2 Inflow=5.37 cfs 0.887 af
Outflow=5.37 cfs 0.887 af

Total Runoff Area = 6.200 ac Runoff Volume = 1.073 af Average Runoff Depth = 2.08"
88.12% Pervious = 5.463 ac 11.88% Impervious = 0.737 ac

Summary for Subcatchment 1S:

Runoff = 1.76 cfs @ 12.34 hrs, Volume= 0.186 af, Depth> 2.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
	8,750	92	Paved roads w/open ditches, 50% imp, HSG C
*	4,017	98	Gravel Pad
	35,085	70	Woods, Good, HSG C
	47,852	76	Weighted Average
	39,460		82.46% Pervious Area
	8,392		17.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	125	0.1300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.0	140	0.0570	1.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	105	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
23.9	370	Total			

Summary for Subcatchment 2S:

Runoff = 5.37 cfs @ 12.83 hrs, Volume= 0.887 af, Depth> 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
	23,750	92	Paved roads w/open ditches, 50% imp, HSG C
*	11,827	98	Gravel Pad
	96,547	70	Woods, Good, HSG C
	90,099	77	Woods, Good, HSG D
	222,223	77	Weighted Average
	198,521		89.33% Pervious Area
	23,702		10.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.9	150	0.0600	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
0.7	60	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.3	480	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
59.9	690	Total			

Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.099 ac, 17.54% Impervious, Inflow Depth > 2.04" for 10 Year event
Inflow = 1.76 cfs @ 12.34 hrs, Volume= 0.186 af
Outflow = 1.76 cfs @ 12.34 hrs, Volume= 0.186 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: Study Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.102 ac, 10.67% Impervious, Inflow Depth > 2.09" for 10 Year event
Inflow = 5.37 cfs @ 12.83 hrs, Volume= 0.887 af
Outflow = 5.37 cfs @ 12.83 hrs, Volume= 0.887 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=47,852 sf 17.54% Impervious Runoff Depth>2.97"
Flow Length=370' Tc=23.9 min CN=76 Runoff=2.58 cfs 0.272 af

Subcatchment 2S: Runoff Area=222,223 sf 10.67% Impervious Runoff Depth>3.03"
Flow Length=690' Tc=59.9 min CN=77 Runoff=7.78 cfs 1.287 af

Reach SP1: Study Point 1 Inflow=2.58 cfs 0.272 af
Outflow=2.58 cfs 0.272 af

Reach SP2: Study Point 2 Inflow=7.78 cfs 1.287 af
Outflow=7.78 cfs 1.287 af

Total Runoff Area = 6.200 ac Runoff Volume = 1.559 af Average Runoff Depth = 3.02"
88.12% Pervious = 5.463 ac 11.88% Impervious = 0.737 ac

Summary for Subcatchment 1S:

Runoff = 2.58 cfs @ 12.33 hrs, Volume= 0.272 af, Depth> 2.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
	8,750	92	Paved roads w/open ditches, 50% imp, HSG C
*	4,017	98	Gravel Pad
	35,085	70	Woods, Good, HSG C
	47,852	76	Weighted Average
	39,460		82.46% Pervious Area
	8,392		17.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	125	0.1300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.0	140	0.0570	1.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	105	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
23.9	370	Total			

Summary for Subcatchment 2S:

Runoff = 7.78 cfs @ 12.82 hrs, Volume= 1.287 af, Depth> 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
	23,750	92	Paved roads w/open ditches, 50% imp, HSG C
*	11,827	98	Gravel Pad
	96,547	70	Woods, Good, HSG C
	90,099	77	Woods, Good, HSG D
	222,223	77	Weighted Average
	198,521		89.33% Pervious Area
	23,702		10.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.9	150	0.0600	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
0.7	60	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.3	480	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
59.9	690	Total			

Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.099 ac, 17.54% Impervious, Inflow Depth > 2.97" for 25 Year event
Inflow = 2.58 cfs @ 12.33 hrs, Volume= 0.272 af
Outflow = 2.58 cfs @ 12.33 hrs, Volume= 0.272 af, Atten= 0%, Lag= 0.0 min

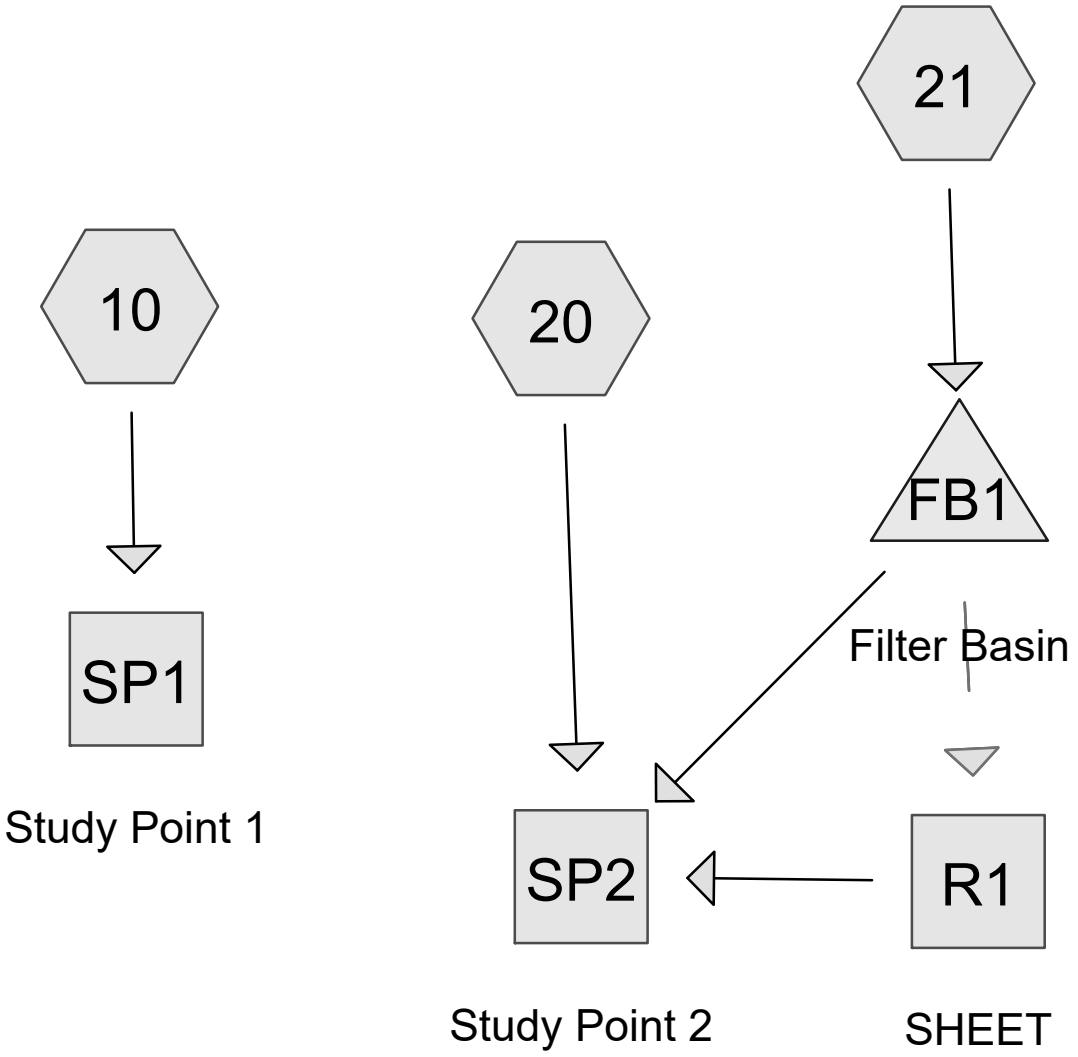
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: Study Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.102 ac, 10.67% Impervious, Inflow Depth > 3.03" for 25 Year event
Inflow = 7.78 cfs @ 12.82 hrs, Volume= 1.287 af
Outflow = 7.78 cfs @ 12.82 hrs, Volume= 1.287 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Subcat Reach Pond Link

Routing Diagram for 2125 Post
Prepared by {enter your company name here}, Printed 10/26/2021
HydroCAD® 10.00-26 s/n 10466 © 2020 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10: Runoff Area=48,485 sf 10.05% Impervious Runoff Depth>0.93"
Flow Length=370' Tc=23.9 min CN=75 Runoff=0.79 cfs 0.086 af

Subcatchment 20: Runoff Area=146,345 sf 9.02% Impervious Runoff Depth>0.99"
Flow Length=625' Tc=116.1 min CN=77 Runoff=1.09 cfs 0.278 af

Subcatchment 21: Runoff Area=75,228 sf 86.40% Impervious Runoff Depth>2.41"
Flow Length=376' Tc=3.0 min CN=95 Runoff=5.29 cfs 0.347 af

Reach R1: SHEET Avg. Flow Depth=0.89' Max Vel=0.08 fps Inflow=4.07 cfs 0.191 af
n=0.800 L=150.0' S=0.0067 '/' Capacity=0.24 cfs Outflow=1.30 cfs 0.185 af

Reach SP1: Study Point 1 Inflow=0.79 cfs 0.086 af
Outflow=0.79 cfs 0.086 af

Reach SP2: Study Point 2 Inflow=2.15 cfs 0.495 af
Outflow=2.15 cfs 0.495 af

Pond FB1: Filter Basin Peak Elev=101.21' Storage=6,354 cf Inflow=5.29 cfs 0.347 af
Primary=0.05 cfs 0.032 af Secondary=4.07 cfs 0.191 af Tertiary=0.00 cfs 0.000 af Outflow=4.12 cfs 0.223 af

Total Runoff Area = 6.200 ac Runoff Volume = 0.711 af Average Runoff Depth = 1.38"
69.24% Pervious = 4.293 ac 30.76% Impervious = 1.907 ac

Summary for Subcatchment 10:

Runoff = 0.79 cfs @ 12.36 hrs, Volume= 0.086 af, Depth> 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

Area (sf)	CN	Description
9,750	92	Paved roads w/open ditches, 50% imp, HSG C
5,302	74	>75% Grass cover, Good, HSG C
33,433	70	Woods, Good, HSG C
48,485	75	Weighted Average
43,610		89.95% Pervious Area
4,875		10.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	125	0.1300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.0	140	0.0570	1.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	105	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
23.9	370	Total			

Summary for Subcatchment 20:

Runoff = 1.09 cfs @ 13.58 hrs, Volume= 0.278 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
	22,750	92	Paved roads w/open ditches, 50% imp, HSG C
*	1,824	98	Impervious
	12,500	74	>75% Grass cover, Good, HSG C
	40,588	70	Woods, Good, HSG C
	68,683	77	Woods, Good, HSG D
	146,345	77	Weighted Average
	133,146		90.98% Pervious Area
	13,199		9.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.9	150	0.0600	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.4	190	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
75.8	150	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
5.0	135	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
116.1	625	Total			

Summary for Subcatchment 21:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.29 cfs @ 12.05 hrs, Volume= 0.347 af, Depth> 2.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.10"

	Area (sf)	CN	Description
*	65,000	98	Impervious
	10,228	74	>75% Grass cover, Good, HSG C
	75,228	95	Weighted Average
	10,228		13.60% Pervious Area
	65,000		86.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	36	0.0200	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
1.7	150	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	190	0.0050	4.03	4.95	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
3.0	376	Total			

Summary for Reach R1: SHEET

[91] Warning: Storage range exceeded by 0.64'
[55] Hint: Peak inflow is 1692% of Manning's capacity
[79] Warning: Submerged Pond FB1 Secondary device # 4 INLET by 0.69'

Inflow = 4.07 cfs @ 12.11 hrs, Volume= 0.191 af
Outflow = 1.30 cfs @ 13.00 hrs, Volume= 0.185 af, Atten= 68%, Lag= 53.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.08 fps, Min. Travel Time= 32.8 min
Avg. Velocity = 0.05 fps, Avg. Travel Time= 51.9 min

Peak Storage= 2,562 cf @ 12.45 hrs
Average Depth at Peak Storage= 0.89'
Bank-Full Depth= 0.25' Flow Area= 4.4 sf, Capacity= 0.24 cfs

15.00' x 0.25' deep channel, n= 0.800
Side Slope Z-value= 10.0 '/' Top Width= 20.00'
Length= 150.0' Slope= 0.0067 '/'
Inlet Invert= 98.00', Outlet Invert= 97.00'



‡

Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.113 ac, 10.05% Impervious, Inflow Depth > 0.93" for 2 Year event
Inflow = 0.79 cfs @ 12.36 hrs, Volume= 0.086 af
Outflow = 0.79 cfs @ 12.36 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: Study Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.087 ac, 35.29% Impervious, Inflow Depth > 1.17" for 2 Year event
Inflow = 2.15 cfs @ 13.14 hrs, Volume= 0.495 af
Outflow = 2.15 cfs @ 13.14 hrs, Volume= 0.495 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond FB1: Filter Basin

[82] Warning: Early inflow requires earlier time span

Inflow Area = 1.727 ac, 86.40% Impervious, Inflow Depth > 2.41" for 2 Year event
Inflow = 5.29 cfs @ 12.05 hrs, Volume= 0.347 af
Outflow = 4.12 cfs @ 12.11 hrs, Volume= 0.223 af, Atten= 22%, Lag= 3.8 min
Primary = 0.05 cfs @ 12.11 hrs, Volume= 0.032 af
Secondary = 4.07 cfs @ 12.11 hrs, Volume= 0.191 af
Tertiary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 101.21' @ 12.11 hrs Surf.Area= 4,764 sf Storage= 6,354 cf

Plug-Flow detention time= 136.9 min calculated for 0.223 af (64% of inflow)
Center-of-Mass det. time= 65.3 min (817.1 - 751.7)

Volume	Invert	Avail.Storage	Storage Description
#1	99.75'	14,926 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.75	3,915	0	0
100.00	4,060	997	997
101.00	4,640	4,350	5,347
101.50	4,930	2,393	7,739
102.00	5,220	2,538	10,277
102.85	5,720	4,650	14,926

Device	Routing	Invert	Outlet Devices
#1	Primary	96.80'	**1.0" Vert. Endcap Orifice** C= 0.600
#2	Device 1	97.50'	**4.0" Round Underdrain** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 97.50' / 96.80' S= 0.0070 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf
#3	Device 2	99.75'	**2.410 in/hr Soil Filter over Surface area above 99.75'** Excluded Surface area = 3,915 sf
#4	Secondary	98.20'	**15.0" Round SD-7** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 98.20' / 98.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#5	Device 4	101.00'	**12.6' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#6	Tertiary	101.45'	**15.0' long x 10.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.05 cfs @ 12.11 hrs HW=101.21' (Free Discharge)
└**1=Endcap Orifice** (Passes 0.05 cfs of 0.05 cfs potential flow)
└**2=Underdrain** (Passes 0.05 cfs of 0.42 cfs potential flow)
└**3=Soil Filter** (Exfiltration Controls 0.05 cfs)

Secondary OutFlow Max=3.92 cfs @ 12.11 hrs HW=101.21' (Free Discharge)
└**4=SD-7** (Passes 3.92 cfs of 7.20 cfs potential flow)
└**5=Sharp-Crested Rectangular Weir** (Weir Controls 3.92 cfs @ 1.49 fps)

Tertiary OutFlow Max=0.00 cfs @ 5.00 hrs HW=99.75' (Free Discharge)
└**6=Emergency Spillway** (Controls 0.00 cfs)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10: Runoff Area=48,485 sf 10.05% Impervious Runoff Depth>1.96"
Flow Length=370' Tc=23.9 min CN=75 Runoff=1.72 cfs 0.182 af

Subcatchment 20: Runoff Area=146,345 sf 9.02% Impervious Runoff Depth>2.03"
Flow Length=625' Tc=116.1 min CN=77 Runoff=2.29 cfs 0.569 af

Subcatchment 21: Runoff Area=75,228 sf 86.40% Impervious Runoff Depth>3.79"
Flow Length=376' Tc=3.0 min CN=95 Runoff=8.13 cfs 0.546 af

Reach R1: SHEET Avg. Flow Depth=1.83' Max Vel=0.08 fps Inflow=7.04 cfs 0.386 af
n=0.800 L=150.0' S=0.0067 '/' Capacity=0.24 cfs Outflow=2.87 cfs 0.376 af

Reach SP1: Study Point 1 Inflow=1.72 cfs 0.182 af
Outflow=1.72 cfs 0.182 af

Reach SP2: Study Point 2 Inflow=4.43 cfs 0.981 af
Outflow=4.43 cfs 0.981 af

Pond FB1: Filter Basin Peak Elev=101.31' Storage=6,826 cf Inflow=8.13 cfs 0.546 af
Primary=0.05 cfs 0.036 af Secondary=7.04 cfs 0.386 af Tertiary=0.00 cfs 0.000 af Outflow=7.09 cfs 0.422 af

Total Runoff Area = 6.200 ac Runoff Volume = 1.297 af Average Runoff Depth = 2.51"
69.24% Pervious = 4.293 ac 30.76% Impervious = 1.907 ac

Summary for Subcatchment 10:

Runoff = 1.72 cfs @ 12.34 hrs, Volume= 0.182 af, Depth> 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

Area (sf)	CN	Description
9,750	92	Paved roads w/open ditches, 50% imp, HSG C
5,302	74	>75% Grass cover, Good, HSG C
33,433	70	Woods, Good, HSG C
48,485	75	Weighted Average
43,610		89.95% Pervious Area
4,875		10.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	125	0.1300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.0	140	0.0570	1.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	105	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
23.9	370	Total			

Summary for Subcatchment 20:

Runoff = 2.29 cfs @ 13.56 hrs, Volume= 0.569 af, Depth> 2.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
	22,750	92	Paved roads w/open ditches, 50% imp, HSG C
*	1,824	98	Impervious
	12,500	74	>75% Grass cover, Good, HSG C
	40,588	70	Woods, Good, HSG C
	68,683	77	Woods, Good, HSG D
	146,345	77	Weighted Average
	133,146		90.98% Pervious Area
	13,199		9.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.9	150	0.0600	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.4	190	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
75.8	150	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
5.0	135	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
116.1	625	Total			

Summary for Subcatchment 21:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 8.13 cfs @ 12.05 hrs, Volume= 0.546 af, Depth> 3.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	65,000	98	Impervious
	10,228	74	>75% Grass cover, Good, HSG C
	75,228	95	Weighted Average
	10,228		13.60% Pervious Area
	65,000		86.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	36	0.0200	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
1.7	150	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	190	0.0050	4.03	4.95	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
3.0	376	Total			

Summary for Reach R1: SHEET

[91] Warning: Storage range exceeded by 1.58'
[55] Hint: Peak inflow is 2926% of Manning's capacity
[79] Warning: Submerged Pond FB1 Secondary device # 4 INLET by 1.63'

Inflow = 7.04 cfs @ 12.08 hrs, Volume= 0.386 af
Outflow = 2.87 cfs @ 12.84 hrs, Volume= 0.376 af, Atten= 59%, Lag= 45.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.08 fps, Min. Travel Time= 31.3 min
Avg. Velocity = 0.06 fps, Avg. Travel Time= 44.9 min

Peak Storage= 5,396 cf @ 12.32 hrs
Average Depth at Peak Storage= 1.83'
Bank-Full Depth= 0.25' Flow Area= 4.4 sf, Capacity= 0.24 cfs

15.00' x 0.25' deep channel, n= 0.800
Side Slope Z-value= 10.0 '/' Top Width= 20.00'
Length= 150.0' Slope= 0.0067 '/'
Inlet Invert= 98.00', Outlet Invert= 97.00'



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Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.113 ac, 10.05% Impervious, Inflow Depth > 1.96" for 10 Year event
Inflow = 1.72 cfs @ 12.34 hrs, Volume= 0.182 af
Outflow = 1.72 cfs @ 12.34 hrs, Volume= 0.182 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: Study Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.087 ac, 35.29% Impervious, Inflow Depth > 2.31" for 10 Year event
Inflow = 4.43 cfs @ 13.02 hrs, Volume= 0.981 af
Outflow = 4.43 cfs @ 13.02 hrs, Volume= 0.981 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond FB1: Filter Basin

[82] Warning: Early inflow requires earlier time span

Inflow Area = 1.727 ac, 86.40% Impervious, Inflow Depth > 3.79" for 10 Year event
Inflow = 8.13 cfs @ 12.05 hrs, Volume= 0.546 af
Outflow = 7.09 cfs @ 12.08 hrs, Volume= 0.422 af, Atten= 13%, Lag= 2.2 min
Primary = 0.05 cfs @ 12.09 hrs, Volume= 0.036 af
Secondary = 7.04 cfs @ 12.08 hrs, Volume= 0.386 af
Tertiary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 101.31' @ 12.09 hrs Surf.Area= 4,821 sf Storage= 6,826 cf

Plug-Flow detention time= 109.5 min calculated for 0.422 af (77% of inflow)
Center-of-Mass det. time= 51.2 min (795.2 - 744.0)

Volume	Invert	Avail.Storage	Storage Description
#1	99.75'	14,926 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.75	3,915	0	0
100.00	4,060	997	997
101.00	4,640	4,350	5,347
101.50	4,930	2,393	7,739
102.00	5,220	2,538	10,277
102.85	5,720	4,650	14,926

Device	Routing	Invert	Outlet Devices
#1	Primary	96.80'	**1.0" Vert. Endcap Orifice** C= 0.600
#2	Device 1	97.50'	**4.0" Round Underdrain** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 97.50' / 96.80' S= 0.0070 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf
#3	Device 2	99.75'	**2.410 in/hr Soil Filter over Surface area above 99.75'** Excluded Surface area = 3,915 sf
#4	Secondary	98.20'	**15.0" Round SD-7** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 98.20' / 98.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#5	Device 4	101.00'	**12.6' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#6	Tertiary	101.45'	**15.0' long x 10.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.05 cfs @ 12.09 hrs HW=101.31' (Free Discharge)
└**1=Endcap Orifice** (Passes 0.05 cfs of 0.06 cfs potential flow)
└**2=Underdrain** (Passes 0.05 cfs of 0.43 cfs potential flow)
└**3=Soil Filter** (Exfiltration Controls 0.05 cfs)

Secondary OutFlow Max=6.95 cfs @ 12.08 hrs HW=101.31' (Free Discharge)
└**4=SD-7** (Passes 6.95 cfs of 7.35 cfs potential flow)
└**5=Sharp-Crested Rectangular Weir** (Weir Controls 6.95 cfs @ 1.81 fps)

Tertiary OutFlow Max=0.00 cfs @ 5.00 hrs HW=99.75' (Free Discharge)
└**6=Emergency Spillway** (Controls 0.00 cfs)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10: Runoff Area=48,485 sf 10.05% Impervious Runoff Depth>2.88"
Flow Length=370' Tc=23.9 min CN=75 Runoff=2.53 cfs 0.267 af

Subcatchment 20: Runoff Area=146,345 sf 9.02% Impervious Runoff Depth>2.96"
Flow Length=625' Tc=116.1 min CN=77 Runoff=3.34 cfs 0.828 af

Subcatchment 21: Runoff Area=75,228 sf 86.40% Impervious Runoff Depth>4.90"
Flow Length=376' Tc=3.0 min CN=95 Runoff=10.39 cfs 0.705 af

Reach R1: SHEET Avg. Flow Depth=2.49' Max Vel=0.08 fps Inflow=7.54 cfs 0.543 af
n=0.800 L=150.0' S=0.0067 '/' Capacity=0.24 cfs Outflow=3.97 cfs 0.529 af

Reach SP1: Study Point 1 Inflow=2.53 cfs 0.267 af
Outflow=2.53 cfs 0.267 af

Reach SP2: Study Point 2 Inflow=6.20 cfs 1.396 af
Outflow=6.20 cfs 1.396 af

Pond FB1: Filter Basin Peak Elev=101.44' Storage=7,445 cf Inflow=10.39 cfs 0.705 af
Primary=0.05 cfs 0.038 af Secondary=7.54 cfs 0.543 af Tertiary=0.00 cfs 0.000 af Outflow=7.60 cfs 0.581 af

Total Runoff Area = 6.200 ac Runoff Volume = 1.801 af Average Runoff Depth = 3.49"
69.24% Pervious = 4.293 ac 30.76% Impervious = 1.907 ac

Summary for Subcatchment 10:

Runoff = 2.53 cfs @ 12.34 hrs, Volume= 0.267 af, Depth> 2.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
9,750	92	Paved roads w/open ditches, 50% imp, HSG C
5,302	74	>75% Grass cover, Good, HSG C
33,433	70	Woods, Good, HSG C
48,485	75	Weighted Average
43,610		89.95% Pervious Area
4,875		10.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	125	0.1300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.0	140	0.0570	1.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	105	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
23.9	370	Total			

Summary for Subcatchment 20:

Runoff = 3.34 cfs @ 13.55 hrs, Volume= 0.828 af, Depth> 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
	22,750	92	Paved roads w/open ditches, 50% imp, HSG C
*	1,824	98	Impervious
	12,500	74	>75% Grass cover, Good, HSG C
	40,588	70	Woods, Good, HSG C
	68,683	77	Woods, Good, HSG D
	146,345	77	Weighted Average
	133,146		90.98% Pervious Area
	13,199		9.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.9	150	0.0600	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.4	190	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
75.8	150	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
5.0	135	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
116.1	625	Total			

Summary for Subcatchment 21:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 10.39 cfs @ 12.05 hrs, Volume= 0.705 af, Depth> 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	65,000	98	Impervious
	10,228	74	>75% Grass cover, Good, HSG C
	75,228	95	Weighted Average
	10,228		13.60% Pervious Area
	65,000		86.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	36	0.0200	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
1.7	150	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	190	0.0050	4.03	4.95	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
3.0	376	Total			

Summary for Reach R1: SHEET

[91] Warning: Storage range exceeded by 2.24'
[55] Hint: Peak inflow is 3134% of Manning's capacity
[79] Warning: Submerged Pond FB1 Secondary device # 4 INLET by 2.29'

Inflow = 7.54 cfs @ 12.11 hrs, Volume= 0.543 af
Outflow = 3.97 cfs @ 12.82 hrs, Volume= 0.529 af, Atten= 47%, Lag= 42.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.08 fps, Min. Travel Time= 30.9 min
Avg. Velocity = 0.06 fps, Avg. Travel Time= 42.5 min

Peak Storage= 7,371 cf @ 12.30 hrs
Average Depth at Peak Storage= 2.49'
Bank-Full Depth= 0.25' Flow Area= 4.4 sf, Capacity= 0.24 cfs

15.00' x 0.25' deep channel, n= 0.800
Side Slope Z-value= 10.0 '/' Top Width= 20.00'
Length= 150.0' Slope= 0.0067 '/'
Inlet Invert= 98.00', Outlet Invert= 97.00'



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Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.113 ac, 10.05% Impervious, Inflow Depth > 2.88" for 25 Year event
Inflow = 2.53 cfs @ 12.34 hrs, Volume= 0.267 af
Outflow = 2.53 cfs @ 12.34 hrs, Volume= 0.267 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: Study Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.087 ac, 35.29% Impervious, Inflow Depth > 3.29" for 25 Year event
Inflow = 6.20 cfs @ 13.00 hrs, Volume= 1.396 af
Outflow = 6.20 cfs @ 13.00 hrs, Volume= 1.396 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond FB1: Filter Basin

[82] Warning: Early inflow requires earlier time span

Inflow Area = 1.727 ac, 86.40% Impervious, Inflow Depth > 4.90" for 25 Year event
Inflow = 10.39 cfs @ 12.05 hrs, Volume= 0.705 af
Outflow = 7.60 cfs @ 12.11 hrs, Volume= 0.581 af, Atten= 27%, Lag= 3.6 min
Primary = 0.05 cfs @ 12.11 hrs, Volume= 0.038 af
Secondary = 7.54 cfs @ 12.11 hrs, Volume= 0.543 af
Tertiary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 101.44' @ 12.11 hrs Surf.Area= 4,895 sf Storage= 7,445 cf

Plug-Flow detention time= 95.5 min calculated for 0.579 af (82% of inflow)
Center-of-Mass det. time= 45.9 min (786.4 - 740.4)

Volume	Invert	Avail.Storage	Storage Description
#1	99.75'	14,926 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

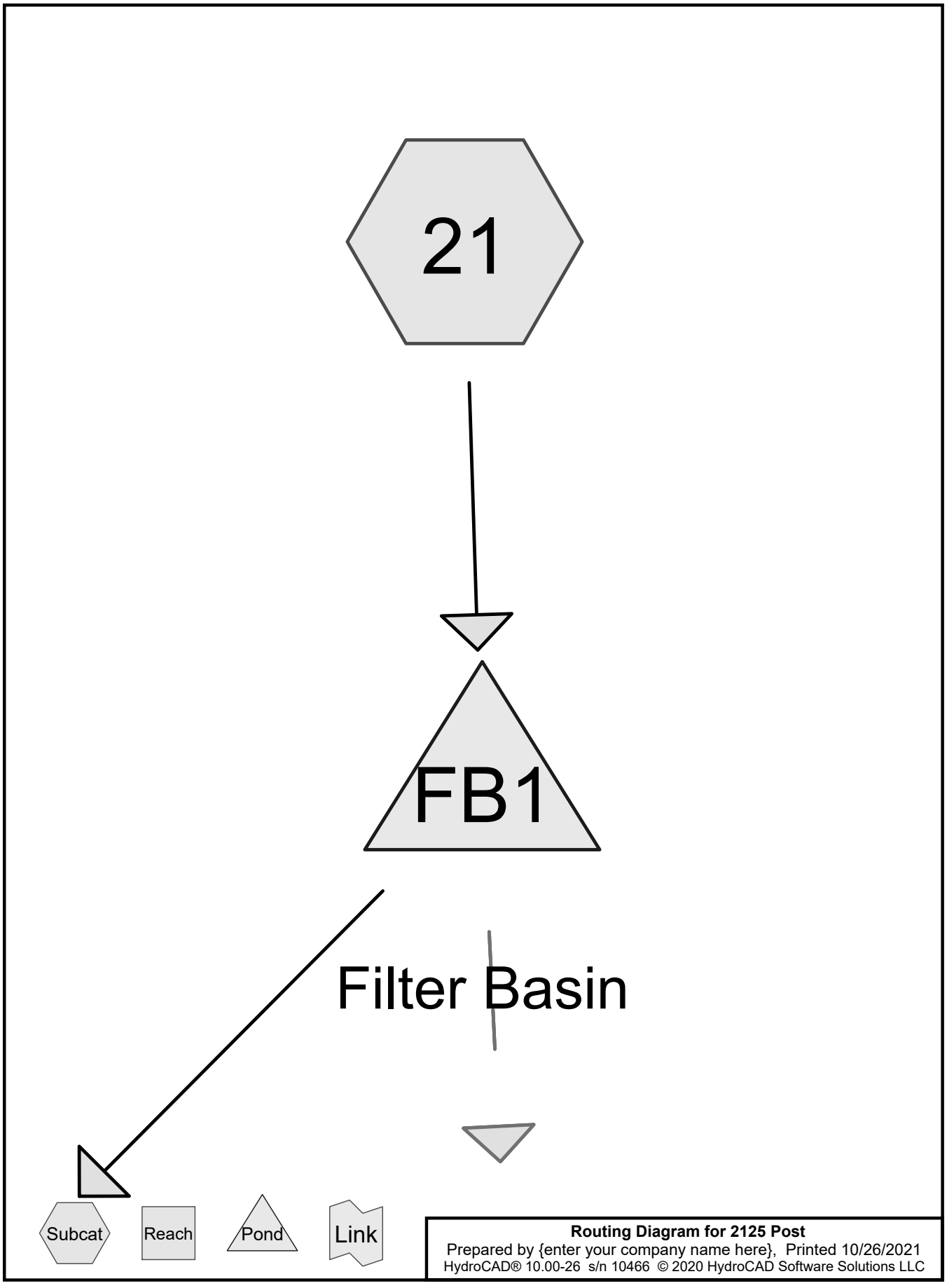
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.75	3,915	0	0
100.00	4,060	997	997
101.00	4,640	4,350	5,347
101.50	4,930	2,393	7,739
102.00	5,220	2,538	10,277
102.85	5,720	4,650	14,926

Device	Routing	Invert	Outlet Devices
#1	Primary	96.80'	**1.0" Vert. Endcap Orifice** C= 0.600
#2	Device 1	97.50'	**4.0" Round Underdrain** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 97.50' / 96.80' S= 0.0070 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf
#3	Device 2	99.75'	**2.410 in/hr Soil Filter over Surface area above 99.75'** Excluded Surface area = 3,915 sf
#4	Secondary	98.20'	**15.0" Round SD-7** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 98.20' / 98.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#5	Device 4	101.00'	**12.6' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#6	Tertiary	101.45'	**15.0' long x 10.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.05 cfs @ 12.11 hrs HW=101.44' (Free Discharge)
└**1=Endcap Orifice** (Passes 0.05 cfs of 0.06 cfs potential flow)
└**2=Underdrain** (Passes 0.05 cfs of 0.43 cfs potential flow)
└**3=Soil Filter** (Exfiltration Controls 0.05 cfs)

Secondary OutFlow Max=7.54 cfs @ 12.11 hrs HW=101.44' (Free Discharge)
└**4=SD-7** (Inlet Controls 7.54 cfs @ 6.14 fps)
└**5=Sharp-Crested Rectangular Weir** (Passes 7.54 cfs of 11.75 cfs potential flow)

Tertiary OutFlow Max=0.00 cfs @ 5.00 hrs HW=99.75' (Free Discharge)
└**6=Emergency Spillway** (Controls 0.00 cfs)



Routing Diagram for 2125 Post
Prepared by {enter your company name here}, Printed 10/26/2021
HydroCAD® 10.00-26 s/n 10466 © 2020 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment21: Runoff Area=75,228 sf 86.40% Impervious Runoff Depth>4.90"
Flow Length=376' Tc=3.0 min CN=95 Runoff=10.39 cfs 0.705 af

Pond FB1: Filter Basin Peak Elev=101.84' Storage=9,426 cf Inflow=10.39 cfs 0.705 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Tertiary=9.17 cfs 0.531 af Outflow=9.17 cfs 0.531 af

Total Runoff Area = 1.727 ac Runoff Volume = 0.705 af Average Runoff Depth = 4.90"
13.60% Pervious = 0.235 ac 86.40% Impervious = 1.492 ac

Summary for Subcatchment 21:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 10.39 cfs @ 12.05 hrs, Volume= 0.705 af, Depth> 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	65,000	98	Impervious
	10,228	74	>75% Grass cover, Good, HSG C
	75,228	95	Weighted Average
	10,228		13.60% Pervious Area
	65,000		86.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	36	0.0200	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
1.7	150	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	190	0.0050	4.03	4.95	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
3.0	376	Total			

Summary for Pond FB1: Filter Basin

[82] Warning: Early inflow requires earlier time span

Inflow Area = 1.727 ac, 86.40% Impervious, Inflow Depth > 4.90" for 25 Year event
Inflow = 10.39 cfs @ 12.05 hrs, Volume= 0.705 af
Outflow = 9.17 cfs @ 12.08 hrs, Volume= 0.531 af, Atten= 12%, Lag= 2.2 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Tertiary = 9.17 cfs @ 12.08 hrs, Volume= 0.531 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 101.84' @ 12.08 hrs Surf.Area= 5,125 sf Storage= 9,426 cf

Plug-Flow detention time= 117.5 min calculated for 0.529 af (75% of inflow)
Center-of-Mass det. time= 57.2 min (797.6 - 740.4)

Volume	Invert	Avail.Storage	Storage Description
#1	99.75'	14,926 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

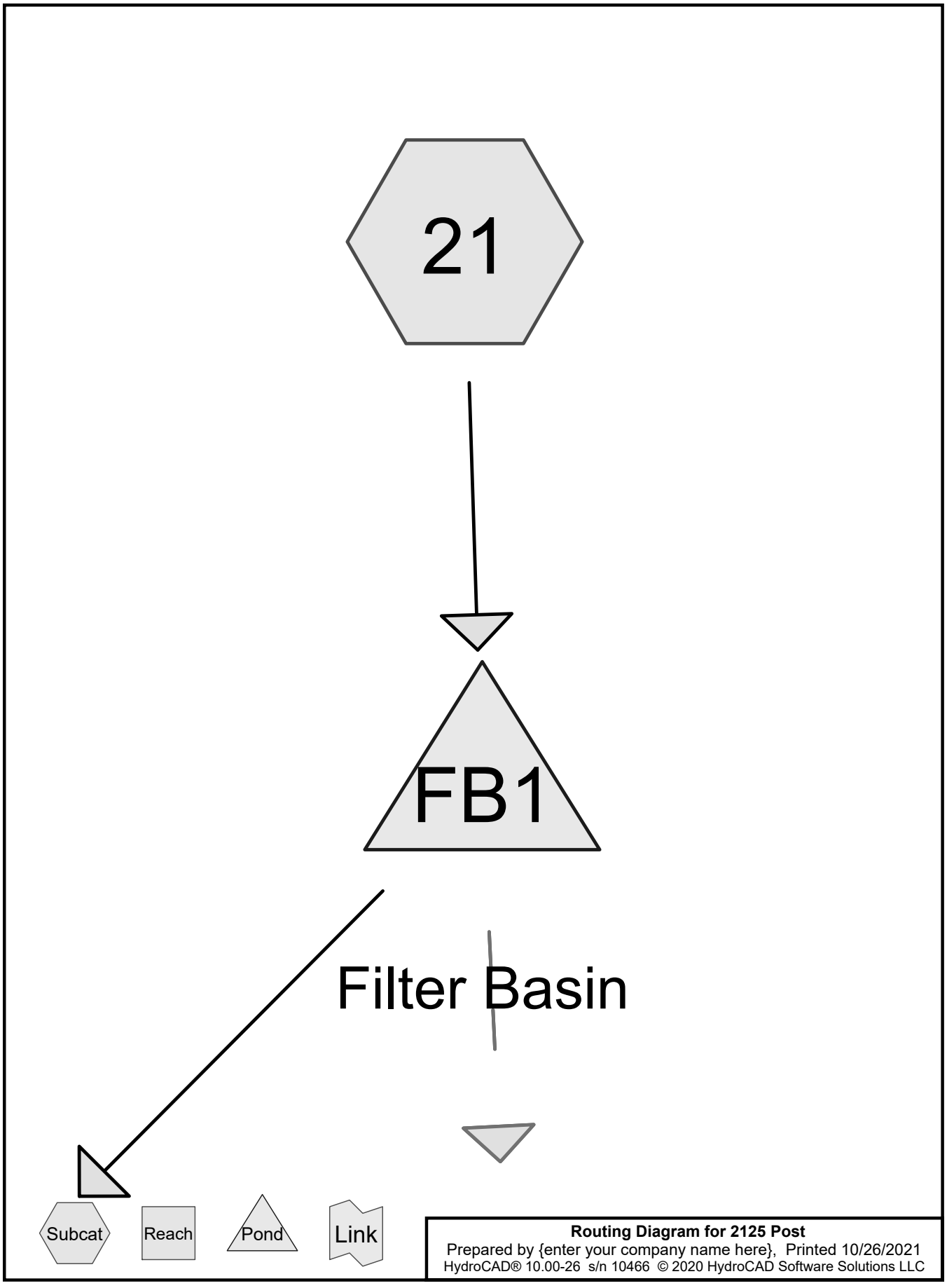
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.75	3,915	0	0
100.00	4,060	997	997
101.00	4,640	4,350	5,347
101.50	4,930	2,393	7,739
102.00	5,220	2,538	10,277
102.85	5,720	4,650	14,926

Device	Routing	Invert	Outlet Devices
#1	Primary	96.80'	**1.0" Vert. Endcap Orifice X 0.00** C= 0.600
#2	Device 1	97.50'	**4.0" Round Underdrain** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 97.50' / 96.80' S= 0.0070 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf
#3	Device 2	99.75'	**2.410 in/hr Soil Filter over Surface area above 99.75'** Excluded Surface area = 3,915 sf
#4	Secondary	98.20'	**15.0" Round SD-7 X 0.00** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 98.20' / 98.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#5	Device 4	101.00'	**12.6' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#6	Tertiary	101.45'	**15.0' long x 10.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=99.75' (Free Discharge)
└**1=Endcap Orifice** (Controls 0.00 cfs)
└**2=Underdrain** (Passes 0.00 cfs of 0.34 cfs potential flow)
└**3=Soil Filter** (Passes 0.00 cfs of 0.00 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=99.75' (Free Discharge)
└**4=SD-7** (Controls 0.00 cfs)
└**5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=8.91 cfs @ 12.08 hrs HW=101.83' (Free Discharge)
└**6=Emergency Spillway** (Weir Controls 8.91 cfs @ 1.57 fps)



Routing Diagram for 2125 Post
Prepared by {enter your company name here}, Printed 10/26/2021
HydroCAD® 10.00-26 s/n 10466 © 2020 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment21: Runoff Area=75,228 sf 86.40% Impervious Runoff Depth>7.01"
Flow Length=376' Tc=3.0 min CN=95 Runoff=14.67 cfs 1.009 af

Pond FB1: Filter Basin Peak Elev=101.66' Storage=8,550 cf Inflow=14.67 cfs 1.009 af
Primary=0.06 cfs 0.042 af Secondary=7.86 cfs 0.809 af Tertiary=3.68 cfs 0.034 af Outflow=11.59 cfs 0.884 af

Total Runoff Area = 1.727 ac Runoff Volume = 1.009 af Average Runoff Depth = 7.01"
13.60% Pervious = 0.235 ac 86.40% Impervious = 1.492 ac

Summary for Subcatchment 21:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 14.67 cfs @ 12.05 hrs, Volume= 1.009 af, Depth> 7.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Year Rainfall=8.10"

	Area (sf)	CN	Description
*	65,000	98	Impervious
	10,228	74	>75% Grass cover, Good, HSG C
	75,228	95	Weighted Average
	10,228		13.60% Pervious Area
	65,000		86.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	36	0.0200	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
1.7	150	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	190	0.0050	4.03	4.95	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
3.0	376	Total			

Summary for Pond FB1: Filter Basin

[82] Warning: Early inflow requires earlier time span

Inflow Area = 1.727 ac, 86.40% Impervious, Inflow Depth > 7.01" for 100 Year event
Inflow = 14.67 cfs @ 12.05 hrs, Volume= 1.009 af
Outflow = 11.59 cfs @ 12.10 hrs, Volume= 0.884 af, Atten= 21%, Lag= 3.5 min
Primary = 0.06 cfs @ 12.11 hrs, Volume= 0.042 af
Secondary = 7.86 cfs @ 12.11 hrs, Volume= 0.809 af
Tertiary = 3.68 cfs @ 12.10 hrs, Volume= 0.034 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 101.66' @ 12.11 hrs Surf.Area= 5,024 sf Storage= 8,550 cf

Plug-Flow detention time= 77.8 min calculated for 0.881 af (87% of inflow)
Center-of-Mass det. time= 38.5 min (775.0 - 736.5)

Volume	Invert	Avail.Storage	Storage Description
#1	99.75'	14,926 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.75	3,915	0	0
100.00	4,060	997	997
101.00	4,640	4,350	5,347
101.50	4,930	2,393	7,739
102.00	5,220	2,538	10,277
102.85	5,720	4,650	14,926

Device	Routing	Invert	Outlet Devices
#1	Primary	96.80'	**1.0" Vert. Endcap Orifice** C= 0.600
#2	Device 1	97.50'	**4.0" Round Underdrain** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 97.50' / 96.80' S= 0.0070 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf
#3	Device 2	99.75'	**2.410 in/hr Soil Filter over Surface area above 99.75'** Excluded Surface area = 3,915 sf
#4	Secondary	98.20'	**15.0" Round SD-7** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 98.20' / 98.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#5	Device 4	101.00'	**12.6' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#6	Tertiary	101.45'	**15.0' long x 10.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.06 cfs @ 12.11 hrs HW=101.66' (Free Discharge)
└**1=Endcap Orifice** (Orifice Controls 0.06 cfs @ 10.57 fps)
└**2=Underdrain** (Passes 0.06 cfs of 0.44 cfs potential flow)
└**3=Soil Filter** (Passes 0.06 cfs of 0.06 cfs potential flow)

Secondary OutFlow Max=7.85 cfs @ 12.11 hrs HW=101.66' (Free Discharge)
└**4=SD-7** (Inlet Controls 7.85 cfs @ 6.40 fps)
└**5=Sharp-Crested Rectangular Weir** (Passes 7.85 cfs of 21.67 cfs potential flow)

Tertiary OutFlow Max=3.52 cfs @ 12.10 hrs HW=101.66' (Free Discharge)
└**6=Emergency Spillway** (Weir Controls 3.52 cfs @ 1.13 fps)

HOUSEKEEPING PERFORMANCE STANDARDS

FOR:

GRAY SELF STORAGE

GRAY, MAINE

Project Developer: Equity Trust Company
29 Derby Lane
North Yarmouth, ME 04097

Responsible Party: Equity Trust Company
29 Derby Lane
North Yarmouth, ME 04097

Introduction:

The contractor shall be responsible for maintaining proper housekeeping standards throughout the construction phase of the project. After the construction phase has been completed, the owner or operator of the project will be responsible.

Standards:

In accordance with the housekeeping performance standards required by MDEP chapter 500 stormwater regulations, the following standards shall be met:

1. **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.
2. **Groundwater protection.** 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.
3. **Fugitive sediment and dust.** 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.

   Operations during wet months that experience tracking of mud off the site onto public roads should provide for sweeping of road areas at least once a week and prior to significant storm events. Where chronic mud tracking occurs, a stabilized construction entrance should be provided. Operations during dry months, that experience fugitive dust problems, should wet down the access roads once a week or more frequently as needed.
4. **Debris and other materials.** Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

   To prevent these materials from becoming a source of pollutants, construction and post-construction activities related to a project may be required to comply with applicable

provision of rules related to solid, universal, and hazardous waste, including, but not limited to, the Maine solid waste and hazardous waste management rules; Maine hazardous waste management rules; Maine oil conveyance and storage rules; and Maine pesticide requirements.

5. **Trench or foundation de-watering.** Trench de-watering is the removal of water from trenches, foundations, coffer dams, ponds, and other areas within the construction area that retain water after excavation. In most cases the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the department.

6. **Authorized Non-stormwater discharges.** Identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:

(a) Discharges from firefighting activity;

(b) Fire hydrant flushings;

(c) Vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);

(d) Dust control runoff in accordance with permit conditions and Appendix (C)(3);

(e) Routine external building washdown, not including surface paint removal, that does not involve detergents;

(f) Pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;

(g) Uncontaminated air conditioning or compressor condensate;

(h) Uncontaminated groundwater or spring water;

(i) Foundation or footer drain-water where flows are not contaminated;

(j) Uncontaminated excavation dewatering (see requirements in Appendix C(5));

(k) Potable water sources including waterline flushings; and

(l) Landscape irrigation.

7. **Unauthorized non-stormwater discharges .** The Department's approval under this Chapter does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with Appendix C (6). Specifically, the Department's approval does not authorize discharges of the following:

(a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;

(b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;

(c) Soaps, solvents, or detergents used in vehicle and equipment washing; and

(d) Toxic or hazardous substances from a spill or other release.

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MAINTENANCE PLAN OF STORMWATER MANAGEMENT FACILITIES

GRAY SELF STORAGE
GRAY, MAINE

Prepared by:
Jeffrey D. Amos, P.E. 10167

Project Developer: Equity Trust Company
29 Derby Lane
North Yarmouth, ME 04097

Responsible Party: Equity Trust Company
29 Derby Lane
North Yarmouth, ME 04097

List of Stormwater Measures:

Conveyance & Distribution System (Stormwater Channels & Culverts)
Roadways & Parking Surfaces
Level Lip Spreader
Grassed Underdrained Soil Filter

Introduction:

Regular inspection and maintenance of the entire stormwater management system is crucial to the long-term effectiveness of the system. The responsible party must provide regular inspection and maintenance of all permanent erosion control measures and stormwater management structures, establish any contract services required to implement the program, and keep records and a maintenance log book of inspection and maintenance activities. At a minimum, the inspection and maintenance activities outlined herein should be performed at the recommended intervals. All inspection and maintenance documentation shall be maintained for at least 5 years. This project is subject to the Maine Department of Environmental Protection's 5-year Recertification Process.

All measures must be maintained in effective operating condition. A person with knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project shall conduct the inspections. The following areas, facilities, and measures must be inspected and identified deficiencies must be corrected.

Inspection & Maintenance Tasks:

Inspections should be performed by a qualified erosion control professional. NOTE: The following instruction are excerpts from the Maine Department of Environmental Protection's *Stormwater Management for Maine, Volume III BMPs Technical Design Manual*, dated January 2006.

1. Inspect **vegetated areas**, particularly slopes and embankments, early in the growing season or after storm events resulting in one inch of rain in 24 hours to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

2. Inspect **ditches, swales and other open stormwater channels** in the spring, in late fall, and after storm events resulting in one inch of rain in 24 hours to remove any obstructions to flow, remove accumulated sediments and debris, to control vegetated growth that could obstruct flow, and to repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or sideslopes.

3. Inspect **resource and treatment buffers** once a year for evidence of erosion, concentrating flow, and encroachment by development. If flows are concentrating within a buffer, site grading, level spreaders, or ditch turn-outs must be used to ensure a more even distribution of flow into a buffer. Check down slope of all spreaders and turn-outs for erosion. If erosion is present, adjust or modify the spreader's or turnout's lip to ensure a better distribution of flow into a buffer. Clean-out any accumulation of sediment within the spreader bays or turn-out pools.

Recertification requirement:

Within three months of the expiration of each five-year interval from the date of issuance of the permit, the permittee shall certify the following to the Department.

(a) All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

(b) All aspects of the stormwater control system are operating as approved, have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system, as necessary.

(c) The stormwater maintenance plan for the site is being implemented as approved by the Department, and the maintenance log is being maintained.

(d) All proprietary systems have been maintained according to the manufacturer's recommendations. Where required by the Department, the permittee shall execute a 5-year maintenance contract with a qualified professional for the coming 5-year interval. The maintenance contract must include provisions for routine inspections, cleaning and general maintenance.

(e) The Department may waive some or all of these recertification requirements on a case-by-case basis for permittees subject to the Department's Multi-Sector General Permit ("MSGP") and/or Maine Pollutant Discharge Elimination System ("MEPDES") programs where it is demonstrated that these programs are providing stormwater control that is at least as effective as required pursuant to this Chapter.

Conveyance & Distribution Systems: (Stormwater Channels & Culverts, etc.)

1. Inspection schedule:

a. Inspect ditches, swales and other open stormwater channels in the spring, in late fall, and after heavy rains (one inch of rain in 24 hours) to remove any obstructions to flow, remove accumulated sediments and debris, to control vegetated growth that could obstruct flow, and to repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or side-slopes.

b. Inspect culverts in the spring, in late fall, and after heavy rains to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to repair any erosion damage at the culvert's inlet and outlet.

c. Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

2. Mowing: Grass should not be trimmed extremely short, as this will reduce the filtering effect of the swale (MPCA, 1989). The cut vegetation should be removed to prevent the decaying organic litter from adding pollutants to the discharge from the swale. The mowed height of the grass should be 2-4 inches taller than the maximum flow depth of the design water quality storm. A minimum mow height of 6 inches is generally recommended (Galli, 1993).

3. Erosion: It is important to install erosion and sediment control measures to stabilize this area as soon as possible and to retain any organic matter in the bottom of the trench.

4. Fertilization: Routine fertilization and/or use of pesticides is strongly discouraged. If complete re-seeding is necessary, half the original recommended rate of fertilizer should be applied with a full rate of seed.

5. Sediment Removal: The level of sediment deposition in the channel should be monitored regularly, and removed from grassed channels before permanent damage is done to the grassed vegetation, or if infiltration times are longer than 12 hours. Sediment should be removed from riprap channels when it reduces the capacity of the channel.

Roadways & Parking Surfaces:

Paved surfaces shall be swept or vacuumed at least once annually in the Spring to remove all Winter sand, and periodically during the year on an as-needed basis to minimize transportation of sediment during rainfall events.

Vegetated Swales:

Mowing: Grass should not be trimmed extremely short, as this will reduce the filtering effect of the swale (MPCA, 1989). The cut vegetation should be removed to prevent the decaying organic litter from adding pollutants to the discharge from the swale. The mowed height of the grass should be 2-4 inches taller than the maximum flow depth of the design water quality storm. A minimum mow height of 6 inches is generally recommended (Galli, 1993).

Routine Maintenance and Inspection: The area should be inspected for failures following heavy rainfall (one inch of rain in 24 hours) and repaired as necessary for newly formed channels or gullies, reseeding/sodding of bare spots, removal of trash, leaves and/or accumulated sediments, the control of woody or other undesirable vegetation and to check the condition and integrity of the check dams.
Aeration: The buffer strip may require periodic mechanical aeration to restore infiltration capacity. This aeration must be done during a time when the area can be reseeded and mulched prior to any significant rainfall.

Erosion: It is important to install erosion and sediment control measures to stabilize this area as soon as possible and to retain any organic matter in the bottom of the trench.

Fertilization: Routine fertilization and/or use of pesticides is strongly discouraged. If complete re-seeding is necessary, half the original recommended rate of fertilizer should be applied with a full rate of seed.

Sediment Removal: The level of sediment deposition in the channel should be monitored regularly, and removed from grassed channels before permanent damage is done to the grassed vegetation, or if infiltration times are longer than 12 hours. Sediment should be removed from riprap channels when it reduces the capacity of the channel.

Level Lip Spreader:

Long term maintenance of the level spreader is essential to ensure its effectiveness. Spreaders constructed of wood, asphalt, stone or concrete curbing also require inspection and maintenance.

1. **Inspections:** At least once a year and following major storms (one inch of rain in 24 hours), the level spreader pool should be inspected for sand accumulation and debris that may reduce its capacity.
2. **Sediment Removal:** Sediment build-up within the swale should be removed when it has accumulated to approximately 25% of design volume or channel capacity. Dispose of the sediments appropriately.
3. **Debris:** Remove debris such as leaf litter, branches and tree growth from the spreader.
4. **Mowing:** Vegetated spreaders may require mowing.
5. **Snow Storage:** Do not store snow within the area of the level spreader.
6. **Level Spreader Replacement:** The reconstruction of the level spreader may be necessary when sheet flow from the spreader channelize into the buffer.

GRASSED UNDERDAINED SOIL FILTER:

During the first year, the basin will be inspected semi-annually and following major storm events. Debris and sediment buildup shall be removed from the forebay and basin as needed. Mowing of a grassed basin can occur semiannually to a height no less than 6 inches. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. Maintaining good grass cover will minimize clogging with fine sediments and if ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity.

Maintenance Agreement: A legal entity should be established with responsibility for inspecting and maintaining any underdrained filter. The legal agreement establishing the entity should list specific maintenance responsibilities (including timetables) and provide for the funding to cover long-term inspection and maintenance.

Soil Filter Inspection: The soil filter should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one inch storm or greater. And that following a storms that fill the system to overflow, it drains in no less than 24 to 48 hours. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.

Soil Filter Replacement: The top several inches of the filter shall be replaced with fresh material when water ponds on the surface of the bed for more than 72 hours. The removed sediments should be disposed of in an acceptable manner.

Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.

Mowing: If mowing is desired, only hand held string trimmers or push-mowers are allowed on the filter (no tractor) and the grass bed should be mowed no more than 2 times per growing season to maintain grass heights of no less than 6 inches.

Fertilization: Fertilization of the underdrained filter area should be avoided unless absolutely necessary to establish vegetation.

Harvesting and Weeding: Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary. Add new mulch only as necessary for bioretention cell.

Enc.

Sample Maintenance Log Sheet

Sample Maintenance Log Sheet:

Stormwater Management Facilities Inspection & Maintenance Log Gray Self Storage		
General Information:		
Inspected by:	Date:	Weather:
Reason for Inspection: (Regular Inspection) (Major Rain Event)		

BMP	Conditions Observed	Repairs Needed ?
1. Vegetated Areas		
2. Ditches, Swales, Open Channels		
3. Roadway & Parking Surfaces		
4. Level Lip Spreader		
5. Soil Filter		

Detailed Repair Notes:

BMP Type	Date	Description of Repairs & Sediment Disposal

Mark Cenci
Geologic, Inc.

CERTIFIED GEOLOGIST/LICENSED SITE EVALUATOR

93 Mill Road • North Yarmouth, Maine 04097
Cell: 207.329.3524 • mark@markcenci.com
www.markcenci.com

Soil Investigation for Stormwater Control Feature
Gray Self-Storage, Portland Road, Gray

Date: November 26, 2021

To: Jeff Amos
Terradyn Consultants, LLC
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Summary:

A soil boring was done in a proposed stormwater control feature. The soil is a poorly drained, fine textured soil.

Dates of Investigation: November 24, 2021

Location of Investigation:

The site is located at 190 Portland Road, Gray.

Purpose of Investigation:

The purpose of the investigation was to characterize the soil texture and drainage in an area being used for stormwater control.

Methods of Investigation:

A soil auger and probe were used. A site plan of the proposed stormwater feature, also depicting prior wetlands delineation and site location features by Terradyn Consultants

was used in the field during the investigation. The soil was investigated at the site depicted on the site plan.

Results of the Investigation:

The site is at the base of a sandy, glacial till hillside and adjacent to a large wetland known as Gray Meadows.

The soil is a fine sandy loam topsoil, and very fine sandy loam subsoil and a silt loam substratum. Water table mottles were visible at 8 inches below the surface and the soil was gleied in color. The soil is hydric.

[redacted]

Mark Cenci
Licensed Site Evaluator #262, Licensed Geologist #467

GRID NORTH

LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- PRE — WATERSHED LABEL
- 1 — REACH
- CB — CATCH BASIN
- HIGH INTENSITY SOIL BOUNDARY
- Dixfield C — HIGH INTENSITY SOIL NAME
- MEDIUM INTENSITY SOIL BOUNDARY
- DyB — MEDIUM INTENSITY SOIL NAME

WrB
SHEET
L=125
S=0.13
WrB
PfC
SHEET
L=150
S=0.06
Sn
SHEET
L=140
S=0.057
1
2
SCF
L=60
S=0.08
Bo
PfC
PIPE
L=105
S=0.01
Sn
SCF
L=480
S=0.004
SP#1
PORTLAND ROAD
SP#2

PLAN REFERENCES

1. "Minor Subdivision on Hunts Hill Road in Gray, Maine for Mill Plummer & Frank Pecoraro" dated February 2017 by Wayne T. Wood & Co.
[illegible] Boundary Survey 1st Revised Property Plan of Property 130 Portland Road ~ Gray, Maine made for record owner David Welch [illegible] Boucher, recorded in Plan Book 213 on Page 350.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch =40 ft.

[redacted]

DATE: 10/26/2021
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY

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565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102

PERMIT DRAWING
NOT FOR CONSTRUCTION

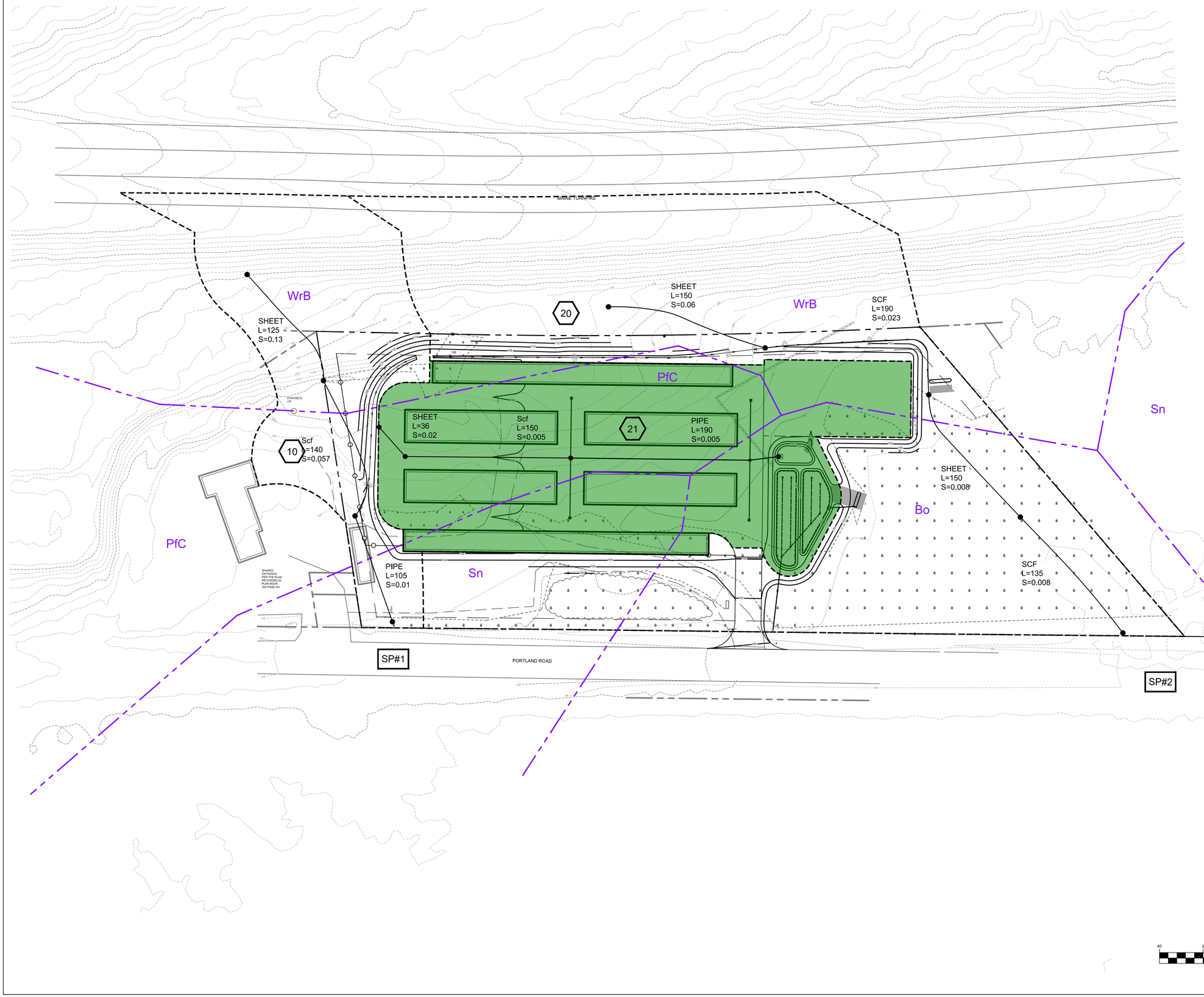
PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE:
PRE DEVELOPMENT WATERSHED PLAN

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	10/26/2021
SCALE:	1"=20'
DESIGNED:	JDA
JOB NO:	2125
FILE:	

SHEET SWP-1.0



GRID NORTH

LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- PRE — WATERSHED LABEL
- 1 — REACH
- CB — CATCH BASIN
- HIGH INTENSITY SOIL BOUNDARY
- Dixfield C — HIGH INTENSITY SOIL NAME
- MEDIUM INTENSITY SOIL BOUNDARY
- DyB — MEDIUM INTENSITY SOIL NAME
- PROPOSED FORESTED BUFFER
- PROPOSED MEADOW BUFFER
- FILTER BASIN DRAINAGE AREA

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch =40 ft.

[redacted]

DATE: 10/26/2021
P.E.: 10167

NO.	DATE	REVISIONS	APP'D BY

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 305
NEW GLOUCESTER, ME 04260
OFFICE: (207) 926-5111
www.terradynconsultants.com
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE: POST DEVELOPMENT WATERSHED MAP

CLIENT: BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	10/26/2021
SCALE:	1"=40'
DESIGNED:	JDA
JOB NO:	2125
FILE:	
SHEET	SWP-2.0

Revised 11-11-2021

STORMWATER MANAGEMENT PLAN

Gray Self Storage
Gray, Maine

The following Stormwater Management Plan has been prepared for the Gray Self Storage Project to evaluate stormwater runoff and erosion control for the proposed self-storage project to be located at 986 Portland Road in Gray, Maine.

Site Calculations

Total Property Area	4.1 Ac (+/-)
Total Project Impervious Area	1.51 Ac
Total Developed Area	2.04 Ac

Existing Conditions

The development parcel is located on the west side of Portland Road, near 119 Portland Road. The Maine Turnpike is located along the back property line. See attached Figure 1: USGS Quadrangle Map. The development parcel is approximately 4.1 acres and is shown as lots 31-10 & 31-14 on the Town of Gray Tax Map 59. The property contains an old driveway that connects Portland Road to a small <10,000 SF cleared area that is located directly adjacent to the neighboring commercial property to the south. The rest of the property is undeveloped forest & wetland areas. See attached Figure 2: Aerial Map.

The property drains to the Portland Road drainage system. The southern edge of the property drains to a culvert that located at the southeast corner of the property. This location is modeled as Study Point #1 in this report. The remainder of the site drains to a wetland system that is located on the northeast corner of the property. This corner is modeled as Study Point #2. Both areas drain across Portland Road where they're intercepted by Wiggins Brook before flowing into the Pleasant River.

Flooding

The development area is not located within an area of flood hazard according to the Federal Insurance Rate Map 230048 0015 A. See Figure 3: FEMA Floodmap.

Modeling Assumptions

The onsite stormwater facilities were sized utilizing the USDA Soil Conservation Service (SCS) TR-20 Runoff Simulation Model, as contained in the HydroCAD computer software program (Version 9.0). Runoff curve numbers were determined for each direct watershed by measuring the area of

each hydrologic soil group within each type of land cover. Weighted curve numbers were then calculated using curve numbers for various cover types and hydrologic soil groups, assuming "good" conditions as defined in U.S Soil Conservation Service (SCS) publications. Times of concentration and travel times were determined from site topographic maps in accordance with SCS procedures. A maximum length of 150 feet was used for sheet flow.

All of the watersheds' peak runoff rates were analyzed for the 2, 10, and 25-year frequency, 24-hour duration storm events. A Type III rainfall distribution was applied to these storms. The rainfall amounts for Cumberland County are as follows:

Storm Frequency Precipitation (in./24 hr)	
2-year	3.1
10-year	4.6
25-year	5.8

Onsite Soils

The area soils were delineated from the Cumberland County Medium Intensity Soil Survey as shown on the Soil Data Viewer on the NRCS website (See attached map). The soil survey reports the developable portion of the property consists of hydrologic group C soils. The wetlands are generally hydrologic group D soils. See Figure 4: Soils Map.

The soils are listed below:

Soil Name	Hydrologic Soil Group
Biddeford Mucky Peat (Bo)	D
Paxton (PfC)	C
Scantic (Sn)	D
Woodbridge (WrB)	C

Water Quantity (Flooding Standard)

The following table summarizes the results of stormwater calculations for the design storm events for the project areas. Calculations and computer modeling sheets are provided with this report.

Table 1 - Stormwater Runoff Summary Table
Pre-Development vs. Post-Development

Study Point #	2Yr/24Hr (cfs)		10Yr/24Hr (cfs)		25Yr/24Hr (cfs)	
	Pre	Post	Pre	Post	Pre	Post
1	0.8	0.8	1.8	1.7	2.6	2.5
2	2.6	2.2	5.4	4.4	7.8	6.2

As the above result table shows, the post-development flow rates for the 2, 10 and 25-year/24 hour design storm events do not exceed the pre-development conditions.

Water Quality (BMP Standard)

The water quality requirements will be met with the construction of an under-drained filter basin.

New Impervious Area: The project will result in the creation of approximately 65,770 SF of impervious area. The filter basin will result in the treatment of 56,946 SF of impervious area and the roof drain filters will treat approximately 7,000 SF, resulting in a treatment percentage of (63,946/65,770) =97.2%.

Percentage of Treatment of the Impervious Area =97.2% (95% req'd)

Project Developed Area: The project will result in the creation of approximately 88,942 SF of developed area. This figure includes 65,770 SF of impervious area and 23,172 SF of landscaped area. The filter basin and roof drain filters will result in the treatment of approximately 71,316 SF of the developed area resulting in a treatment percentage of (71,316/88,942) x 100%= 80.2%.

Percentage of Treatment of the Developed Area = 80.2% (80% required)

Housekeeping and Maintenance & Inspection guidelines are attached to this report.

Filter Basin Sizing

Total Pond

STAGE (FT)	AREA (SF)	STORAGE (CF)
100.5	4920	0
101	5090	2502
101.5	5259	5090
102	5429	7762
102.8	5700	12213

WATERSHED IMPERVIOUS AREA=	56946	SF
WATERSHED LANDSCAPED AREA=	7370	SF
REQUIRED WATER QUALITY VOLUME=	4991	CF
PROVIDED WATER QUALITY VOLUME=	5090	CF

The required water quality volume was calculated by multiplying the impervious area by 1.0" and the landscaped area by 0.4".

Roof Dripline Filter Bed
We propose to provide treatment for the roof runoff for buildings 1, 6 & 7. The bed is required to provide volume for 1" of runoff from the contributing area and store it within a reservoir bed. The bed sizing is as follows:

Area of Watershed Roof 1 & 6: 280'x10' = 2,800 SF
Treatment Volume Required: Area x runoff depth: 2,800 SF x 1/12 FT = 234 CF
Bed Sizing:
Porosity = 40% Bed Length = 280' Bed Width = 3' Bed Depth = 1.0'
Available Volume= 280' x 3' x 1.0' x 0.40 = 336 CF.

Area of Watershed Roof 7: 70'x20' = 1,400 SF
Treatment Volume Required: Area x runoff depth: 1,400 SF x 1/12 FT = 117 CF
Bed Sizing:
Porosity = 40% Bed Length = 70' Bed Width = 3' Bed Depth = 1.5'
Available Volume= 70' x 3' x 1.5' x 0.40 = 126 CF.

Summary
Based on the results of this evaluation, the proposed stormwater design is not expected to cause flooding, erosion or other significant adverse effects downstream of the site.

Prepared by,
Terradyn Consultants, LLC

[redacted]

Jeffrey D. Amos, P.E.

Attached:
Attachment 1: Site Figures:
- USGS Quadrangle Map
- Aerial Photo
- FEMA Floodmap
- Medium Intensity Soil Map

Attachment 2: Post Development Hydrocad Calculations – 25 Year Storm
Attachment 3: Pond Spillway Checks – 25 & 100 Year
Attachment 4: Drawdown Calculations
Attachment 5: Maintenance & Inspection of Stormwater Facilities
Attachment 6: Housekeeping Plan
Attachment 7: Pond Test Pit Log/Memo
Attachment 8: Post Development Stormwater Treatment Map

Attachment 1

Site Figures

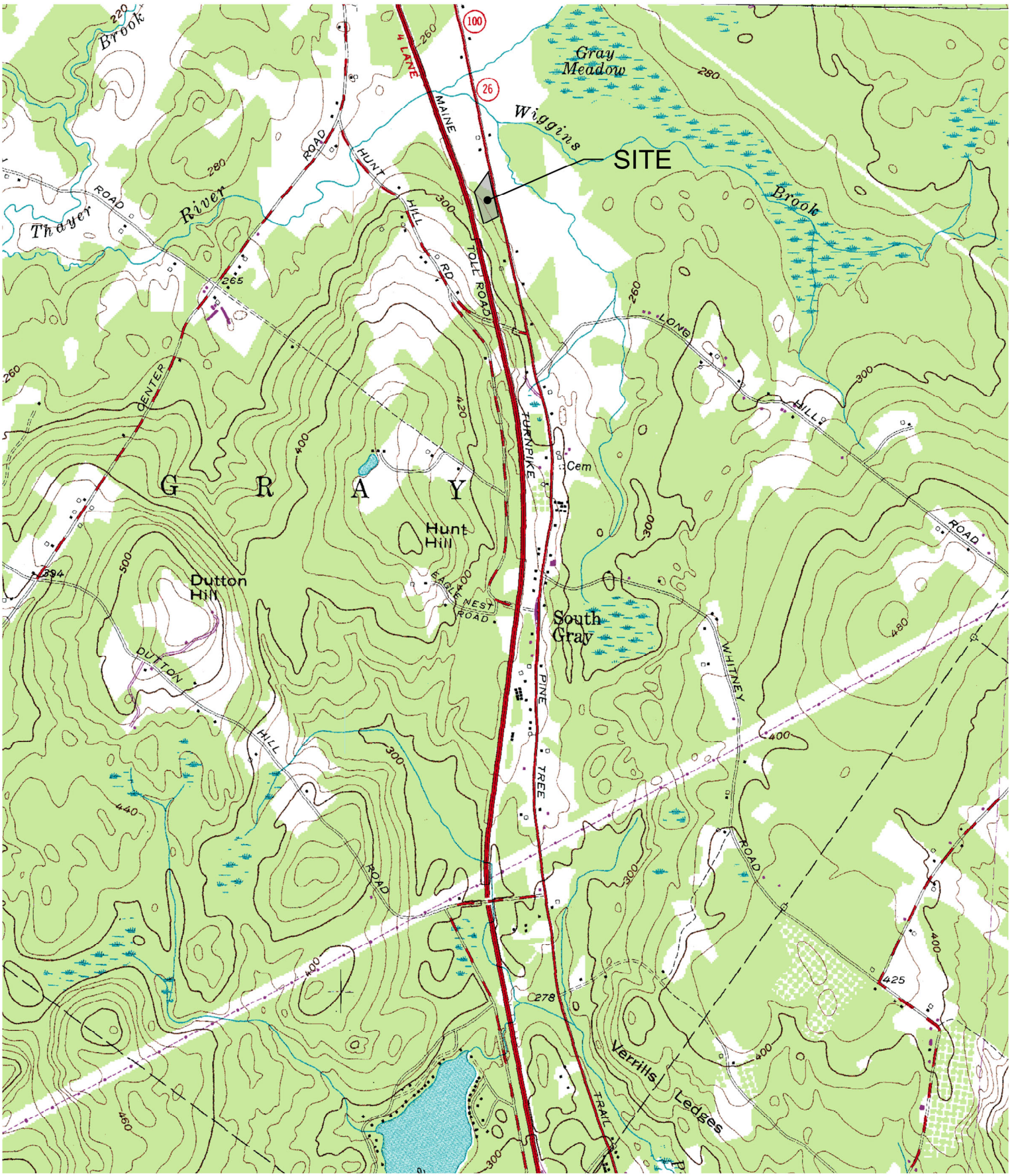


FIGURE 1:U.S.G.S. QUADRANGLE MAP	TERRADYN CONSULTANTS, LLC	PROJECT NO. 2125	SHEET 1
PROJECT: CURETON SELF STORAGE	PINELAND 41 CAMPUS DRIVE, SUITE 101 NEW GLOUCESTER, ME 04260	DATE 4/21/2021	OF 2
PREPARED FOR: BETH CURETON 29 DERBY LANE NORTH YARMOUTH, ME 04097	PORTLAND 565 CONGRESS STREET, SUITE 201 PORTLAND, ME 04101	SCALE 1"=2,000'	
	207.926.5111 • info@terradynconsultants.com • www.terradynconsultants.com		



FIGURE 2: AERIAL MAP

PROJECT:
CURETON SELF STORAGE

PREPARED FOR:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

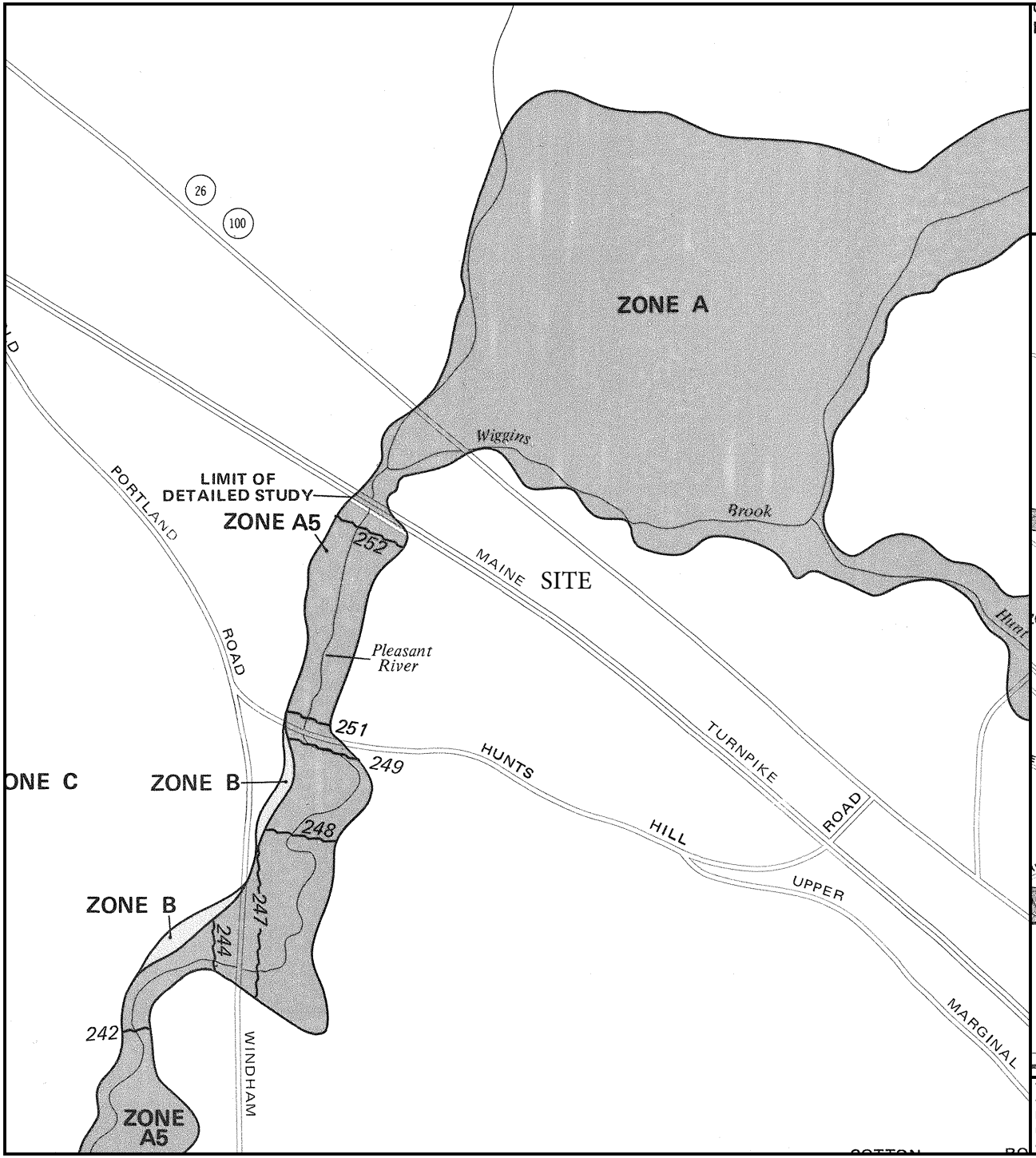
TERRADYN CONSULTANTS, LLC

PINELAND
41 CAMPUS DRIVE, SUITE 101
NEW GLOUCESTER, ME 04260

PORTLAND
565 CONGRESS STREET, SUITE 201
PORTLAND, ME 04101

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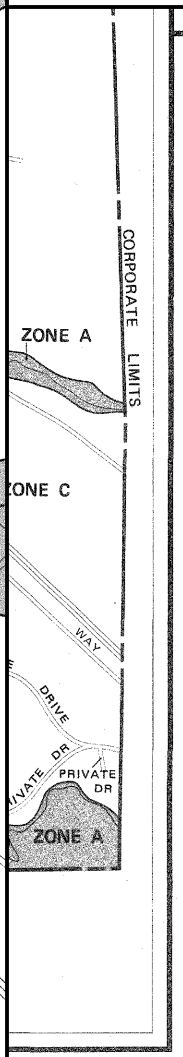
PROJECT NO.	SHEET
2125	2
DATE	OF
4/21/2021	2
SCALE	
1"=200'	



contact your insurance agent, or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE

1000 0 1000 FEET



NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
GRAY, MAINE
CUMBERLAND COUNTY

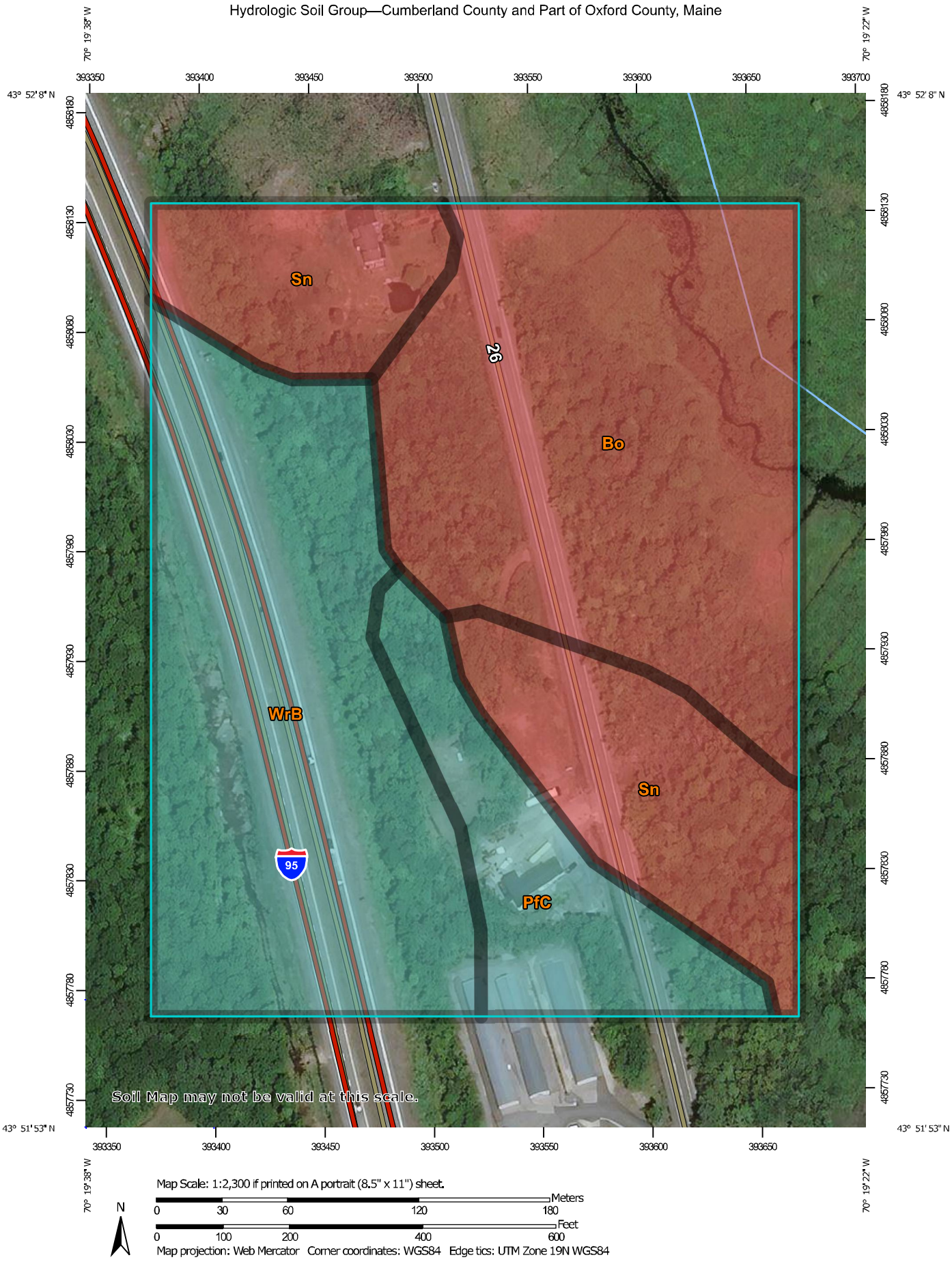
PANEL 15 OF 15
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230048 0015 A

EFFECTIVE DATE:
JANUARY 6,1982

federal emergency management agency

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at https://msc.fema.gov.



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MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 17, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 7, 2019—Jul 2, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Bo	Biddeford mucky peat, 0 to 3 percent slopes	D	9.5	34.8%
PfC	Paxton very stony fine sandy loam, 8 to 15 percent slopes	C	3.0	10.9%
Sn	Scantic silt loam, 0 to 3 percent slopes	D	5.7	20.9%
WrB	Woodbridge fine sandy loam, 0 to 8 percent slopes	C	9.1	33.4%
Totals for Area of Interest			**27.2**	**100.0%**

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Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

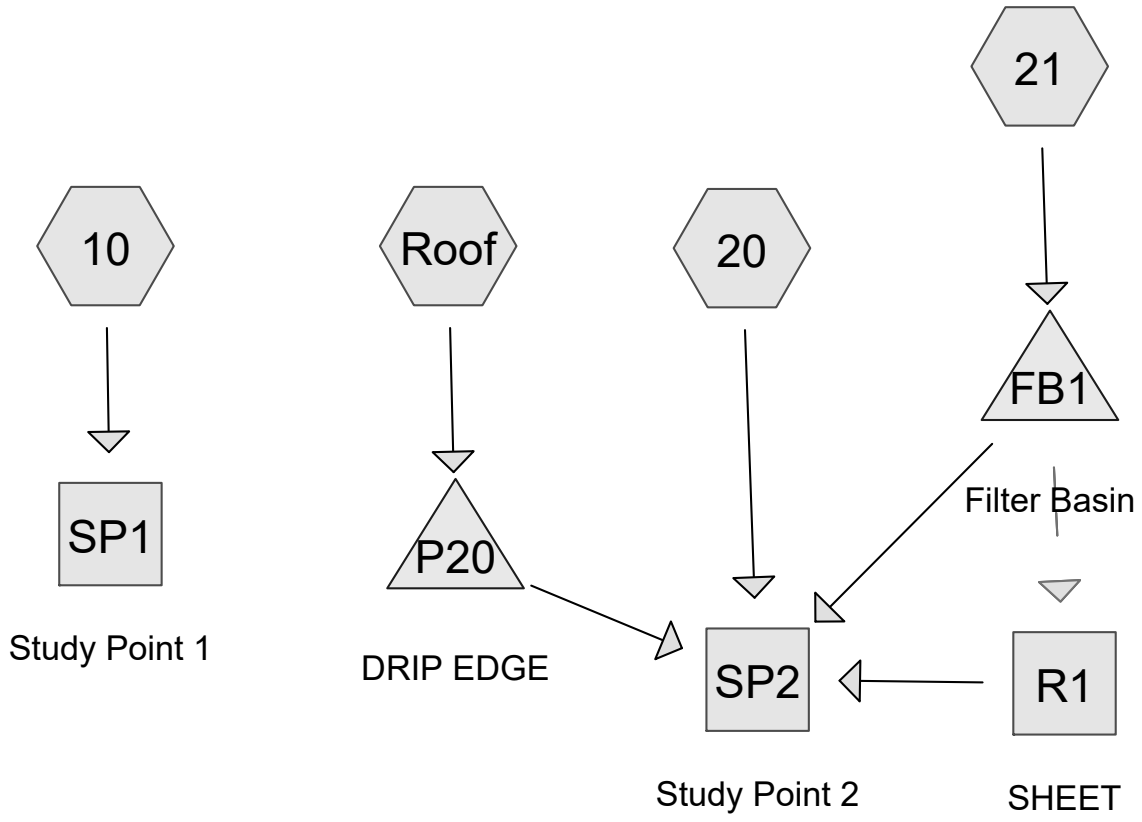
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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Attachment 2

Post Development Hydrocad Calculations



Subcat Reach Pond Link

Routing Diagram for 2125 Post with RDF
Prepared by {enter your company name here}, Printed 4/28/2022
HydroCAD® 10.00-26 s/n 10466 © 2020 HydroCAD Software Solutions LLC

Time span=2.00-72.00 hrs, dt=0.05 hrs, 1401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10: Runoff Area=48,485 sf 10.05% Impervious Runoff Depth=3.11"
Flow Length=370' Tc=23.9 min CN=75 Runoff=2.53 cfs 0.289 af

Subcatchment 20: Runoff Area=150,266 sf 8.78% Impervious Runoff Depth=3.31"
Flow Length=625' Tc=116.1 min CN=77 Runoff=3.43 cfs 0.950 af

Subcatchment 21: Runoff Area=64,316 sf 88.54% Impervious Runoff Depth>5.21"
Flow Length=376' Tc=3.0 min CN=95 Runoff=8.88 cfs 0.641 af

Subcatchment Roof: Runoff Area=7,000 sf 100.00% Impervious Runoff Depth>5.54"
Tc=6.0 min CN=98 Runoff=0.89 cfs 0.074 af

Reach R1: SHEET Avg. Flow Depth=0.10' Max Vel=0.03 fps Inflow=0.05 cfs 0.220 af
n=0.800 L=150.0' S=0.0067 '/' Capacity=0.24 cfs Outflow=0.05 cfs 0.212 af

Reach SP1: Study Point 1 Inflow=2.53 cfs 0.289 af
Outflow=2.53 cfs 0.289 af

Reach SP2: Study Point 2 Inflow=8.29 cfs 1.584 af
Outflow=8.29 cfs 1.584 af

Pond FB1: Filter Basin Peak Elev=101.78' Storage=11,495 cf Inflow=8.88 cfs 0.641 af
Primary=7.47 cfs 0.352 af Secondary=0.05 cfs 0.220 af Outflow=7.52 cfs 0.572 af

Pond P20: DRIP EDGE Peak Elev=104.48' Storage=0.019 af Inflow=0.89 cfs 0.074 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0200 '/' Outflow=0.38 cfs 0.070 af

Total Runoff Area = 6.200 ac Runoff Volume = 1.954 af Average Runoff Depth = 3.78"
69.63% Pervious = 4.317 ac 30.37% Impervious = 1.883 ac

Summary for Subcatchment 10:

Runoff = 2.53 cfs @ 12.34 hrs, Volume= 0.289 af, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

Area (sf)	CN	Description
9,750	92	Paved roads w/open ditches, 50% imp, HSG C
5,302	74	>75% Grass cover, Good, HSG C
33,433	70	Woods, Good, HSG C
48,485	75	Weighted Average
43,610		89.95% Pervious Area
4,875		10.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	125	0.1300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.0	140	0.0570	1.19		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	105	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
23.9	370	Total			

Summary for Subcatchment 20:

Runoff = 3.43 cfs @ 13.55 hrs, Volume= 0.950 af, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
	22,750	92	Paved roads w/open ditches, 50% imp, HSG C
*	1,824	98	Impervious
	10,500	74	>75% Grass cover, Good, HSG C
	46,901	70	Woods, Good, HSG C
	68,291	77	Woods, Good, HSG D
	150,266	77	Weighted Average
	137,067		91.22% Pervious Area
	13,199		8.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.9	150	0.0600	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.4	190	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
75.8	150	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
5.0	135	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
116.1	625	Total			

Summary for Subcatchment 21:

[49] Hint: Tc<2dt may require smaller dt

Runoff = 8.88 cfs @ 12.05 hrs, Volume= 0.641 af, Depth> 5.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	56,946	98	Impervious
	7,370	74	>75% Grass cover, Good, HSG C
	64,316	95	Weighted Average
	7,370		11.46% Pervious Area
	56,946		88.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	36	0.0200	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
1.7	150	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	190	0.0050	4.03	4.95	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
3.0	376	Total			

Summary for Subcatchment Roof:

Runoff = 0.89 cfs @ 12.09 hrs, Volume= 0.074 af, Depth> 5.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=5.80"

	Area (sf)	CN	Description
*	7,000	98	Buildings
	7,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Reach R1: SHEET

Inflow = 0.05 cfs @ 12.10 hrs, Volume= 0.220 af
Outflow = 0.05 cfs @ 18.03 hrs, Volume= 0.212 af, Atten= 4%, Lag= 356.2 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.03 fps, Min. Travel Time= 81.3 min
Avg. Velocity = 0.03 fps, Avg. Travel Time= 87.8 min

Peak Storage= 232 cf @ 16.68 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 0.25' Flow Area= 4.4 sf, Capacity= 0.24 cfs

15.00' x 0.25' deep channel, n= 0.800
Side Slope Z-value= 10.0 '/' Top Width= 20.00'
Length= 150.0' Slope= 0.0067 '/'
Inlet Invert= 98.00', Outlet Invert= 97.00'



‡

Summary for Reach SP1: Study Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.113 ac, 10.05% Impervious, Inflow Depth = 3.11" for 25 Year event
Inflow = 2.53 cfs @ 12.34 hrs, Volume= 0.289 af
Outflow = 2.53 cfs @ 12.34 hrs, Volume= 0.289 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs

Summary for Reach SP2: Study Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.087 ac, 34.82% Impervious, Inflow Depth > 3.74" for 25 Year event
Inflow = 8.29 cfs @ 12.10 hrs, Volume= 1.584 af
Outflow = 8.29 cfs @ 12.10 hrs, Volume= 1.584 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs

Summary for Pond FB1: Filter Basin

Inflow Area = 1.476 ac, 88.54% Impervious, Inflow Depth > 5.21" for 25 Year event
Inflow = 8.88 cfs @ 12.05 hrs, Volume= 0.641 af
Outflow = 7.52 cfs @ 12.10 hrs, Volume= 0.572 af, Atten= 15%, Lag= 3.1 min
Primary = 7.47 cfs @ 12.10 hrs, Volume= 0.352 af
Secondary = 0.05 cfs @ 12.10 hrs, Volume= 0.220 af

Routing by Stor-Ind method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 101.78' @ 12.10 hrs Surf.Area= 5,354 sf Storage= 11,495 cf

Plug-Flow detention time= 684.7 min calculated for 0.572 af (89% of inflow)
Center-of-Mass det. time= 632.8 min (1,394.5 - 761.7)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	17,134 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	4,920	0.0	0	0
100.50	4,920	40.0	4,920	4,920
101.00	5,090	100.0	2,503	7,423
102.00	5,429	100.0	5,260	12,682
102.80	5,700	100.0	4,452	17,134

Device	Routing	Invert	Outlet Devices
#1	Primary	101.50'	**20.0' long x 10.0' breadth Primary Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	98.20'	**1.0" Vert. Endcap Orifice** C= 0.600
#3	Device 2	98.50'	**4.0" Round Underdrain** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.20' S= 0.0030 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf

Primary OutFlow Max=7.39 cfs @ 12.10 hrs HW=101.78' (Free Discharge)
└**1=Primary Spillway** (Weir Controls 7.39 cfs @ 1.33 fps)

Secondary OutFlow Max=0.05 cfs @ 12.10 hrs HW=101.78' (Free Discharge)
└**2=Endcap Orifice** (Orifice Controls 0.05 cfs @ 9.06 fps)
└**3=Underdrain** (Passes 0.05 cfs of 0.38 cfs potential flow)

Summary for Pond P20: DRIP EDGE

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.161 ac,100.00% Impervious, Inflow Depth > 5.54" for 25 Year event
Inflow = 0.89 cfs @ 12.09 hrs, Volume= 0.074 af
Outflow = 0.38 cfs @ 12.28 hrs, Volume= 0.070 af, Atten= 57%, Lag= 11.8 min
Primary = 0.38 cfs @ 12.28 hrs, Volume= 0.070 af

Routing by Stor-Ind method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 104.48' @ 12.28 hrs Surf.Area= 0.024 ac Storage= 0.019 af

Plug-Flow detention time= 94.8 min calculated for 0.069 af (94% of inflow)
Center-of-Mass det. time= 58.1 min (805.8 - 747.7)

Volume	Invert	Avail.Storage	Storage Description
#1	102.50'	0.023 af	**3.00'W x 345.00'L x 2.50'H Prismatoid** 0.059 af Overall - 0.001 af Embedded = 0.059 af x 40.0% Voids
#2	103.00'	0.001 af	**4.0" Round Pipe Storage** Inside #1 L= 345.0' 0.001 af Overall - 0.2" Wall Thickness = 0.001 af
		0.024 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	103.00'	**4.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 103.00' / 102.00' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.38 cfs @ 12.28 hrs HW=104.48' (Free Discharge)
1=Culvert (Inlet Controls 0.38 cfs @ 4.35 fps)

Attachment 3

Pond Spillway Checks – 25 & 100 Year

Summary for Pond FB1: Filter Basin

Inflow Area = 1.476 ac, 88.54% Impervious, Inflow Depth > 5.21" for 25 Year event
Inflow = 8.88 cfs @ 12.05 hrs, Volume= 0.641 af
Outflow = 7.52 cfs @ 12.10 hrs, Volume= 0.572 af, Atten= 15%, Lag= 3.1 min
Primary = 7.47 cfs @ 12.10 hrs, Volume= 0.352 af
Secondary = 0.05 cfs @ 12.10 hrs, Volume= 0.220 af

Routing by Stor-Ind method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 101.78' @ 12.10 hrs Surf.Area= 5,354 sf Storage= 11,495 cf

Plug-Flow detention time= 684.7 min calculated for 0.572 af (89% of inflow)
Center-of-Mass det. time= 632.8 min (1,394.5 - 761.7)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	17,134 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	4,920	0.0	0	0
100.50	4,920	40.0	4,920	4,920
101.00	5,090	100.0	2,503	7,423
102.00	5,429	100.0	5,260	12,682
102.80	5,700	100.0	4,452	17,134

Device	Routing	Invert	Outlet Devices
#1	Primary	101.50'	**20.0' long x 10.0' breadth Primary Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	98.20'	**1.0" Vert. Endcap Orifice** C= 0.600
#3	Device 2	98.50'	**4.0" Round Underdrain** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.20' S= 0.0030 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf

Primary OutFlow Max=7.39 cfs @ 12.10 hrs HW=101.78' (Free Discharge)
└**1=Primary Spillway** (Weir Controls 7.39 cfs @ 1.33 fps)

Secondary OutFlow Max=0.05 cfs @ 12.10 hrs HW=101.78' (Free Discharge)
└**2=Endcap Orifice** (Orifice Controls 0.05 cfs @ 9.06 fps)
└**3=Underdrain** (Passes 0.05 cfs of 0.38 cfs potential flow)

Summary for Pond FB1: Filter Basin

[82] Warning: Early inflow requires earlier time span

Inflow Area = 1.476 ac, 88.54% Impervious, Inflow Depth > 7.50" for 100 Year event
Inflow = 12.54 cfs @ 12.05 hrs, Volume= 0.922 af
Outflow = 11.33 cfs @ 12.08 hrs, Volume= 0.853 af, Atten= 10%, Lag= 1.9 min
Primary = 11.28 cfs @ 12.08 hrs, Volume= 0.628 af
Secondary = 0.05 cfs @ 12.08 hrs, Volume= 0.225 af

Routing by Stor-Ind method, Time Span= 2.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 101.87' @ 12.08 hrs Surf.Area= 5,384 sf Storage= 11,956 cf

Plug-Flow detention time= 479.8 min calculated for 0.853 af (92% of inflow)
Center-of-Mass det. time= 441.5 min (1,195.9 - 754.4)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	17,134 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	4,920	0.0	0	0
100.50	4,920	40.0	4,920	4,920
101.00	5,090	100.0	2,503	7,423
102.00	5,429	100.0	5,260	12,682
102.80	5,700	100.0	4,452	17,134

Device	Routing	Invert	Outlet Devices
#1	Primary	101.50'	**20.0' long x 10.0' breadth Primary Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	98.20'	**1.0" Vert. Endcap Orifice** C= 0.600
#3	Device 2	98.50'	**4.0" Round Underdrain** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.20' S= 0.0030 '/' Cc= 0.900 n= 0.011, Flow Area= 0.09 sf

Primary OutFlow Max=10.91 cfs @ 12.08 hrs HW=101.86' (Free Discharge)
└**1=Primary Spillway** (Weir Controls 10.91 cfs @ 1.52 fps)

Secondary OutFlow Max=0.05 cfs @ 12.08 hrs HW=101.86' (Free Discharge)
└**2=Endcap Orifice** (Orifice Controls 0.05 cfs @ 9.16 fps)
└**3=Underdrain** (Passes 0.05 cfs of 0.38 cfs potential flow)

Attachment 4

Drawdown Calculations

Hydrograph for Pond FB1: Filter Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
2.00	0.00	0	98.00	0.00	0.00	0.00
4.50	0.05	244	98.12	0.00	0.00	0.00
7.00	0.12	977	98.50	0.00	0.00	0.00
9.50	0.31	2,629	99.34	0.03	0.00	0.03
12.00	**7.29**	**10,606**	**101.61**	**1.96**	**1.91**	**0.05**
14.50	**0.37**	**10,174**	**101.53**	**0.39**	**0.34**	**0.05**
17.00	0.18	10,086	101.51	0.19	0.14	0.05
19.50	0.12	10,057	101.51	0.12	0.07	0.05
22.00	0.09	10,046	101.51	0.09	0.05	0.05
24.50	0.00	9,956	101.49	0.05	0.00	0.05
27.00	0.00	9,533	101.41	0.05	0.00	0.05
29.50	0.00	9,115	101.33	0.05	0.00	0.05
32.00	0.00	8,702	101.25	0.05	0.00	0.05
34.50	0.00	8,295	101.17	0.04	0.00	0.04
37.00	0.00	7,893	101.09	0.04	0.00	0.04
39.50	0.00	7,497	101.01	0.04	0.00	0.04
42.00	0.00	7,106	100.94	0.04	0.00	0.04
44.50	0.00	6,721	100.86	0.04	0.00	0.04
47.00	0.00	6,341	100.79	0.04	0.00	0.04
49.50	0.00	5,967	100.71	0.04	0.00	0.04
52.00	0.00	5,598	100.64	0.04	0.00	0.04
54.50	0.00	5,235	100.56	0.04	0.00	0.04
57.00	0.00	4,878	100.48	0.04	0.00	0.04
59.50	0.00	4,531	100.30	0.04	0.00	0.04
62.00	0.00	4,199	100.13	0.04	0.00	0.04
64.50	0.00	3,881	99.97	0.03	0.00	0.03
67.00	0.00	3,577	99.82	0.03	0.00	0.03
69.50	0.00	3,288	99.67	0.03	0.00	0.03
72.00	0.00	3,012	99.53	0.03	0.00	0.03

Attachment 5

Maintenance & Inspection of Stormwater Facilities

TERRADYN CONSULTANTS, LLC

Pineland
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565 Congress Street, Suite 201
Portland, ME 04101

MAINTENANCE PLAN OF STORMWATER MANAGEMENT FACILITIES

GRAY SELF STORAGE
GRAY, MAINE

Prepared by:
Jeffrey D. Amos, P.E. 10167

Project Developer: Equity Trust Company
29 Derby Lane
North Yarmouth, ME 04097

Responsible Party: Equity Trust Company
29 Derby Lane
North Yarmouth, ME 04097

List of Stormwater Measures:

Conveyance & Distribution System (Stormwater Channels & Culverts)
Roadways & Parking Surfaces
Level Lip Spreader
Grassed Underdrained Soil Filter

Introduction:

Regular inspection and maintenance of the entire stormwater management system is crucial to the long-term effectiveness of the system. The responsible party must provide regular inspection and maintenance of all permanent erosion control measures and stormwater management structures, establish any contract services required to implement the program, and keep records and a maintenance log book of inspection and maintenance activities. At a minimum, the inspection and maintenance activities outlined herein should be performed at the recommended intervals. All inspection and maintenance documentation shall be maintained for at least 5 years. This project is subject to the Maine Department of Environmental Protection's 5-year Recertification Process.

All measures must be maintained in effective operating condition. A person with knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project shall conduct the inspections. The following areas, facilities, and measures must be inspected and identified deficiencies must be corrected.

Inspection & Maintenance Tasks:

Inspections should be performed by a qualified erosion control professional. NOTE: The following instruction are excerpts from the Maine Department of Environmental Protection's *Stormwater Management for Maine, Volume III BMPs Technical Design Manual*, dated January 2006.

1. Inspect **vegetated areas**, particularly slopes and embankments, early in the growing season or after storm events resulting in one inch of rain in 24 hours to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

2. Inspect **ditches, swales and other open stormwater channels** in the spring, in late fall, and after storm events resulting in one inch of rain in 24 hours to remove any obstructions to flow, remove accumulated sediments and debris, to control vegetated growth that could obstruct flow, and to repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or sideslopes.

3. Inspect **resource and treatment buffers** once a year for evidence of erosion, concentrating flow, and encroachment by development. If flows are concentrating within a buffer, site grading, level spreaders, or ditch turn-outs must be used to ensure a more even distribution of flow into a buffer. Check down slope of all spreaders and turn-outs for erosion. If erosion is present, adjust or modify the spreader's or turnout's lip to ensure a better distribution of flow into a buffer. Clean-out any accumulation of sediment within the spreader bays or turn-out pools.

Recertification requirement:

Within three months of the expiration of each five-year interval from the date of issuance of the permit, the permittee shall certify the following to the Department.

(a) All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

(b) All aspects of the stormwater control system are operating as approved, have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system, as necessary.

(c) The stormwater maintenance plan for the site is being implemented as approved by the Department, and the maintenance log is being maintained.

(d) All proprietary systems have been maintained according to the manufacturer's recommendations. Where required by the Department, the permittee shall execute a 5-year maintenance contract with a qualified professional for the coming 5-year interval. The maintenance contract must include provisions for routine inspections, cleaning and general maintenance.

(e) The Department may waive some or all of these recertification requirements on a case-by-case basis for permittees subject to the Department's Multi-Sector General Permit ("MSGP") and/or Maine Pollutant Discharge Elimination System ("MEPDES") programs where it is demonstrated that these programs are providing stormwater control that is at least as effective as required pursuant to this Chapter.

Conveyance & Distribution Systems: (Stormwater Channels & Culverts, etc.)

1. Inspection schedule:

a. Inspect ditches, swales and other open stormwater channels in the spring, in late fall, and after heavy rains (one inch of rain in 24 hours) to remove any obstructions to flow, remove accumulated sediments and debris, to control vegetated growth that could obstruct flow, and to repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or side-slopes.

b. Inspect culverts in the spring, in late fall, and after heavy rains to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to repair any erosion damage at the culvert's inlet and outlet.

c. Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

2. Mowing: Grass should not be trimmed extremely short, as this will reduce the filtering effect of the swale (MPCA, 1989). The cut vegetation should be removed to prevent the decaying organic litter from adding pollutants to the discharge from the swale. The mowed height of the grass should be 2-4 inches taller than the maximum flow depth of the design water quality storm. A minimum mow height of 6 inches is generally recommended (Galli, 1993).

3. Erosion: It is important to install erosion and sediment control measures to stabilize this area as soon as possible and to retain any organic matter in the bottom of the trench.

4. Fertilization: Routine fertilization and/or use of pesticides is strongly discouraged. If complete re-seeding is necessary, half the original recommended rate of fertilizer should be applied with a full rate of seed.

5. Sediment Removal: The level of sediment deposition in the channel should be monitored regularly, and removed from grassed channels before permanent damage is done to the grassed vegetation, or if infiltration times are longer than 12 hours. Sediment should be removed from riprap channels when it reduces the capacity of the channel.

Roadways & Parking Surfaces:

Paved surfaces shall be swept or vacuumed at least once annually in the Spring to remove all Winter sand, and periodically during the year on an as-needed basis to minimize transportation of sediment during rainfall events.

Vegetated Swales:

Mowing: Grass should not be trimmed extremely short, as this will reduce the filtering effect of the swale (MPCA, 1989). The cut vegetation should be removed to prevent the decaying organic litter from adding pollutants to the discharge from the swale. The mowed height of the grass should be 2-4 inches taller than the maximum flow depth of the design water quality storm. A minimum mow height of 6 inches is generally recommended (Galli, 1993).

Routine Maintenance and Inspection: The area should be inspected for failures following heavy rainfall (one inch of rain in 24 hours) and repaired as necessary for newly formed channels or gullies, reseeding/sodding of bare spots, removal of trash, leaves and/or accumulated sediments, the control of woody or other undesirable vegetation and to check the condition and integrity of the check dams.
Aeration: The buffer strip may require periodic mechanical aeration to restore infiltration capacity. This aeration must be done during a time when the area can be reseeded and mulched prior to any significant rainfall.

Erosion: It is important to install erosion and sediment control measures to stabilize this area as soon as possible and to retain any organic matter in the bottom of the trench.

Fertilization: Routine fertilization and/or use of pesticides is strongly discouraged. If complete re-seeding is necessary, half the original recommended rate of fertilizer should be applied with a full rate of seed.

Sediment Removal: The level of sediment deposition in the channel should be monitored regularly, and removed from grassed channels before permanent damage is done to the grassed vegetation, or if infiltration times are longer than 12 hours. Sediment should be removed from riprap channels when it reduces the capacity of the channel.

Level Lip Spreader:

Long term maintenance of the level spreader is essential to ensure its effectiveness. Spreaders constructed of wood, asphalt, stone or concrete curbing also require inspection and maintenance.

1. **Inspections:** At least once a year and following major storms (one inch of rain in 24 hours), the level spreader pool should be inspected for sand accumulation and debris that may reduce its capacity.
2. **Sediment Removal:** Sediment build-up within the swale should be removed when it has accumulated to approximately 25% of design volume or channel capacity. Dispose of the sediments appropriately.
3. **Debris:** Remove debris such as leaf litter, branches and tree growth from the spreader.
4. **Mowing:** Vegetated spreaders may require mowing.
5. **Snow Storage:** Do not store snow within the area of the level spreader.
6. **Level Spreader Replacement:** The reconstruction of the level spreader may be necessary when sheet flow from the spreader channelize into the buffer.

GRASSED UNDERDAINED SOIL FILTER:

During the first year, the basin will be inspected semi-annually and following major storm events. Debris and sediment buildup shall be removed from the forebay and basin as needed. Mowing of a grassed basin can occur semiannually to a height no less than 6 inches. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then seeded and mulched. Maintaining good grass cover will minimize clogging with fine sediments and if ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity.

Maintenance Agreement: A legal entity should be established with responsibility for inspecting and maintaining any underdrained filter. The legal agreement establishing the entity should list specific maintenance responsibilities (including timetables) and provide for the funding to cover long-term inspection and maintenance.

Soil Filter Inspection: The soil filter should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 48 hours following a one inch storm or greater. And that following a storms that fill the system to overflow, it drains in no less than 24 to 48 hours. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified.

Soil Filter Replacement: The top several inches of the filter shall be replaced with fresh material when water ponds on the surface of the bed for more than 72 hours. The removed sediments should be disposed of in an acceptable manner.

Sediment Removal: Sediment and plant debris should be removed from the pretreatment structure at least annually.

Mowing: If mowing is desired, only hand held string trimmers or push-mowers are allowed on the filter (no tractor) and the grass bed should be mowed no more than 2 times per growing season to maintain grass heights of no less than 6 inches.

Fertilization: Fertilization of the underdrained filter area should be avoided unless absolutely necessary to establish vegetation.

Harvesting and Weeding: Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary. Add new mulch only as necessary for bioretention cell.

Enc.

Sample Maintenance Log Sheet

Sample Maintenance Log Sheet:

Stormwater Management Facilities Inspection & Maintenance Log Gray Self Storage		
General Information:		
Inspected by:	Date:	Weather:
Reason for Inspection: (Regular Inspection) (Major Rain Event)		

BMP	Conditions Observed	Repairs Needed ?
1. Vegetated Areas		
2. Ditches, Swales, Open Channels		
3. Roadway & Parking Surfaces		
4. Level Lip Spreader		
5. Soil Filter		

Detailed Repair Notes:

BMP Type	Date	Description of Repairs & Sediment Disposal

Attachment 6

Housekeeping Plan

HOUSEKEEPING PERFORMANCE STANDARDS

FOR:

GRAY SELF STORAGE

GRAY, MAINE

Project Developer: Equity Trust Company
29 Derby Lane
North Yarmouth, ME 04097

Responsible Party: Equity Trust Company
29 Derby Lane
North Yarmouth, ME 04097

Introduction:

The contractor shall be responsible for maintaining proper housekeeping standards throughout the construction phase of the project. After the construction phase has been completed, the owner or operator of the project will be responsible.

Standards:

In accordance with the housekeeping performance standards required by MDEP chapter 500 stormwater regulations, the following standards shall be met:

1. **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.
2. **Groundwater protection.** 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.
3. **Fugitive sediment and dust.** 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.

   Operations during wet months that experience tracking of mud off the site onto public roads should provide for sweeping of road areas at least once a week and prior to significant storm events. Where chronic mud tracking occurs, a stabilized construction entrance should be provided. Operations during dry months, that experience fugitive dust problems, should wet down the access roads once a week or more frequently as needed.
4. **Debris and other materials.** Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

   To prevent these materials from becoming a source of pollutants, construction and post-construction activities related to a project may be required to comply with applicable

provision of rules related to solid, universal, and hazardous waste, including, but not limited to, the Maine solid waste and hazardous waste management rules; Maine hazardous waste management rules; Maine oil conveyance and storage rules; and Maine pesticide requirements.

5. **Trench or foundation de-watering.** Trench de-watering is the removal of water from trenches, foundations, coffer dams, ponds, and other areas within the construction area that retain water after excavation. In most cases the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the department.

6. **Authorized Non-stormwater discharges.** Identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:

(a) Discharges from firefighting activity;

(b) Fire hydrant flushings;

(c) Vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);

(d) Dust control runoff in accordance with permit conditions and Appendix (C)(3);

(e) Routine external building washdown, not including surface paint removal, that does not involve detergents;

(f) Pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;

(g) Uncontaminated air conditioning or compressor condensate;

(h) Uncontaminated groundwater or spring water;

(i) Foundation or footer drain-water where flows are not contaminated;

(j) Uncontaminated excavation dewatering (see requirements in Appendix C(5));

(k) Potable water sources including waterline flushings; and

(l) Landscape irrigation.

7. **Unauthorized non-stormwater discharges .** The Department's approval under this Chapter does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with Appendix C (6). Specifically, the Department's approval does not authorize discharges of the following:

(a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;

(b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;

(c) Soaps, solvents, or detergents used in vehicle and equipment washing; and

(d) Toxic or hazardous substances from a spill or other release.

Attachment 7

Pond Test Pit Log/Memo

Mark Cenci
Geologic, Inc.

CERTIFIED GEOLOGIST/LICENSED SITE EVALUATOR

93 Mill Road • North Yarmouth, Maine 04097
Cell: 207.329.3524 • mark@markcenci.com
www.markcenci.com

Soil Investigation for Stormwater Control Feature
Gray Self-Storage, Portland Road, Gray

Date: November 26, 2021

To: Jeff Amos
Terradyn Consultants, LLC
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Summary:

A soil boring was done in a proposed stormwater control feature. The soil is a poorly drained, fine textured soil.

Dates of Investigation: November 24, 2021

Location of Investigation:

The site is located at 190 Portland Road, Gray.

Purpose of Investigation:

The purpose of the investigation was to characterize the soil texture and drainage in an area being used for stormwater control.

Methods of Investigation:

A soil auger and probe were used. A site plan of the proposed stormwater feature, also depicting prior wetlands delineation and site location features by Terradyn Consultants

was used in the field during the investigation. The soil was investigated at the site depicted on the site plan.

Results of the Investigation:

The site is at the base of a sandy, glacial till hillside and adjacent to a large wetland known as Gray Meadows.

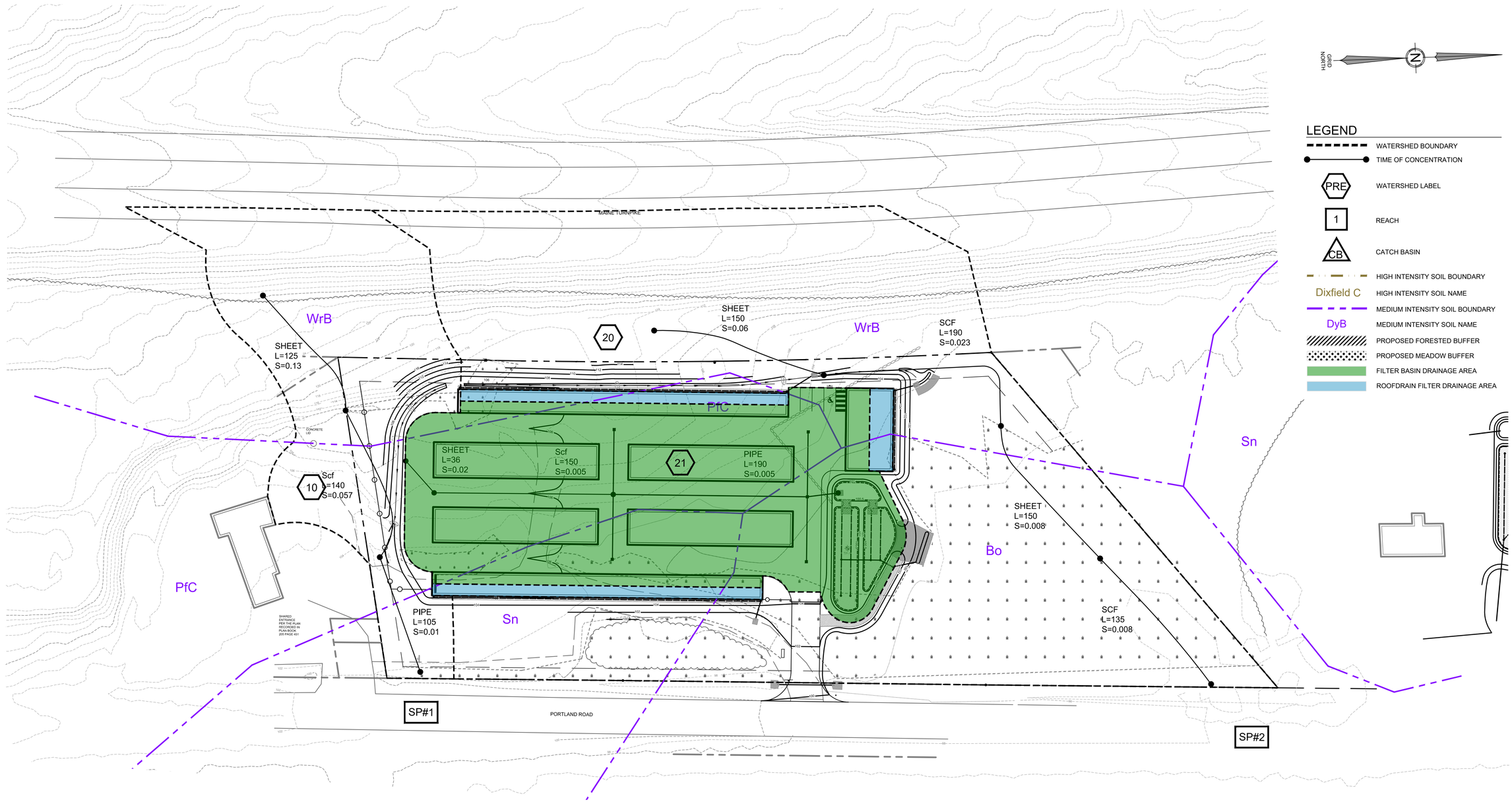
The soil is a fine sandy loam topsoil, and very fine sandy loam subsoil and a silt loam substratum. Water table mottles were visible at 8 inches below the surface and the soil was gleied in color. The soil is hydric.

[redacted]

Mark Cenci
Licensed Site Evaluator #262, Licensed Geologist #467

Attachment 8

Post Development Stormwater Treatment Map



GRID NORTH

LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- PRE — WATERSHED LABEL
- 1 — REACH
- CB — CATCH BASIN
- HIGH INTENSITY SOIL BOUNDARY
- Dixfield C — HIGH INTENSITY SOIL NAME
- MEDIUM INTENSITY SOIL BOUNDARY
- DyB — MEDIUM INTENSITY SOIL NAME
- PROPOSED FORESTED BUFFER
- PROPOSED MEADOW BUFFER
- FILTER BASIN DRAINAGE AREA
- ROOFDRAIN FILTER DRAINAGE AREA

New Impervious Area (SF) =	65770
New Landscaped Area (SF)=	23172
Developed Area (SF) =	88942

Watershed	Total Impervious Area (SF)	Total Landscaped Area (SF)	Total Developed Area (SF)	Incremental Treatment % (Impervious)	Incremental Treatment % (Developed)	BMP
10	0	5302	5302	0.00%	0.00%	None
21	56946	7370	64316	86.58%	72.31%	Filter Basin
Roof	7000	0	7000	10.64%	7.87%	Roof Drain Filter
20	1824	10500	12324	0.00%	0.00%	None
	65770	23172	88942	97.23%	80.18%	

SOILS NOTES:

SOILS WERE OBTAINED FROM THE CUMBERLAND COUNTY SOIL SURVEY AS SHOWN ON THE USDA WEB SOIL SURVEY. THE FULL OUTPUT CAN BE FOUND IN THE STORMWATER REPORT. THE SOIL SURVEY IS OF MEDIUM INTENSITY. THE SOILS ARE SUMMARIZED BELOW:

MAP UNIT SYMBOL	MAP UNIT NAME	HSG RATING
Bo	BIDDEFORD MUCKY PEAT	D
PfC	PAXTON	C
Sn	SCANTIC	D
WrB	WOODBRIDGE	C

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch =40 ft.

[redacted]

DATE: 3/16/2022
P.E.: 10167

NO.	DATE	REVISIONS	APPD BY
2	3/16/2022	REMOVED OUTDOOR STORAGE & ADDED BUILDING #7	
1	11/10/2021	REVISED PER TOWN PLANNING & 3RD PARTY ENGINEERING REVIEW	

TERRADYN CONSULTANTS, LLC
CIVIL ENGINEERING | LAND PLANNING | STORMWATER DESIGN | ENVIRONMENTAL PERMITTING
41 CAMPUS DRIVE
SUITE 305
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
OFFICE: (207) 926-5111
www.terradynconsultants.com

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
GRAY SELF STORAGE
PORTLAND ROAD,GRAY, ME

SHEET TITLE:
POST DEVELOPMENT WATERSHED MAP

CLIENT:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

DATE:	3/16/2022
SCALE:	1"=40'
DESIGNED:	JDA
JOB NO:	2125
FILE:	
SHEET	SWP-2.0

TERRADYN CONSULTANTS, LLC

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 310
Portland, ME 04101

Tier 1 Wetland Alteration Application
Gray Self Storage
119 Portland Road, Gray, Maine

On behalf of Equity Trust Company, FBO Beth Cureton, we are pleased to submit the attached Tier 1 Wetland Alteration Permit Application for the proposed Gray Self Storage project. The proposed project results in the alteration of 10,970 SF of forested wetlands.

Existing Conditions

The development parcel is approximately 4.1 acres and is shown as lots 31-10 & 31-14 on the Town of Gray Tax Map 59 and is approximately located at 119 Portland Road. Portland Road (Route 100) borders the eastern property border and the Maine Turnpike is located along the western boundary. The property is located within the Commercial (C) Zone. See attached Figure 1 for USGS Location Map.

The property contains an old driveway that connects Portland Road to a small (<10,000 SF) gravel cleared area that is located directly adjacent to the neighboring commercial property to the south. The rest of the property is undeveloped forest and wetland area. See attached Figure 2 for Aerial Map.

Mark Cenci of Mark Cenci Geologic performed a wetland delineation in the summer of 2021. The site contains a series of forested wetlands. The northern corner of the property is part of a large, forested wetland that drains into the Gray Meadows. Wetland areas are located on either side of the existing driveway and on the turnpike side of the gravel maneuvering area. The final wetland area is associated with an old drainage ditch that was presumably constructed to divert turnpike runoff around the site.

A portion of the forested wetland that is located on the northeast corner of the site is within 250' of a significant wetland. This means that all wetlands that are directly connected to the northeast corner of the property are classified as Wetlands of Special Significance (WOSS). The Maine DEP determined that the nature of our development, impacts to these wetlands could be permitted with a Tier 1 Wetland Alteration Permit. See Exhibit 9 for the Tier Waiver letter.

Proposed Development

The applicant is proposing to create a self-storage facility that will feature seven self-storage buildings along with the associated maneuvering area, utility infrastructure, landscaping and stormwater facilities. The buildings provide a total of 30,800 SF of indoor storage. The project was recently revised to remove a 9,000 SF outdoor storage area. The seventh building is now proposed in part of the former outdoor storage area. Facility rentals will be managed by a website. No rental office is proposed onsite which means that the facility does not require any water, sewage or employee parking facilities.

The project will be accessed by a new driveway off Portland Road (Route 100) that will be in the same location as the existing driveway connection. The new driveway leads to leads to a front gate that is approximately 100' off the edge of the road. The gate will be controlled with a keypad mechanism. The applicant will provide the access code to the Gray Fire & Rescue Department. A black chain link security fence will surround the front & southerly sides of the development area.

The existing vegetation in the wetland area located between the existing driveway and Portland Road will be preserved and will provide substantial buffering between the road & the development area. Additional landscaping will be installed in the open area at the south end of the site.

The stormwater management system features an under-drained filter basin that will provide both stormwater quality & quantity control for the site. Site runoff eventually drains to the Pleasant River.

The project will not need to connect to the Town water main nor will a septic system be necessary. The applicant will connect to the Central Maine Power the overhead power lines that run along the project frontage. A transformer will be placed onsite that will provide power to the facility.

Alteration Areas

There are four areas of proposed wetland alteration. They are described below:

Alteration Area 1 (672 SF) is located along the back side of Building 7.

Alteration Area 2 (6,853 SF) is located on the back side of the existing driveway. It will be filled to allow for the construction of the entrance and part of the stormwater pond.

Alteration Area 3 (1,478 SF) is located on the southern edge of the property, adjacent to the developed area.

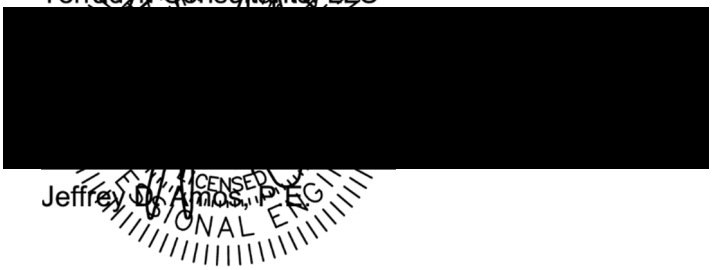
Alteration Area 4 ((1,967 SF) is located on the southern property line directly adjacent to the Turnpike. The area is an old drainage swale that was presumably built to capture Turnpike runoff and route it around the property.

We have attempted to minimize the wetland impacts by locating the development away from the majority of onsite wetlands, re-using the existing entrance and removing a proposed area of outdoor storage in lieu of Building 7.

The following items are attached to this application:

- Exhibit 1 -Tier 1 Application Form
- Exhibit 2 - U.S.G.S. Quadrangle Map
- Exhibit 3 - Aerial Map
- Exhibit 4 -Property Deed
- Exhibit 5 -Statement of Avoidance & Minimization
- Exhibit 6 - Photos of Area with Key Map
- Exhibit 7 - US Fish & Wildlife Verified Endangered Species List
- Exhibit 8 - Copy of Cover Letter to MPHC
- Exhibit 9 – Tier Waiver

Prepared by:
Terradyn Consultants, LLC



Jeffrey D. Amos, P.E.

Exhibit 1

Tier 1 Application Form

Department of Environmental Protection
Bureau of Land Resources
17 State House Station
Augusta, Maine 04333
Telephone: 207-287-7688

FOR DEP USE
ATS #_____
L- _____
Total Fees: _____
Date: Received _____

APPLICATION FOR A NATURAL RESOURCES PROTECTION ACT PERMIT

➔**PLEASE TYPE OR PRINT IN *BLACK INK ONLY***

1. Name of Applicant:	Equity Trust Company fbo Beth Cureton	**5.Name of Agent:**	Jeff Amos, P.E. Terradyn Consultants
2. Applicant's Mailing Address:	29 Derby Lane North Yarmouth, ME 04097	**6. Agent's Mailing Address:**	41 Campus Drive New Gloucester, ME 04260
3. Applicant's Daytime Phone #:	207-317-2014	**7. Agent's Daytime Phone #:**	207-926-5111
4. Applicant's Email Address: Required from *either* applicant or agent:	erincureton@gmail.com	**8.Agent's E-mail Address:**	jeff@terradynconsultants.com

9. Location of Activity: (Nearest Road, Street, Rt.#)	119 Portland Road	**10. Town:**	Gray	**11. County:**	Cumberland

12. Type of Resource: (Check all that apply)	❑ River, stream or brook ❑ Great Pond ❑ Coastal Wetland ☒ Freshwater Wetland ❑ Wetland Special Significance ❑ Significant Wildlife Habitat ❑ Fragile Mountain	**13. Name of Resource:**	Unnamed forested wetland
		14. Amount of Impact: (Sq.Ft.)	**Fill:** 10,970 SF **Dredging/Veg Removal/Other:**

15. Type of Wetland: (Check all that apply)	☒ Forested ❑ Scrub Shrub ❑ Emergent ❑ Wet Meadow ❑ Peatland ❑ Open Water ❑ Other_____	**FOR FRESHWATER WETLANDS**		
		Tier 1	*Tier 2*	*Tier 3*
		❑ 0 - 4,999 sq ft. ❑ 5,000-9,999 sq ft ☒ 10,000-14,999 sq ft	❑ 15,000 – 43,560 sq. ft.	❑ > 43,560 sq. ft. or ❑ smaller than 43,560 sq. ft., not eligible for Tier 1

16. Proposed Start Date and Brief Activity Description:	Start: April 2021 - Project is a self storage facility.

17. Size of Lot or Parcel & UTM Locations:	❑ _____square feet, or ☒ 3.65 acres	UTM Northing: _____	UTM Easting: _____

18. Title, Right or Interest:	☒ own ❑ lease ❑ purchase option ❑ written agreement

19. Deed Reference Numbers:	Book#: 38413 38125	Page: 249 201	**20. Map and Lot Numbers:**	Map #: 59	Lot #: 31-10&14

21. DEP Staff Previously Contacted:	Dawn Hallowell	**22. Part of a larger project:**	☒ Yes ❑ No	**After-the-Fact:**	❑ Yes ☒ No

23. Resubmission of Application?	❑ Yes➔ ☒ No	**If yes, previous application #**		**Previous project manager:**	

24. Written Notice of Violation?	❑ Yes ➔ ☒ No	**If yes, name of DEP enforcement staff involved:**		**25. Previous Wetland Alteration:**	❑ Yes ❑ No

26. Detailed Directions to the Project Site:	Property located at 119 Portland Road in Gray.

27. TIER 1	**TIER 2/3 AND INDIVIDUAL PERMITS**	
☒ Title, right or interest documentation ☒ Topographic Map ☒ Narrative Project Description ☒ Plan or Drawing (8 1/2" x 11") ☒ Photos of Area ☒ Statement of Avoidance & Minimization ☒ Statement/Copy of cover letter to MHPC	❒ Title, right or interest documentation ❒ Topographic Map ❒ Copy of Public Notice/Public Information Meeting Documentation ❒ Wetlands Delineation Report (Attachment 1) that contains the Information listed under Site Conditions ❒ Alternatives Analysis (Attachment 2) including description of how wetland impacts were Avoided/Minimized	❒ Erosion Control/Construction Plan ❒ Functional Assessment (Attachment 3), if required ❒ Compensation Plan (Attachment 4), if required ❒ Appendix A and others, if required ❒ Statement/Copy of cover letter to MHPC ❒ Description of Previously Mined Peatland, if required

28. FEES: Amount Enclosed:	$150

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following :

DEP SIGNATORY REQUIREMENT

PRIVACY ACT STATEMENT

Authority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor a permit be issued.

CORPS SIGNATORY REQUIREMENT

USC Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry shall be fines not more than $10,000 or imprisoned not more than five years or both. I authorize the Corps to enter the property that is subject to this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

DEP SIGNATORY REQUIREMENT

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the address located on the front page of this application

[redacted]

Date: 4-20/2022

Date: 4-20/2022

NOTE: Any changes in activity plans must be submitted to the DEP and the Corps in writing and must be approved by both agencies prior to implementation. Failure to do so may result in enforcement action and/or the removal of the unapproved changes to the activity.

(yellow)

ATTACHMENTS FOR A TIER 1 NATURAL RESOURCES PROTECTION ACT PERMIT

For a Tier 1 permit application follow the general instructions on pages 4 to 8 (green) and in addition, submit the following information with the yellow application form and signature page.

☒ A check for the correct fee. Use the current fee schedule to determine fee or see current fee schedule. **If new applicant is a registered corporation, provide either a** *Certificate of Good Standing* **(available from the Secretary of State) or a statement signed by a corporate officer affirming that the corporation is in good standing.**

☒ The appropriate United States Geological Survey Map (U.S.G.S. topography map, 7 1/2 minute if available) or the Maine Atlas and Gazetteer with the activity location clearly marked and labeled on the map. A photocopy of the applicable portion of the topography map is sufficient provided it is clear and readable.

☒ A copy of the documentation substantiating the applicant's title, right or interest in the project site.

☒ A description of the project and a top view drawing showing the area of freshwater wetland to be filled or otherwise altered; areas of any marsh or open water within the freshwater wetland being altered; and surface water bodies within 75 feet of the proposed alteration. All drawings must be drawn to scale and labeled with the applicant's name, the scale used and the date prepared. **Please note that the Corps requires all drawings to be submitted on 8 1/2" x 11" paper which are clear, legible and reproducible.**

☒ Color photos showing the wetland in the activity area. Label each photo with the applicant's name, town where the activity is located, and the date taken.

☒ Avoidance or Minimization:

1. Avoidance: Each applicant must provide a statement that indicates that the alteration of freshwater wetlands on the property has been avoided to the extent feasible considering cost, existing technology and logistics based on overall purpose of the project. Determining whether an alternative exists includes: use of other sites; reducing the size, scope, configuration or density of activity; developing alternative activity designs; and demonstrating the need for the proposed alternative.

2. Minimization: The applicant must demonstrate that the area of wetland to be altered will be limited to the minimum amount necessary to complete the project. Include in the statement a discussion about how the project was designed to reduce wetland impacts (e.g. 2:1 sideslopes on fill instead of 3:1).

☒ As a requirement of the Corps only, a copy of this application, including attachments, must be sent to the Maine Historic Preservation Commission (MHPC) before, or at the same time, the application is filed with the DEP. The applicant should submit a copy of the cover letter sent to the MHPC or a signed statement that this has been done. The address is: MHPC, 65 State House Station, Augusta, ME 04333-0065.

☒ **Submit two (2) copies of the application and all attachments to the DEP.** Be sure to retain a copy of the application for your records. **If you submit a copy directly to the Corps, indicate that in your application.**

☒ **Submit a copy of the application and all attachments to the municipality**. (yellow)

NOVEMBER 8, 2021

I hereby authorize Jeff Amos of Teredyne to act on my behalf as a consultant / engineer in presenting my storage facility project to the town of Arey, Maine the Maine DOT; the Maine EPA and any other bodies required to secure permits on my behalf.

[redacted] 11/8/21

Beth Ann Cineta

Exhibit 2

U.S.G.S. Quadrangle Map

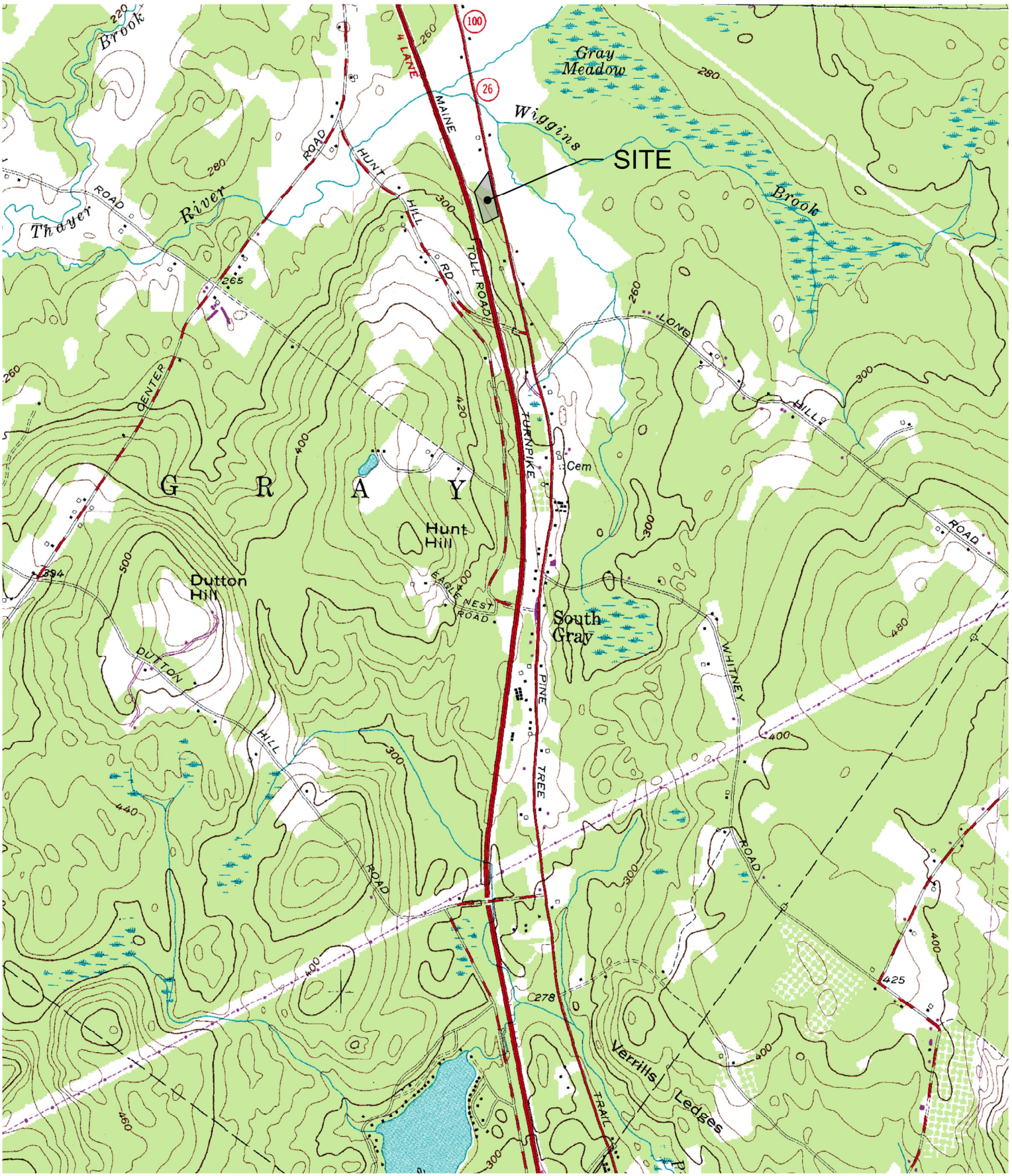


FIGURE 1:U.S.G.S. QUADRANGLE MAP	TERRADYN CONSULTANTS, LLC	PINELAND 41 CAMPUS DRIVE, SUITE 101 NEW GLOUCESTER, ME 04260 PORTLAND 565 CONGRESS STREET, SUITE 201 PORTLAND, ME 04101	PROJECT NO. 2125	SHEET 1
PROJECT: CURETON SELF STORAGE	207.926.5111 • info@terradynconsultants.com • www.terradynconsultants.com		DATE 4/21/2021	OF 2
PREPARED FOR: BETH CURETON 29 DERBY LANE NORTH YARMOUTH, ME 04097			SCALE 1"=2,000'	

Exhibit 3

Aerial Map



FIGURE 2: AERIAL MAP

PROJECT:
CURETON SELF STORAGE

PREPARED FOR:
BETH CURETON
29 DERBY LANE
NORTH YARMOUTH, ME 04097

TERRADYN CONSULTANTS, LLC

PINELAND
41 CAMPUS DRIVE, SUITE 101
NEW GLOUCESTER, ME 04260

PORTLAND
565 CONGRESS STREET, SUITE 201
PORTLAND, ME 04101

207.926.5111 • info@terradynconsultants.com • www.terradynconsultants.com

PROJECT NO.	SHEET
2125	2
DATE	OF
4/21/2021	2
SCALE	
1"=200'	

Exhibit 4

Property Deed

MAINE REAL ESTATE TAX-Paid

1002140152513

DEED OF SALE BY
PERSONAL REPRESENTATIVE (TESTATE)
(Statutory Short Form)

CHRISTOPHER WOOD, duly appointed and acting Personal Representative of the **ESTATE OF DOROTHY M. WOOD**, deceased, as shown by the probate records of Cumberland County, Maine (Docket No. 2011-0735), having given notice to each person succeeding to an interest in the real property described below at least 10 days prior to sale, by the power conferred by law and every other power, for consideration paid, grants to **EQUITY TRUST COMPANY CUSTODIAN FBO BETH ANN CURETON ROTH IRA**, of North Yarmouth, Maine whose mailing address is 29 Derby Lane, N. Yarmouth, ME 04097, the real property located on the westerly side of Portland Road (Route 100) in Gray, Cumberland County, Maine more particularly described as follows:

Reference is made to the premises described on Exhibit A attached hereto and incorporated herein.

Dated: June 24, 2021.

Estate of Dorothy M. Wood

By: [redacted]
Christopher Wood, Personal Representative

STATE OF ~~MAINE~~ Connecticut
~~CUMBERLAND~~, SS. Torrington Litchfield June 24, 2021

Personally appeared before me the above-named Christopher Wood in his said capacity and acknowledged the foregoing instrument to be his free act and deed.

[redacted]
Notary Public

[redacted]
Print Name

MONICA S. DIULIO
NOTARY PUBLIC
My Commission Expires Aug. 31, 2025

640.01

DOC :49240 BK:38413 PG:250
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
07/09/2021, 02:32:09P
Register of Deeds Jessica M. Spaulding E-RECORDED

EXHIBIT A

A certain lot or parcel of land located on the westerly side of the Portland Road (Route 100) in Gray, Cumberland County, Maine more particularly described as follows:

Beginning at a 5/8th inch capped rebar (#1328) set on the westerly sideline of Portland Road at the northerly corner of land now or formerly of Welch (Deed recorded at the Cumberland County Registry of Deeds in Book 16350, Page 203);

Thence S 52° 55' 30" W along the northwesterly sideline of Welch 358.18 feet to a 3/4 inch Iron pipe 12 inches tall on the easterly sideline of land of Maine Turnpike Authority;

Thence in a northerly direction along the sideline of said Maine Turnpike Authority land 235.53 feet to a 5/8th inch capped rebar (#1328) set at a corner of land now or formerly of D'Entremont (29451/217);

Thence N 52° 29' 09 E along D'Entremont land 373.57 feet to a 5/8th inch capped rebar (#1328) set on the westerly sideline of the Portland Road;

Thence S 03° 34' 06" W along the westerly sideline of Portland Road 247.50 feet to the point of beginning.

Being a parcel of land containing 1.56 acres and being a portion and a potion only of the premises conveyed to Dorothy Wood by deed recorded at the Cumberland County Registry of Deeds in Book 2226, Page 72.

1002140141429

MAINE REAL ESTATE TAX-Paid

WARRANTY DEED

David S. Welch and Terri L. Welch of Windham, Cumberland County, Maine, for consideration paid, grant(s) to **Equity Trust Company Custodian FBO Beth Cureton IRA**, of North Yarmouth, Cumberland County, Maine (whose mailing address is 29 Derby Lane, North Yarmouth, ME 04097) with Warranty Covenants, the following described real estate:

See "Exhibit A" Attached

For grantors' source of title, reference may be had to a deed from Robert D. Morgan and David T. Burroughs to the grantor(s) herein, dated May 22, 2001, recorded in Cumberland Registry of Deeds, Book 16350, Page 203.

Any and all other rights, easements, privileges and appurtenance belonging to the granted estate are hereby conveyed.

This conveyance is made subject to the property taxes assessed against the premises, which said taxes are to be prorated between the parties hereto as of the date of delivery of this deed in accordance with 36 M.R.S.A., sec. 558.

Witness my/our hand(s) and seal(s) this 28 day of April, 2021.

WITNESS:

_____ [redacted]
David S. Welch

_____ [redacted]
Terri L. Welch

STATE OF MAINE
Androscoggin, ss April 28, 2021

Then personally appeared the above named David S. Welch and Terri L. Welch and acknowledged the foregoing instrument to be his/her free act and deed.

Before me,

[redacted]
Notary Public/Justice of the Peace
Commission Expiration:

File No.: 2021-2893

SAMANTHA R. TIBBETTS
Notary Public - Maine
My Commission Expires
April 21, 2024

DOC :30327 BK:38125 PG:202
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
04/28/2021, 09:06:13A
Register of Deeds Nancy A. Lane E-RECORDED

File No: 2021-2893

"Exhibit A"

A certain lot or parcel of land, together with any buildings or improvements thereon, situated in the Town of Gray, County of Cumberland, and State of Maine, more particularly bounded and described as follows:

Lot B as depicted on Standard Boundary Survey, Property Plan of Lot Division dated June 3, 2005, recorded in the Cumberland County Registry of Deeds in Plan Book 205, Page 451.

Exhibit 5

Statement of Avoidance & Minimization

TERRADYN
CONSULTANTS, LLC

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 310
Portland, ME 04101

Avoidance & Minimization Statement – Gray Self Storage

The alteration of freshwater wetlands on the property has been avoided to the extent feasible considering cost, existing technology and logistics based on the practical limitations of a self-storage facility.

Wetland Alteration Areas
There are four areas of proposed wetland alteration. They are described below:

Alteration Area 1 (672 SF) is located along the back side of Building 7.

Alteration Area 2 (6,853 SF) is located on the back side of the existing driveway.

Alteration Area 3 (1,478 SF) is located on the southern edge of the property, adjacent to the existing developed area.

Alteration Area 4 ((1,967 SF) is located on the southern property line directly adjacent to the Turnpike. The area is an old drainage swale that was presumably built to capture Turnpike runoff and route it around the property.

Avoidance and Minimization Measures
The layout went through an iterative process in order to limit the amount of proposed alteration to where it is currently proposed. The following list outlined many of the steps that were taken.

- We have attempted to minimize the wetland impacts by locating the development away from the majority of onsite wetlands. There is a large, unbroken forested wetland located along the northeast corner of the property. We tried to limit the impact to this area by locating the development in the southern portion of the property.

- Alteration Area 1 has undergone a series of reductions to get down to the current impact area. A gravel outdoor storage area was originally proposed in this vicinity. The pad was initially proposed to be 150'x100', was then reduced to 135' x 70' and later removed in lieu of Building 7. The associated impacts related to each iteration were reduced from 6,399 SF to 3,022 SF and finally to the currently proposed 672 SF. Overall, the design iterations reduced the expected impact by 5,727 SF.

  The fill slope behind Building 7 was steepened from the 3:1 to 2:1 to reduce the fill extension.

- Our largest area of impact (Area 2) is for the project entrance. We matched the existing entrance location and updated the MDOT driveway entrance permit based on the current use. There are wetland areas on either side of the existing driveway. If the driveway were moved further south, we'd need to impact the wetland that is between the driveway

and Portland Road and the amount of wetland impact would be slightly greater than the current location.

It is important to understand traffic circulation for a self-storage facility. The entrance typically enters the site aligned with the main interior drive aisle. The units are closely spaced and the need to maneuver is kept to a minimum. This means that the desired entrance points would be on either end of the site. Unfortunately, the entrance to the commercial property to the south is located directly adjacent to our project's southern border. Section 402.10.11.B.5.b (Site Development Standards for Site Plan Review) states:

> *Private accessways in or out of a development must be separated by a minimum of seventy five(75) feet where possible.*

If our driveway were installed on the south of the site at a distance of 75' from the abutting driveway, it wouldn't come close to aligning with the internal drive aisle that is located on the south end of the project.

- Wetland Alteration Area 3 was created many years ago by the installation of the gravel pad & driveway. We presume the natural drainage path was blocked because its located right along the edge of the gravel pad. This area was largely unavoidable because its in the body of the site.

- Alteration Area 4 is an old, unmaintained drainage ditch that appears to have been constructed to divert Turnpike runoff around the south side of the property. The swale is very flat and overgrown with vegetation and became wetlands over time. We are re-establishing a drainage swale in this area since we don't want uncontrolled stormwater to enter our drainage system. The cut slope matches back into existing ground at a 2:1 slope. A typical 3:1 slope would have created an additional 60 SF of wetland alteration.

- There is an area of wetlands that is located between the existing driveway and Portland Road. We avoided this area entirely.

- The stormwater pond embankment slopes are designed to be 2:1 along the edge adjacent to the wetlands. This was done to match into existing ground faster than a typical 3:1 slope. We were able to avoid the wetlands on the north of the pond and reduced the amount of wetland fill to the east.

- We raised the stormwater pond to allow the underdrain to flow to the level spreader that is to be located at the base of the spillway. We originally designed the underdrain to flow to the roadside ditch, but the public works department wanted the pipe to flow to a level spreader prior to flowing into the ditch. That would have created another area of impact as well as temporary impact from the installation of the pipe. We shallowed up the cover on the stormwater pipes in the parking/maneuvering area and raised the pond bottom about a foot and re-designed the outlet.

Exhibit 6

Photos of Area with Key Map

GRID NORTH

N

1

2

3

4

5

6

7

8

9

10

11

12" CPP

24" CMP

15" CMP

TP-1

GRAPHIC SCALE

0 80 40 20

(IN FEET)
1 inch =40 ft.

STATE OF MAINE
PROFESSIONAL ENGINEER

41 Campus Drive, Suite 301
New Gloucester, ME 04260

565 Congress Street, Suite 201
Portland, ME 04101

(207) 926-5111
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TERRADYN
CONSULTANTS, LLC

Civil Engineering - Land Planning - Stormwater Design - Environmental Permitting

477

SHEET DESCRIPTION
PHOTO KEY MAP
GRAY SELF STORAGE

PREPARED FOR
EQUITY HOLDINGS LLC
29 DERBY LANE
NORTH YARMOUTH, ME 04097

JOB NO.
2125

DATE
12/8/2021

SCALE
1"=40'

SHEET
1

OF
1

TERRADYN
CONSULTANTS, LLC

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 310
Portland, ME 04101

Gray Self Storage: Color Photos

The following pictures show the Gray Self Storage project area. See attached Photo Key Map for location and orientation of pictures. Pictures were taken in November 2021.



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11

Exhibit 7

US Fish and Wildlife Verified Endangered Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To:
Consultation Code: 05E1ME00-2022-SLI-0340
Event Code: 05E1ME00-2022-E-01268
Project Name: Gray Self Storage

December 13, 2021

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: http://www.fws.gov/mainefieldoffice/Project%20review4.html

Additionally, wind energy projects should follow the wind energy guidelines: http://www.fws.gov/windenergy/ for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm and at:

http://www.towerkill.com; and at:
http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2022-SLI-0340
Event Code: Some(05E1ME00-2022-E-01268)
Project Name: Gray Self Storage
Project Type: FILL
Project Description: a self-storage facility that will feature six self-storage buildings & a small outdoor storage area along with the associated maneuvering area, utility infrastructure, landscaping and stormwater facilities.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.8647606,-70.32514112135996,14z



Counties: Cumberland County, Maine

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To:
Consultation code: 05E1ME00-2022-TA-0340
Event Code: 05E1ME00-2022-E-01271
Project Name: Gray Self Storage

December 13, 2021

Subject: Verification letter for the 'Gray Self Storage' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear tim michaud:

The U.S. Fish and Wildlife Service (Service) received on December 13, 2021 your effects determination for the 'Gray Self Storage' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) only for the northern long-eared bat. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- Monarch Butterfly *Danaus plexippus* Candidate

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

---

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Gray Self Storage

2. Description

The following description was provided for the project 'Gray Self Storage':

> a self-storage facility that will feature six self-storage buildings & a small outdoor storage area along with the associated maneuvering area, utility infrastructure, landscaping and stormwater facilities.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.8647606,-70.32514112135996,14z



Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require

ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

   Yes

2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")

   No

3. Will your activity purposefully **Take** northern long-eared bats?

   No

4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?

   Automatically answered
   No

5. [Semantic] Is the project action area located within 0.25 miles of a known northern long-eared bat hibernaculum?

   Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency

   Automatically answered
   No

6. [Semantic] Is the project action area located within 150 feet of a known occupied northern long-eared bat maternity roost tree?

   Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency

   Automatically answered
   No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

0

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

2

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

Exhibit 8

Copy of Cover Letter to MPHC

Transmittal Letter

To: Maine Historic Preservation Commission
55 Capitol Street
State House Station 65
Augusta, ME 04333

From: Terradyn Consultants L.L.C.
41 Campus Drive, Suite 301
New Gloucester, ME 04260
(207) 926-5111

info@terradynconsultants.com

Attn: To Whom It May Concern:

Re: Gray Self Storage – Tier 1

Date: December 14, 2021

Quantity	Description
1	Copy of Tier 1 Application

To Whom It May Concern:,

Attached is a copy of the Tier 1 wetland alteration permit application for the Gray Self Storage project. The development parcel is located on the westerly side of Route 100 in GrayEx.

Let me know if you have any questions.

Thank you,

[redacted]

Jeffrey D. Amos, P.E.

Cc: Tribal Historic Preservation Officers

Exhibit 9

Tier Waiver Letter

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

MELANIE LOYZIM
COMMISSIONER

February 28, 2022

Jeff Amos
jeff@terradynconsultants.com

RE: EQUITY TRUST COMPANY, GRAY

Dear Jeff:

Thank you for submitting materials in support of your proposal to construct a self-storage facility within a freshwater wetlands in Gray, with a proposed direct impact of approximately 13,320 square feet. Approximately 9,875 square feet of proposed impact is located within a Wetland of Special Significance. The submission and subsequent correspondence, along with supportive data and related materials on file, was used to assess the potential wetland and habitat impacts that will occur as a result of the proposed project. The assessment included, among other things, the size of the proposed alteration, the functions of the impacted area, existing development and scenic character of the area, elevation differences, and hydrological connections to surface water and other nearby protected natural resources.

Due to the type of freshwater wetlands at the project site that you propose to alter and their containment of Significant Wildlife Habitat, the wetland at the project site is categorized as a Wetland of Special Significance (WOSS), pursuant to the Department's Wetlands and Waterbodies Protection Rules, Chapter 310, §4(A). A proposed alteration of a WOSS often requires an individual Natural Resources Protection Act (NRPA) permit. However, some alterations of a freshwater WOSS may be eligible for Tier 1 review pursuant to Section 4 (B) of the Department's Chapter 310. Due to the minimal size of the proposed alteration to the wetland and the anticipated negligible effect of the proposed project on the functions and values of the wetland, the Department waives the requirement for an Individual NRPA permit and has determined that the proposed project is eligible for Tier 1 review.

This opinion is based upon materials submitted to the Department on February 11, 2022. This opinion is subject to change if the proposed project changes or is revised. The relevance of this opinion may also be affected by changes or revisions to the applicable laws or regulations. This opinion does not imply conformance with any other local, state, or federal requirements.

If you have any further questions, please feel free to contact me at (207) 699-9352- or via email at alex.v.groblewski@maine.gov.

Sincerely,

Alex Groblewski

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

website: www.maine.gov/dep

Bureau of Land Resources

Cc: File

TERRADYN CONSULTANTS, LLC

Pineland
Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

ATTACHMENT 4 – Conformance to Conditional Use Standards

Gray Self Storage, Portland Road

402.9.3.F Standards Applicable to Conditional Use Permits

1. Will be compatible with the general character of the neighborhood with regard to design, scale, and bulk of proposed structures;

   Response: The project is compatible with the neighborhood. Another self storage facility is located one property away to the south. The property across the street is undeveloped and a large forested wetland lies between the proposed site and the residence to the north.

2. Will not have a significant detrimental effect on the use and peaceful enjoyment of abutting property as a result of noise, vibrations, fumes, odor, dust, light or glare.

   Response: The project will not have a significant impact to the neighboring properties. The development is a low traffic generator. Most of the site traffic will be during standard business hours. No fumes, vibrations, odor or dust will be created by the facility. The building mounted lights are full cut-off. The cut-sheet for the fixture is shown on Sheet C-3.2. The residence to the north is separated by a forested area.

3. Will not have a significant adverse effect on adjacent or nearby property values;

   Response: No adverse effect on adjacent or nearby property values is expected. The development is consistent with other commercial development in the immediate vicinity.

4. Will not result in significant hazards to pedestrian or vehicular traffic or significant traffic congestion;

   Response: The project is a very low traffic generator. It will not cause traffic congestion.

5. Will not result in significant fire danger;
   Response: Storage of petroleum products is prohibited. Uninhabited storage units on an unmanned site generally don't pose fire risk to people.

6. Will not result in significant flood hazards or flood damage, drainage problems, ground or surface water contamination, or soil erosion;

   Response: Stormwater calculations were provided that show that peak rates of runoff are controlled. The site is not located within a flood zone. No septic system is proposed and no

petroleum products are allowed to be stored on the site. There's no significant risk for either surface water or groundwater contamination.

7. Will be served adequately by, but will not overburden, existing public services and facilities, including fire protection services, roads, water and storm drainage systems.

   Response: Access, circulation, utilities and storm drainage systems are designed to conform to the Ordinance. The facility will be a low traffic generator, will not use any public water, will not result in additional school children, and has been designed to control stormwater to an appropriate level.