TOWN OF GRAY

PLANNING BOARD

AGENDA • OCTOBER 16, 2023

Planning Board **Regular Meeting**	**Henry Pennell Municipal Complex** **24 Main St., Gray, Maine** **And via Zoom videoconferencing:** **https://us06web.zoom.us/j/85745495497**	**7:00 PM**

I. MEETING COMMENCES

Roll Call

II. MINUTES APPROVAL

a. Planning Board - Regular Meeting Minutes July 13, 2023
Planning Board - Regular Meeting Minutes September 14, 2023

III. INFORMATION EXCHANGE

IV. PUBLIC HEARINGS

a. The Planning Board will hold the public hearing on the proposed amendments to the Zoning Ordinance, Chapter 402, to add a new section, 402.8.11: Self-storage facility standards; and to amend the Village Center/VC Proper Design Standards.

b. The Planning Board will hold the public hearing on proposed amendments to the Zoning Ordinance, Chapter 402, and the Village Center/VC Proper Design Standards related to State law 30-A MRSA Sections 4364 and 4364-A, regarding affordable housing projects and housing density.

V. NEW BUSINESS/PUBLIC HEARINGS

a. Hemlock Woods
A request by 38 Blackthorne LLC, represented by Terradyn Consultants, LLC, to amend the Hemlock Woods subdivision located adjacent to Blackthorne Lane in a Rural Residential Agricultural zoning district. The proposed amendments show Blackthorne Lane where it was actually constructed and prior lot divisions in accordance with prior enforcement that has been resolved. The proposed amendment is to create one new backlot for an existing dwelling on Tax Map 53, Lot 43-02.

b. Cambell Acres
A request by McDonnell Brothers Custom Builders, LLC, represented by DM Roma Consulting

Engineers, for Planning Board preliminary plan review of a proposal to create three lots in the Cambell Acres subdivision on the 7.12+/- acre parcel near 9 Jenny Drive, Map 56, Lot 17-28-03 in the Rural Residential and Agricultural zoning district. This proposal is subject to major subdivision review.

VI. NEW BUSINESS

a. Approve FY 2024 meeting schedule

b. 152 Portland Road

A request by 152 Portland Road, LLC, represented by David St. Clair of St. Clair Associates, for sketch plan review of a proposal to divide the 2.38+/- acre lot at 152 Portland Road, Tax Map 59, Lot 31-19, and add a residential use. The property has an existing professional office use. The property is located in the Commercial Zoning District and the proposal is subject to conditional use review, major subdivision review, site plan amendment review and multi-family development standards.

c. Aerie Estates

A request by Sebago Realty, LLC, represented by JP Connelly of D.H. Roma Consulting Engineers, for sketch plan review of a proposal to create a 14-lot residential open space subdivision on the 41+/- acre parcel off Eagles Nest Road, at Tax Map 63, Lot 35-24, on the remaining land in the Eagles Ridge Subdivision, in a Rural Residential and Agricultural zoning district. The proposal is subject to amendment to an approved subdivision plan review.

VII. CONTINUED BUSINESS

a. Stillwater Pines

A request by A.H. Grover, Inc., represented by Steve Roberge of SJR Engineering, Inc., for Planning Board preliminary plan review of a proposal to create 22 lots in Phase II of the Stillwater Pines Residential Open Space subdivision on the 36.29+/-acre parcel off Woodcock Road, Map 44, Lot 032-112-000 in the Medium Density zoning district. This proposal is subject to major subdivision review and the property is subject to a contract zoning agreement.

VIII. ADJOURNMENT

** The Town of Gray is an equal opportunity employer and complies with all applicable equal access to public accommodations law. If you are planning to attend a Town Council or Town committee or board meeting and need assistance with a physical disability, please contact the Town Manager's office at least 48 hours in advance of the meeting to have the Town assist you. 657-3339. TTY 657-3931.*

TOWN of GRAY

PLANNING BOARD

MINUTES • JULY 13, 2023

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

I) MEETING COMMENCES

ROLL CALL

Attendee Name	Status
Dan Cobb	Present
Tamara Lee Pinard	Present
Melinda Sheehee	Present
Dan Maguire	Present
Kristen Muszynski	Present
Martin Meaney	Present

Board member David Phelps was absent excused.

Call to order 7:03 p.m.

II) MINUTES APPROVAL

II.a) Planning Board- Regular Meeting- June 8, 2023 as amended

Motion to approve June 8, 2023 Planning Board meeting minutes

RESULT	**PASSED [UNANIMOUS]**
MOVER	Melinda Sheehee
SECONDER	Tamara Lee Pinard
AYES	Dan Cobb, Tamara Lee Pinard, Melinda Sheehee

III) INFORMATION EXCHANGE

Kristen shared update regarding LD2003 and the new deadline of January 1, 2024.
She also noted the Town wide board/committee meeting October 5, 2023.
The board agreed to move the August meeting to Monday, August 14 to accommodate staff liaison absence for conference attendance.

IV) NEW BUSINESS

IV.a) Sketch Plan Review: Cambell Acres Subdivision Amendment
A request by McDonnell Brothers Custom Builders, LLC, represented by DM

Roma Consulting Engineers, for Planning Board sketch plan review of a proposal to create three lots in the Cambell Acres subdivision on the 7.12+/- parcel off Jenny Road, Map 56, Lot 17-28-03 in the Rural Residential and Agricultural zoning district. This proposal is subject to major subdivision review.

Representative JP Connelly of DM Roma presented the plan. He noted that he had adjusted the plan from the original sketch submittals, to show grade and alignment of the road to adhere to town ordinance. He spoke to the development plan for the site. PB members noted that they are interested in site walk to picture the driveway entrance/slope. Advised the applicant to stake out the curb cut, centerline of the road. Board set site walk for Thursday, August 3, 2023 at 5 p.m.

V) NEW BUSINESS/PUBLIC HEARINGS

V.a) Amendment to an Approved Site Plan and Subdivision Plan: Avesta Meadowview II
A request by Avesta Housing Development Corporation, Avesta Meadowview II LP and Gray Senior Housing, Inc., represented by Ransom Consulting, LLC, for review of an amendment to an approved site plan and subdivision plan, for a multi-family 26-unit senior housing development located near 16 Hancock Street, Tax Map 43, lot 405-39, in the Village Center Zoning District. This application received approvals in June 2022 for site plan, conditional use, and subdivision review, as well as multi-family housing standards and village design standards.

Representative Maureen McGlone of Ransom Engineering presented the project amendments, including impacts from loss of the perimeter buffer, stormwater and utility easements. Tamara questioned pros/cons of locating the onsite power pole in the buffer. Maureen noted it would require more underground line. Dan Cobb asked if CMP would remove old poles? Maureen said yes they will remove them, but no timeline is provided.

Motion to continue Review of an Amendment to an Approved Site Plan and Subdivision Plan: Avesta Meadowview II
A request by Avesta Housing Development Corporation, Avesta Meadowview II LP and Gray Senior Housing, Inc., represented by Ransom Consulting, LLC, for review of an amendment to an approved site plan and subdivision plan, for a multi-family 26-unit senior housing development located near 16 Hancock Street, Tax Map 43, lot 405-39, in the Village Center Zoning District. This application received approvals in June 2022 for site plan, conditional use, and subdivision review, as well as multi-family housing standards and village design standards.

RESULT	**PASSED [UNANIMOUS]**
MOVER	Melinda Sheehee
SECONDER	Tamara Lee Pinard
AYES	Dan Cobb, Tamara Lee Pinard, Melinda Sheehee

Public Hearing opened at 7:33 p.m.

Cyndie Rogers, Meadowview resident, addressed the board. She said the plans have changed since initial Avesta meeting with residents and she would like an updated map of the new plans. Avesta representatives agreed to provide maps.

Public Hearing closed at 7:36 p.m.

The Board discussed the perimeter buffer and agreed that more robust plantings and boulders to protect those plantings from plowing damage are necessary.

Board also agreed to require power pole location outside of buffer.

Maureen stated that they can get updated landscaping plan for year-round screening. Avesta representatives Seric Kapp and Kyle Ambler agree they can do more buffering.

Cyndie Rogers asked if there will be a buffer between existing Meadowview buildings and the access road. Maureen replied that there is a proposal to include 5 junipers and a tulip tree – yes.

Seric said snow will be removed as needed to prevent pushing/damage.

Dan advised that the applicant should concentrate trees where natural buffer has been removed- Board had no comments on the stormwater plan.

Board agreed that the proposed potential parking spaces shown within the perimeter buffer should not be permitted.

Motion to approve the application by Avesta Housing Development Corporation, Avesta Meadowview II LP and Gray Senior Housing, Inc., for an amendment to an approved site plan and subdivision plan, for a multi-family 26-unit senior housing development located near 16 Hancock Street, Tax Map 43, lot 405-39, in the Village Center Zoning District. This application received approvals in June 2022 for site plan, conditional use, and subdivision review, as well as multi-family housing standards and village design standards. This approval is 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 final subdivision plan shall be amended as necessary, including notations for any waivers as appropriate, and submitted to the Town Planner for final review before planning board members sign it for filing with the Registry of Deeds.
4. An amended stormwater management plan reflecting all comments from the town's consulting engineer, will be submitted to the town.
5. The applicant will submit a landscaping plan for staff approval that provides a mix of evergreen and deciduous trees along the westerly property line sufficient to create a visual buffer to the abutting property in areas where snow storage and other elements are located within the 50' perimeter buffer, per planning board discussion.
6. The applicant will add boulders to protect snow storage area buffer plantings from plow damage.

7. The applicant will include bi-annual inspection of the site drip-edge filter in the site maintenance plan and conduct clean outs regularly to ensure proper operation for stormwater management.
8. The Planning Board delegates authority to town staff to determine appropriate amounts for the inspection escrow account, erosion and sedimentation cash bond and performance guarantee that the developer is required to establish in accordance with Article 10 and 11 of the subdivision ordinance. A cost estimate is to be included in the final submittal for total cost of the subdivision improvements and the E&S measures, as presented in the plan to be reviewed and endorsed by the town's consulting engineering firm.
9. **The following conditions must be met prior to issuance of a building permit:**

   A. Issuance of the Maine DEP permits
   B. Issuance of subsurface waste water disposal permit
   C. All outstanding conditions of approval for the project (that remain applicable)
   D. Completion of a pre-construction meeting
   E. Establishment of all necessary financial sureties and escrows

10. Proposed grass paver parking to be eliminated.

RESULT	**PASSED [UNANIMOUS]**
MOVER	Tamara Lee Pinard
SECONDER	Melinda Sheehee
AYES	Dan Cobb, Tamara Lee Pinard, Melinda Sheehee

V.b) Preliminary Plan Review: Stillwater Phase II

A request by A.H. Grover, Inc., represented by Steve Roberge of SJR Engineering, Inc., for Planning Board preliminary plan review of a proposal to create Phase II of the Stillwater Pines Residential Open Space subdivision on the 36.29-acre parcel off Woodcock Road, Map 44, Lot 032-112-000 in the Medium Density zoning district. This proposal is subject to major subdivision review and the property is subject to a contract zoning agreement.

Steve Roberge of SJR Engineering presented the project with an overview of the plan set, and reviewed the site walk and abutter discussions. He noted that he agreed with and would address staff and engineering comments to date. He noted that the project needs to go to MDEP for SLODA and they are in the process of completing that application now. The board discussed the waiver requests and expressed support for rquiring the hydrogeological study due to the proximity to the Pleasant River. They supported waivers for the phosphorous and high-intensity soil study. Board supported requirement for engineered driveways and discussed potential impact of significant vernal pool setback on several proposed lots. Board discussed retention of trees and potential requirement for a landscaping plan. Ben Grover addresed the board to share concerns about grade and tree hazards if some trees retained between lots. Board agreed that street trees would be an appropriate compromise.

Public Hearing opened at 9:00pm Council liaison Dan Maguire noted that the road extension is proposed at 20' travel width, while the contract zoning

agreement denotes an 18' road. Board would rather see it wider, but not sure if the applicant has that authority. – Page 3 of 8, CZA. Asked Kristen to review with town attorney. Zoom participant Deana F., a property owner of an original section of Woodcock Road lot,inquired about the status of the road, impact behind her lot, mailboxes and grading for her driveway to the road. Ben Grover responded that the gang mailboxes are for phase I residents only; area behind her is all developed, done. No new plans. Kristen provided update on council review of Woodcock Road winter plowing review, coming up July 18. Dan Cobb said the driveway grading question should be addressed with the developer. Public Hearing closed at 9:10pm

Motion to approve the following waivers for the request by A.H. Grover, Inc., represented by Steve Roberge of SJR Engineering, Inc., for Planning Board preliminary plan review of a proposal to create Phase II of the Stillwater Pines Residential Open Space subdivision on the 36.29-acre parcel off Woodcock Road, Map 44, Lot 032-112-000 in the Medium Density zoning district. This proposal is subject to major subdivision review and the property is subject to a contract zoning agreement. *Placeholders:*

1. *The 401.7.3 D requirement for a phosphorous management plan, as the project is not located in the watershed of a great pond.*

2. *The 401.7.4. A requirement for a high-intensity soil survey, per engineering review finding the provided medium-high intensity survey to be sufficient.*

RESULT	**PASSED [UNANIMOUS]**
MOVER	Melinda Sheehee
SECONDER	Tamara Lee Pinard
AYES	Dan Cobb, Tamara Lee Pinard, Melinda Sheehee

Motion to approve Move to approve the following waivers for the request by A.H. Grover, Inc., represented by Steve Roberge of SJR Engineering, Inc., for Planning Board preliminary plan review of a proposal to create Phase II of the Stillwater Pines Residential Open Space subdivision on the 36.29-acre parcel off Woodcock Road, Map 44, Lot 032-112-000 in the Medium Density zoning district. This proposal is subject to major subdivision review and the property is subject to a contract zoning agreement.

1. *The 401.7.4 B requirement for a hydrogeological assessment, as the project is using public water and septic systems will be located outside the aquifer area.*

RESULT	**FAILED [0-3]**
MOVER	Melinda Sheehee
SECONDER	Tamara Lee Pinard
AYES	None
NAYS	Dan Cobb, Tamara Lee Pinard, Melinda Sheehee

Motion to approve Completeness per 401.7.1, the application by A.H. Grover, Inc. for preliminary plan review of a proposal to create Phase II of the Stillwater Pines Residential Open Space subdivision on the 36.29-acre parcel off Woodcock Road, Map

44, Lot 032-112-000 in the Medium Density zoning district. This proposal is subject to major subdivision review and the property is subject to a contract zoning agreement and the applicant is required to submit a hydrogeological assessment per 401.7.4.B.

RESULT	**PASSED [UNANIMOUS]**
MOVER	Tamara Lee Pinard
SECONDER	Melinda Sheehee
AYES	Dan Cobb, Tamara Lee Pinard, Melinda Sheehee

The board agree to hold off on granting preliminary approval due to outstanding hydrogeological study, additional engineering feedback and road width question.

Motion to table preliminary approval

RESULT	**PASSED [UNANIMOUS]**
MOVER	Tamara Lee Pinard
SECONDER	Melinda Sheehee
AYES	Dan Cobb, Tamara Lee Pinard, Melinda Sheehee

VI) ADJOURNMENT

Motion to adjourn Adjourned at 9:34 p.m.

RESULT	**PASSED [UNANIMOUS]**
MOVER	Melinda Sheehee
SECONDER	Tamara Lee Pinard
AYES	Dan Cobb, Tamara Lee Pinard, Melinda Sheehee

TOWN of GRAY

PLANNING BOARD

MINUTES • SEPTEMBER 14, 2023

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

I) MEETING COMMENCES

7:04PM

ROLL CALL

Attendee Name	Status
Dan Cobb	Present
Tamara Lee Pinard	Present
Kristen Muszynski	Present
Melinda Sheehee	Present
Martin Meaney	Present
Dan Maguire	Present

Dan Cobb noted that the Planning Board Member David Phelps resigned and thanked him for his service to the Town.

He explained that the board does not have a formal quorum for this meeting due to the technicality of Melinda's term having expired, and therefore cannot take any votes at this meeting, but they will hear the public comment and expect that Melinda will be reappointed at an upcoming council meeting.

II) MINUTES APPROVAL

II.a) Planning Board - Regular Meeting - July 13, 2023 7:00 PM
TABLED

III) INFORMATION EXCHANGE

III.a)

Reminder: Thursday, October 5 annual meeting of all town committees and boards
Project updates

Kristen updated the board on the status of pending projects and noted the upcoming training opportunity on Oct. 12, and town committees meeting on Oct. 5

IV) NEW BUSINESS

IV.a) Approve FY2024 Planning Board meeting/deadline schedule
TABLED
Tamara noted that the March date will not work for her. Will need to move if we do not have quorum without her participation at that time.

V) NEW BUSINESS/PUBLIC HEARINGS

V.a) Self-storage and Village Design ordinance amendments
The Town of Gray is proposing amendments to the Zoning Ordinance, Chapter 402, to add a new section, 402.8.11: Self-storage facility standards; and to update the Village Center Design Standards reference to require parking behind the principal structure.

Opened 7:10 PM

Scott Liberty addressed the board in opposition to the ordinance amendments, noting that it singles out one type of business. Dan Maguire: addressed the board to explain the council process in creating the amendments.

Public hearing closed 7:21 pm

Dan Cobb explained ordinance review/hearing process. Noted he has previously provided his feedback on these ordinance amendments.

V.b) Hemlock Woods Subdivision Amendment
A request by 38 Blackthorne LLC, represented by Terradyn Consultants, LLC, to amend the Hemlock Woods subdivision located adjacent to Blackthorne Lane in a Rural Residential Agricultural zoning district. The proposed amendments show Blackthorne Lane where it was actually constructed and prior lot divisions in accordance with prior enforcement that has been resolved. The proposed amendments also include creating one new backlot for an existing dwelling on Tax Map 53, Lot 43-02, and eliminating the conservation designation for the common area on the original subdivision plan.

Applicants/representatives present: Laura Hartz, attorney for the applicant, owner Tony Fernandez and Jimmy Courbron of Terradyn Engineering.

Proposal is to split off a 2.5-acre back lot at the end of Blackthorne Lane that includes existing house.

Laura shared the background of the subdivision, which was originally approved in 1989 and was not developed in conformity with the plan. Client is dedicated to retaining open space and will plan on a Phase II to develop the rest of the land. Will return in January or February to ask for further development. Violations on the subdivision have been lifted, no longer encumbered by the zoning violations, just looking to carve off the lot.

No waivers requested, no engineer review for lot split.

Laura confirmed the applicant is fine with all staff comments.

Dan Cobb noted that the board participated in a workshop on this topic at 6 pm.

Open public hearing 7:32 pm

Debbie Redmond, resident of Blackthorne Lane, second lot in, addressed the board to say her main concern now is the road, and acknowledged that review of that item will go to phase II. She is not sure if stays a private road; members of road association need to vote on the road and who pays for improvements. If open space/trails/open to public – will town accept road, where will people park, what engineering needed? Noted pools of water on both sides of dirt road to date.

Josh Martell: 20 Blackthorne, addressed the board to say he has no major objections to splitting off this single lot. Difficult not knowing what Phase II will look like. More than a couple SFH, could become problematic.

Close public hearing 7:37 pm

Laura responded that the road would have to be improved as part of phase II and road association docs describe that the ROA would pay for it. Goal of applicant is to develop the road for acceptance by the town so ROA does not have to pay for it.

Dan asked if board feels the application is complete as submitted – all agreed, but Dan noted that it starts to get intertwined with Phase II.

Kristen advised that the 8-acre minimum open space is due to applicant's request to include that provision in the Phase I proposal.

All board members expressed that they would prefer to hold off on any vote regarding open space until they know what is proposed for Phase II.

V.c) Cambell Acres Subdivision Amendment

A request by McDonnell Brothers Custom Builders, LLC, represented by DM Roma Consulting Engineers, for an amendment to the Cambell Acres subdivision, to divide the +/- 7-acre parcel off Jenny Drive, at Tax Map 56, Lot 17-28-03, in into three lots. The proposal is subject to major subdivision plan review, located in the Rural Residential & Agricultural zoning district.

JP Connelly of DM Roma Consulting engineers addressed the board, presented the changes to the plan to date, post site walk. Comments at site walk regarding buffering: changed driveway to accommodate greater setback. Buffer increased from roughly 10' to 28' lot 1 abutting Fosters' property. Shared photos of proposed duplex design.

Regarding waivers: would still like a high-intensity soil survey waiver, but plans to provide HHE-200s with nitrate plumes from geologist to address staff concerns regarding wells.

Also intends to seek partial waiver for monuments, but will increase those per staff review. Dan: noted that a combination of monuments aside from stone walls seems fine.

JP said he has feedback and updated plans to address the engineer and staff comments, ready to present for next review.

Prefer not to put a light at the top of the hill; proposing it for the intersection. Kristen suggested it would be helpful to get board feedback on that item. Board members agreed that light would not be ideal at the end of the road.

Dan wants several comments as submitted from abutter Mr. Licht considered.

He asked if single family homes could be considered. JP said two-family homes are the preferred option; as two-family is an allowed use, and they have created plans for the buildings that fit on the lots.

Public comment opened at 8:07 PM

Marybeth Ouellette: Duplexes will destroy our neighborhood and home valuations. Worried about the traffic, maintenance of the development. Who will maintain yards, trash? Quiet neighborhood, they don't want all that traffic.

Kim Shelley: resident of 35 years, does not want a streetlight. Quiet family neighborhood. Want single family homes, families that are coming to stay. Happy to not have streetlights. Duplexes just don't fit with our neighborhood. Want families who are planning on staying and being part of our neighborhood.

Peter Ouellette, 8 Fran Circle: Asked at the site walk whether duplexes would be owned or rented. Rents will be high, will have several people living there. Concern about behaviors. Don't want duplexes in our neighborhoods.

Zach Cooperstein – 55 Cambell Shore Road. Duplex prioritizes profits over interests of existing homeowners. Focused on privacy, peace and quiet, roots. Introducing rental properties to that type of property introduces people who have no interest in the neighborhood.

Rick Licht, 35 Fran Circle: Read excerpts of letter as submitted to the board. Noted that there is a single-family home covenant on deeds of abutting Fran Circle subdivision, sets precedent for neighborhood character. Not arguing whether you can put in duplexes, but is it appropriate in this location?

Mr. Licht further referenced his letter regarding technical items: that lot layout does not meet standards, soils are wet, cutting into groundwater table; buffer is restricted to the shown clearing line.—should be a more clear deeded buffer staked out pre construction; duplex vs SFH affects septic design.

Purpose of the subdivision ordinance- should be noted. Neighborhood character counts.

No streetlight on Fran Circle, most residents do not want one. If they do it, CMP standard ones are not ideal and have no cut off fixtures.

Frank Elkanich: intent of this neighborhood was single family homes. Agree with Rick Licht on his points, do not want a streetlight.

Closed public hearing at 8:32 pm

JP: Acknowledged the input and said he will convey to the applicant that SFH is what the neighborhood would like. Will ask the board to waive streetlight requirement, per abutter input.

Treeline- agree need to record it and will be done on the subdivision plan.

Will have a geologist work on the HHE 200s. acknowledge the septic system setbacks from building foundation and those are taken into consideration; will be presented.

Lot width/length- JP stated that he views lot/width as going the other way.

Kristen reviewed staff feedback on length/width of the lots, per Mr. Licht's comments, and shared the former ordinance language for reference, noted that it would be a matter of board interpretation.

Dan Cobb asked that engineer and staff feedback in response to Licht's comments be summarized for next meeting. Dan explained that the board only has certain reviewing authority. Would like next memo to summarize Licht comments in similar engineer comment format for the board to review.

Melinda: Noted that the town needs housing and duplexes are allowed. Just because someone doesn't own doesn't mean they aren't a good neighbor and connected to community. Will do what we can do.

Kristen shared update that LD2003 changes will be coming up and public hearings will be open if attendees have interest in the issue of housing density.

Dan Maguire noted that he has suggested for the council to discuss duplexes for several years and encouraged attendees to please stay engaged.

Dan Cobb- asked JP to come back with revised plan and asked Kristen to share Cooperstein and Shelley letters to JP and Maguire.

VI) ADJOURNMENT

8:59PM

MEMO

August 25, 2023

TO: Town Council, Town Manager Nate Rudy
FROM: Community Development
RE: Updated amendments to proposed self-storage ordinance; self-storage design standards; village design standards amendment for parking

In response to input from the July 18 Town Council workshop discussion, herein is an updated version of the proposed ordinance, 402.8.11 Self-Storage Facility Standards for council discussion and review, including the associated self-storage facility design standards.

Also included for your review is an amendment to the Village Design Standards, to add a requirement for locating parking spaces in the rear of the building. This amendment was proposed during the June 12, 2023 workshop.

These items are before you for consideration at the September 5, 2023 Town Council meeting for a public hearing and first reading. The Planning Board will also host a public hearing at their regular meeting Sept. 14, 2023.

Notably, the council has extended the moratorium on self-storage developments through Dec. 27, 2023, with a view toward getting the amendments in place prior to the moratorium's expiry.

New Section

402.8.11: Self-storage facility standards:

A. Purpose: The purpose of these standards for Self-Storage is to maximize the use and value of commercial uses for road frontage properties and minimize adverse aesthetic impacts of self-storage facilities on abutting and neighboring properties.

B. Applicability

1. In addition to applicable review standards established in Article 10 (Site Plan Review), all self-storage facilities proposed after the adoption of these standards (March 1, 2023) are required to comply with requirements in this section and the associated design standards. This includes any self-storage facility that was previously approved but did not meet the Time Limit on Approval requirements of the zoning ordinance, and is thus considered a new application.

2. Expansion: Any self-storage facility that is proposed to be expanded after the adoption of these standards shall be required to obtain Planning Board approval and shall be subject to all practically achievable self-storage performance standards and design standards, as determined by the Planning Board, for the expanded portion of the development and associated infrastructure. No expansion or additional buildings will be permitted within the 300' setback from the edge of a road or right-of-way (ROW), whichever is greater, that is either publicly owned or has a public easement for winter maintenance.

3. Repairs/Replacement/Rebuilding: The Code Enforcement Officer shall have the authority to issue building permit(s) for the repair, replacement or rebuilding of one or more building(s) in a Self-Storage Facility for the same size, height and location as the original structure(s). Such repair, replacement or rebuilding shall be subject to all practically achievable self-storage performance standards and design standards, as determined by the Code Enforcement Officer in consultation with the Town Planner.

4. Outdoor storage is not permitted as a standalone use and must be integral to a self-storage facility and comply with all standards established in this section and in Article 10.

5. Any outdoor storage, including if added to an existing facility, must comply with all outdoor storage standards as specified in this section and as required in Article 10.

C. Minimum Setbacks

1. Any portion of any element of a self-storage facility must be at least three-hundred (300) feet from the edge of a road or right-of-way (ROW), whichever is greater, that is either publicly owned or has a public easement for winter maintenance. No component of a self-storage facility other than one access/driveway may be located within this three-hundred (300) foot setback. All other components of any self-storage facility must respect this minimum three-hundred (300) foot setback specifically including all fill extensions, buildings, outdoor

storage areas, drainage ditches, stormwater infrastructure, and perimeter buffer as specified in section "F" entitled "Perimeter Buffer Requirements."

2. A perimeter buffer in accordance with standards specified below in section "F" below entitled "Perimeter Buffer Requirements," is required around the entirety of the facility. Stormwater infrastructure is specifically prohibited from this buffer, such as level lip spreaders, detention basins and similar stormwater infrastructure involving clearing of vegetation. Pipes that may need to pass through the area are permitted.

3. Neither the Zoning Board of Appeals nor the Planning Board shall have the authority to reduce any of the minimum setbacks established above in this section "C" entitled "Minimum Setbacks" except for the perimeter buffer as established in this subsection "F," entitled "Perimeter Buffer Requirements" and subsection "G" entitled "Outdoor Self-Storage Standards."

D. Building Requirements

1. One-story self-storage building footprint standards:
   a. Maximum length: two-hundred (200) feet
   b. Maximum width: forty (40) feet.
   c. Maximum height (to the highest point of the structure): twenty-five (25) feet.

2. Two-story self-storage building footprint standards:
   a. Maximum footprint of any one structure: seventy-five hundred (7,500) square feet
   b. Maximum height (to the highest point of the structure): thirty (30) feet

3. Minimum separation between buildings/minimum drive aisle width: twenty-five (25) feet

4. All buildings/structures utilized for self-storage purposes that face the perimeter buffer shall be completely enclosed with permanent sides/siding. In no event shall such buildings/structures have one or more open sides. Seasonal installation and/or removal of temporary sides, such as fabric or similar, shall not be permitted and shall not be considered permanent sides/siding.

5. All buildings/structures shall comply with Town of Gray Design Standards for self-storage facilities (attached). The applicant shall submit scaled color renderings of all proposed buildings/structures as part of the submittal and the planning board will review these as an integral part of their review. The Planning Board shall have the authority to interpret the design standards and require changes to the plans that are consistent with the purpose and intent of the design standards and these performance standards.

6. In the event that a different or future non-residential use is proposed for the front portion of a parcel and self-storage facility use is proposed for the rear portion, the minimum separation between such structures shall be designed to meet currently applicable setbacks to allow for each use to be located on a separate parcel and must meet the Lot Frontage Development

Standards herein.

7. Buildings existing as of March 1, 2023 shall be eligible for re-use as a self-storage facility subject to all of the following standards:

a. The building for re-use must have a footprint no greater than ten thousand (10,000) square feet and be located on the same parcel or a directly abutting parcel containing a self-storage facility existing as of March 1, 2023, and
b. The building for re-use must be within one-hundred-and-fifty (150) feet, irrespective of any property line, of a building in a self-storage facility existing as of March 1, 2023, as measured from building to building, and
c. Any building proposed for re-use shall require Planning Board review and approval, for the purposes of complying with design standards as much as practicable. The Planning Board shall have the authority to require non-structural changes to the building in accordance with design standards as practicable, and
d. Any increases in the volume and/or footprint of a building for re-use, including overhangs, shall require Planning Board review and approval. Such increases shall conform to design standards, as practicable, and
e. In no event shall any increase in volume and/or footprint of a building for re-use purposes be extended to utilize or occupy any additional frontage on a road or right-of-way that is either publicly owned or has a public easement for winter maintenance, other than the portion of frontage occupied by the building that existed as of March 1, 2023, and
f. Increases in volume and/or footprint of a building for re-use, including overhangs that extend towards/closer to a road or right-of-way that is either publicly owned or has a public easement for winter maintenance, shall not be allowed unless the entirety of the building, including the increased volume and/or footprint of the building is at least three hundred (300) feet from the edge of the road or right-of-way, whichever is greater.

E. General Standards

1. Review and approval by the Planning Board is required for any new or expanded self-storage facility. The Planning Board shall review the proposed development under Site Plan Review and design standards, as applicable, and shall ensure that the performance standards in this section are met.

2. Any self-storage facility may consist of one or more combined developed footprint area(s).

3. Each combined developed footprint area shall not exceed three (3) acres/ 130,680 sf. This combined development footprint area shall include all buildings, outdoor storage areas, all stormwater infrastructure, fill extensions, all vehicular accessways, all non-vegetated areas, and similar such areas that are not in their natural state. This calculation shall not include the perimeter buffer and/or buffer areas complying with standards herein.

4. Within a lot with a self-storage facility, site-internal buffers are required to separate each combined developed footprint area. These site-internal buffers shall be a minimum depth of fifty (50) feet and shall conform to the perimeter buffer requirements of Section F, Perimeter

Buffer Requirements. As determined by the Planning Board, limited portions of such internal fifty (50)-foot buffers may contain stormwater infrastructure provided that the aesthetic separation between the two areas is maximized.

5. All standards for the self-storage facility, excluding the perimeter buffer, as detailed below herein, must be met and maintained on a parcel owned in fee by one (1) owner/party/entity. In no event shall the ownership of one or more buildings on one parcel be transferred to separate parties/entities.

6. No maintenance and/or repair work of any type shall be allowed on any vehicle and/or equipment that contains any type of fluid that potentially contaminates soil and/or groundwater if leaked. The operator of the facility shall be required to disclose this information to all parties utilizing the self-storage facility and report any instances of fluid leaks to Gray Public Safety within thirty (30) days of becoming aware of any fluid contamination.

7. All self-storage facilities shall be gated with security provisions sufficient to ensure access to the site only by patrons, owners, and those persons needing to access for operations and/or maintenance.

8. The entire perimeter, except the gated entry, of all self-storage facilities areas shall have a sufficient fence, as determined by the Planning Board as part of their review, to discourage/prevent access. Fence details shall be shown on planning board submittals. Chain-link fencing is not permissible in areas of the site that are visible from the road.

9. One (1) office area to provide administrative services solely serving the self-storage facility may be permitted provided that the cumulative area devoted to this use does not exceed two hundred (200) square feet. In the event that such space is part of a facility, a minimum of two (2) dedicated parking spaces within the immediate vicinity of such office area shall be required that do not block access to any accessway or self-storage unit(s).

10. In addition to applicable lighting requirements established in Article 10, Site Plan Review, all self-storage facilities shall be required to comply with standards in the USA Pattern Lighting Code in the International Dark Sky Association Outdoor Lighting Code Handbook version 1.14.2002 dated December 2000/September 2002 or subsequent update. The Planning Board shall review compliance with such standards, with peer review as necessary at applicant expense, as an integral part of reviewing a proposed facility.

F. Perimeter Buffer Requirements

1. All new, or expanded, self-storage facilities shall comply with all of the following perimeter buffer requirements. Any building(s) existing as of March 1, 2023 that is proposed for re-use as a self-storage facility shall comply with the perimeter buffer requirements to the maximum extend practicable as determined by the Planning Board.

2. The entirety of the perimeter buffer shall consist of dense, mature, natural vegetation meeting and maintaining standards as established in this section.

3. Any of the following site components shall not be located or considered part of the minimum perimeter buffer: driveways, buildings, parking areas, fencing, vehicular accessways, outdoor storage areas, retaining walls, fill extensions for vehicular accessways and/or buildings, drainage ditches and stormwater infrastructure.

4. Only one vehicular accessway shall be allowed in this perimeter buffer unless the planning board determines that through-traffic is necessary to allow a second accessway. Multiple accessways through the buffer are specifically prohibited. The width of any such accessway through the perimeter buffer shall be limited to the practical functionality necessary as determined by the planning board.

5. In the event that applicable standards for the perimeter buffer are met and maintained via an easement, all applicable perimeter buffer standards shall be included in the description of easement language, as determined by the Code Enforcement Officer with input from the Planner, that is recorded at the Registry of Deeds prior to the issuance of a building permit for the project. A condition of approval memorializing this requirement shall be part of the Planning Board final decision.

6. The full depth of the perimeter buffer shall consist of dense, mature, natural, non-invasive vegetation, consisting of predominantly evergreen trees, as determined by the Planning Board. In order for the Planning Board to determine the specifications for the buffer vegetation, the Board shall require applying the point system standards as the minimum standards for any 25 foot by 50 foot for the first one-hundred (100) feet established for a "Shoreland Buffer Strip" contained in Section 15 of the Gray Shoreland Zoning Ordinance (Chapter 403) entitled "Clearing or Removal of Vegetation for Development Activities other than Timber Harvesting" be met and maintained. In accordance with the purpose of maintaining the perimeter buffer, all standards for the "Shoreland Buffer Strip" in Section 15 of Chapter 403 that allow for the removal of vegetation, pruning of branches on the lower one-third of a tree, clearing of vegetation for development, and existing cleared openings shall not be applicable for this Section 402.8.11, Self-Storage Facility Standards.

7. In the event that existing conditions do not meet the requirements of this section at the time the application is before the Planning Board, the Board shall have the authority to require the applicant to plant native species trees (predominantly evergreens) and other appropriate native vegetation to establish a buffer meeting standards established in this section within a reasonable time period as determined by the Planning Board. Ideally, a sufficient buffer should be achieved within five (5) years.

8. In order to ensure that the perimeter buffer meets and maintains standards, or will meet standards per above in this section, the Planning Board shall have the authority for a peer review, at the applicant's expense, and shall also have the authority to require that the applicant post a sufficient financial surety for any necessary replanting per Section 402.10.17

in accordance with professionally accepted practices such as an eighty (80) percent survival rate for a five (5) year period.

9. The Planning Board shall be authorized to require additional buffering and screening, including additional plantings, to maximize the density of the mature natural vegetation, emphasizing the use of evergreen species, for any portion of a proposed self-storage facility located within one or more viewshed(s) from a public road(s), including road(s) that have a public easement for winter maintenance. The Planning Board shall have the authority to require the applicant to submit photographs of existing conditions from various vantages and accurate renderings of the anticipated proposed buffer at periodic time intervals, including at maturity.

10. The Planning Board will have the authority to consider reductions to the depth of the vegetated perimeter buffer or alter the nature of the buffer as herein, at different depths for each of the different buffer areas (front, side, rear) as well as different depths along one or more such buffers, taking into account existing conditions, the essential character and proximity of other uses on adjacent properties along the perimeter buffer.

a. In considering whether to approve a perimeter buffer reduction or alteration, the Planning Board should consider the treatment of the area and adhere to the following standards:

i. In no case shall any portion of the perimeter buffer be less than twenty-five (25) feet in width, except as permitted in section 10.b. below.

ii. Structures in self-storage facilities that do not exceed twenty (20) feet in height and buildings converted to self-storage facilities, per Section D above entitled Building Requirements, may be permitted to use solid fencing (not chain-link) with a reduced vegetated buffer to meet the perimeter buffer requirements.

b. In considering whether to approve a perimeter buffer reduction or alteration, the Planning Board should consider the treatment of the area and adhere to the following principles:

i. Within areas that are densely developed with non-residential uses when the application for a self-storage facility is submitted, a buffer with dense plantings, fencing, and or changes in grade may be a minimum of twenty-five (25) feet.

ii. For self-storage buildings on a parcel(s) located wholly within a Commercial/Industrial zoning district, that do not directly abut any properties outside of a Commercial/Industrial zoning district, the Planning Board will have the authority to approve a reduced buffer to a minimum of

fifteen (15) feet.

iii. A buffer with moderate levels of vegetative screening should be thirty (30) to forty (40) feet in width.

iv. In suburban and rural settings, the minimum width of the densely vegetated buffer should be twenty-five (25) feet. Plantings should be predominantly evergreen shrubs and trees designed to provide year-round screening.

v. For areas adjacent to service, loading, or outdoor storage areas, a minimum buffer width of fifty (50) feet screened by a combination of berms, fencing, and dense plantings (preferably evergreens).

vi. The Planning Board shall have the authority to reduce the depth of those portions of the proposed Self Storage Facility perimeter buffer that directly abut property owned by the Maine Turnpike Authority to a minimum of fifty (50) feet, provided that the intent of this ordinance and applicable standards, specifically including but not limited to buffering, are met and maintained.

G. Outdoor Self-Storage Standards

1. Any outdoor storage shall be located at least one-hundred (100) feet from any property line and shall be subject to additional standards as detailed in this section.

2. All outdoor storage areas that are storing any vehicles and/or equipment that use or contain any type of petroleum-based fluid, or any fluid that potentially contaminates soil if leaked, shall be impervious with pavement or concrete. All stormwater sheet-flow from such areas shall be directed in water-tight drainage piping into oil/water separators in accordance with professionally accepted practices. Stormwater discharge from the separators shall be daylighted to a readily accessible location that allows for the soil adjacent to stormwater daylighting to be tested in the event of leaks from such vehicles and/or equipment.

3. As part of the Planning Board's review, with input from qualified consultants at applicants' expense, the Board shall determine an appropriate stormwater maintenance schedule including periodic testing of soil at the stormwater daylight location and/or where the stormwater from the outdoor storage is absorbed into the ground.

4. For outdoor storage areas on a parcel(s) located wholly within a Commercial/Industrial zoning district, that do not directly abut any properties outside of a Commercial/Industrial zoning district, per 10.b., the Planning Board will have the authority to approve a reduced buffer to a minimum of fifty (50) feet provided it is at least one hundred (100) feet to the property line.

5. If an outdoor storage area is located adjacent to the perimeter of the facility abutting a property line(s), the minimum depth of the perimeter buffer, in accordance with standards specified below in this section, must be seventy-five (75) feet provided it is at least one hundred (100) feet to the property line.

6. As part of the final approval of the project, the Planning Board shall impose a condition of approval that requires the owner and/or operator (as appropriate) of the facility to submit an annual report containing information that summarizes the condition of the stormwater measures, testing results for potential contaminants associated with the stored items, and any corrective measures that have been completed for the previous year to verify that the stormwater from the outdoor storage is not contaminating the soil and/or adversely affecting groundwater in the vicinity of the facility. This report should be due by January 31st of each year. In the event of a spill or test results that show the presence of any contaminant(s), the owner/operator shall report these findings to the Gray Code Enforcement Officer within five business days of receiving the test results.

7. The maximum cumulative footprint of all area(s) utilized for outdoor self-storage shall not exceed twenty-five (25) percent of the developed portion of the self-storage facility consisting of buildings, accessways, etc. Based on the three (3) acre maximum footprint of the developed portion of the facility specified in "E" in this section entitled "General Standards," the maximum size of an outdoor storage area is .75 of an acre/32,670 sq. ft.

H. Lot Frontage Development Standards

Lot frontage is the portion of a lot directly abutting the main road. Development of the lot frontage within the three-hundred (300) foot road or right-of-way (ROW) setback of a self-storage facility parcel, for a separate permitted or conditionally permitted use in the zoning district, is subject to the following conditions:

1. The setback between the structure in the lot frontage development area and the nearest self-storage facility structure, measured building to building, shall be double the applicable rear setback for the zoning district, to allow for conformance in the case of future lot division. Otherwise, applicable setbacks for the zoning district will apply.
2. Development on the lot frontage of a self-storage facility will be subject to performance standards and design standards, as applicable.
3. The Planning Board shall have the authority to reduce the perimeter buffer between the lot frontage development and the self-storage facility, per Section F above, entitled Perimeter Buffer Requirements.
4. Parking areas for the lot frontage development must be located in the rear of the building(s) and shall not be directly visible from a public street.
5. The lot frontage development must be designed to provide for the safe movement of pedestrians and vehicles both internally and in connection with the self-storage development and/or other structures, lots or uses located further from the main road from development within the lot frontage development.

402.6.2 D

D. Only One Principal Building per Lot

No more than one (1) principal structure and its accessory buildings as regulated in this Ordinance may be located on any one lot, except in the case of a multi-building Self-Storage Facility, lot frontage development on a lot with a self-storage facility, as established in Section 402.8.11. Planned Unit Development and Multi-Family Housing, unless all applicable space and dimensional standards are met separately for each principal structure or use on the lot, subject to the following:

1. Where a lot has more than one existing principal structure or use, any new principal structure or use proposed for the lot, or any proposed division of the lot, shall meet all applicable space and dimensional standards for the new lot or principal structure or use; provided, however, before creation of a new principal structure or use on the lot or division of the lot, the property owner shall provide the Code Enforcement Officer with a sketch plan, drawn to scale, in sufficient detail to satisfy the Code Enforcement Officer that it accurately represents the current conditions in the field; and

2. The creation of a new lot or new principal use or structure must satisfy current space or dimensional standards established for the zone in which the lot is located. Where an existing principal structure is legally nonconforming as to any applicable space or dimensional standard, the creation of a new lot or principal use or structure shall not increase the degree of such nonconformity.

3. For lots located in the Business Development 2 Zoning District, the number of uses per principal structure shall be determined by standards established in Section 402.8.8 of this Ordinance.

4. No variances are allowed from the provisions of the preceding paragraphs of this section.

Town of Gray Design Standards for self-storage facilities

Use- specific performance standards to become: 402.8.11

These design standards apply to all self-storage facilities, as defined in the Town of Gray Land Use Ordinance.

PURPOSE:

The Town has set these standards in response to increased interest in development of self-storage facilities, both within the Town and in surrounding towns. This use has historically seen the installation of multiple long, single-story metal buildings, which can be visually monotonous and unattractive, detracting from the community's desired image. Variations in roofline elements and façade treatments are proposed herein to break up the scale of such buildings and add visual interest.

These standards seek to promote an aesthetically pleasing appearance for self-storage facilities, in the interest of retaining Gray's rural character, and protecting property values within the town and specifically within the districts in which the self-storage use is conditionally permitted.

Photographs and captions included herein are meant to provide visualizations of the intended design effect.

APPLICABILITY:

These standards apply to all developments defined as "self-storage" use per the Gray Zoning Ordinance, presented to town staff, Staff Review Committee or Planning Board as of the effective date of these standards, and are meant to supplement the existing standards of the Gray Zoning Ordinance.

DESIGN ELEMENTS:

The architectural design elements outlined below are options that can be combined to meet the stated purpose of improving the appearance of self-storage facilities, particularly by breaking up long, monotonous facades.

Materials: The Town recognizes that many self-storage facilities are metal buildings with metal roofs. For complementary architectural design elements to such buildings, such as the façade treatments listed below, a traditional Northern New England appearance is preferred, such as brick, clapboard and shingles. Contemporary materials with similar appearance, such as veneers, composites, vinyl and dyed concrete can be used to achieve this end on all or part of metal buildings.

Roofs: Pitched roofs are required, with a minimal pitch of at least 5/12. Buildings with projecting rooflines should be designed to create strong patterns of shade and shadow.

Façade treatments: Blank, unadorned or unscreened walls facing public roads, residential neighborhoods, or the front or side of abutting properties should be avoided. In addition to landscape buffering, façade treatments such as those listed below should be added to provide depth and visual interest on extended walls.













Clockwise from top: Brick façade; pitched roof with appropriate colors and stone wainscoting; decorative canopy; faux windows with stone brick façade; overhang canopy; dormer.

- wall plane projections and recesses,
- roof elevation variations,
- Faux windows, with or without shutters
- Decorative lighting
- Exterior artwork (i.e., building murals)
- canopies
- variations in siding materials and orientations, such as patterns or a combination of vertical and horizontal siding
- wainscoting
- awnings
- decorative dormers

Buffering: The reviewing authority shall have the ability to require buffering and screening of self-storage facility building(s) sufficient to minimize the impact on abutting properties and any publicly maintained road from which the development is visible.

These buffers/screens can include, but are not limited to: plantings, hedges, fencing, berms, walling, and combinations thereof.

New plantings must be tolerant species of sufficient height and blend with existing vegetation, which should also be retained as buffering whenever possible. Long term, plantings must be maintained or replaced to continue to serve as buffers. Fencing should be in colors compatible with the building and with the rural image of the town.

Colors: Building colors should be compatible with surrounding properties, to include earth tones and neutral colors, compatible with traditional New England construction. Roof colors shall be those commonly found on residential buildings, including but not limited to brown, black, gray and green, and shall be of a dark hue.

Lighting: All building and site lighting must be directed downward to minimize light pollution. Lights should be aimed and shielded to avoid any light directed onto the road, sidewalks or abutting properties. Lights should be directed only onto the building or the site. Light fixtures should be considered to highlight design elements as well as illuminate entry points and improve site security.

Solar Panels: Fixed solar panels that are flush-mounted to the roof and/or walls, not more than 8 (eight) inches above the roof plane and/or walls of a self-storage facility building are permitted, provided that they do not significantly change the orientation/appearance of the roofline and the necessary permits are obtained. Panels that are installed at a different orientation than the roof plane, or installed/angled to be more than 8 (eight) inches above the roof plane require Planning Board review and approval with the intent of maximizing compliance with design standards.

ADMINISTRATIVE PROCEDURE:

The Planning Board shall administer these standards as part of the site plan review process for a self-storage development, per Article 10 of the Gray Zoning Ordinance. Appeals of the Planning Board's decisions are to be made according to the provisions of site plan review, 402.10.17.

		RRA	LD *	MD	BD-1	BD-2	C	VC *	VCP *	BT-1 *	BT-2 *	WH-1 *	WH-2 *	LMOD
1.	Personal Services				C	C	C	C	C	C				
2.	Planned Unit Development ‡				C	C	C	C	C	C				
3.	Places for Public Assembly, Indoor and Outdoor	C	C		C	C		P	P					
4.	Private Assembly				C	C	C	C	C					
5.	Private Landing Strips for Personal Aircraft ‡	C			C	C								
6.	Public Utilities	C	C	C	C	C	C	C	C	C	C	C	C	
7.	Redemption Center						C			C			P	
8.	Registered Caregiver*				C	C	C	C						
9.	Registered Caregiver Cultivation Area*				C	C	C	C						
10.	Repair Service				P	P	C	P	P		C		C	
11.	Research Facility				C	C		C	C					
12.	Residential Open Space Subdivisions	P	P	P										
13.	Restaurant				P	P	C	P	P	C	C			
14.	Retail Trade				P	P	C	P	P	C	C		C	
15.	School	P	P	P		C	C	C	C	C	C		C	
16.	Self-Storage Facility				~~C~~	~~C~~	~~C~~			~~C~~				C
17.	Single-Family Dwelling	P	P	P	P	P	P	P	P	P	P	P	P	
18.	Similar Uses	C	C	C	C	C	C	C	C	C	C	C	C	
19.	Tavern					C	C	C	C					
20.	Trucking Terminal				C	C								
21.	Two-Family Dwelling	P	P	P	P	P	P	P	P	P	P		P	
22.	Warehousing				P	P								P/C
23.	Wholesale Trade				C	C		P	P					
24.														

use of an arcade system, trellis, colonnade or other open structures.

D. Provide Useable Open Spaces – Wherever practical, open space areas shall be grouped into useable, prominent landscaped areas so as to provide useable open space within a complex of buildings or project; however, this provision does not require that every building or project or all areas surrounding buildings to provide useable open space.

E. Provide Outdoor Seating Areas – Buildings shall be placed in a manner that allows space for outdoor seating areas. Spaces between buildings that offer clear, useable shapes may be used for this purpose; however, this does not require that all spaces between buildings be designed for use as outdoor seating areas.

COLOR STANDARDS

A. Use Compatible Colors – Colors used on buildings shall be compatible with colors of the surrounding area.

TRASH LOADING/STORAGE/PARKING AREAS

A. Enclose Dumpsters in Attractive & Durable Enclosures – Trash and garbage containers shall be stored in an enclosure that is architecturally compatible with the project or building and which includes concrete pads or appropriately designed asphalt surfaces. Trash enclosure gates shall be constructed of durable materials that obscure view by a minimum of eighty (80) percent.

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~~E.~~B. Locate Such Service Areas Away from Abutting Residences – Non-residential buildings adjacent to residential properties shall be designed or positioned so that loading and delivery activities occur on the side of a building opposite the side facing residential property, and shall not be located within the required setback.

~~F.~~C. Provide Loading Areas for Restaurants – Every free-standing restaurant site shall include a loading area or arrangement for other accommodations.

~~G.~~D. Loading Docks not to be Visible from the Street – Loading docks shall not be directly visible from a public street. Complete screening matching the building design or a landscape buffer achieving eighty (80) percent screening within three (3) years shall be installed where necessary to meet this requirement.

~~H.~~E. No Standing & Idling Trucks – Trucks are prohibited from parking and idling in maneuvering or circulation areas that are adjacent to residential properties, except for approved loading or dock areas.

~~I.~~F. Carefully Locate & Screen Outdoor Storage Areas – Outdoor storage shall be located within approved storage areas that are permanently screened from view. Outdoor storage shall not be allowed in required parking or loading areas.

~~J.~~G. Parking areas to be located in rear – Parking areas are to be located in the rear of the building(s) and shall not be directly visible from a public street.

PART 4 – RESIDENTIAL DESIGN STANDARDS AND ADMINISTRATIVE PROCEDURES

I. PURPOSE

The purpose of these Design Standards for the construction of single-family residential buildings, two-family residential buildings, three-family residential buildings, accessory dwelling units, and all detached accessory structures in the Village Center (VC) and Village Center Proper (VCP) Districts is to promote the construction of such buildings in a manner that is calculated to allow for adaptive re-use of the site for either commercial or residential purposes in the future. The objective is to grant the Town of Gray increased flexibility in meeting its current goals under the Comprehensive Plan, including promoting growth in the VC and VCP districts.

II. APPLICABILITY

These Design Standards apply to all single-family residential buildings, two-family residential buildings, three-family residential buildings, accessory dwelling units, and all detached accessory structures newly constructed or reconstructed in the VC or VCP Districts, as well as those that have been substantially altered, repaired, or moved.

For the purposes of applicability of these standards, "substantially altered, repaired, or moved" shall mean any one or more of the following:

1. requires a building permit for construction that affects greater than fifty percent (50%) of the floor area of the existing structure

2. requires a building permit for exterior renovations which involve structural alterations to the building.

III. AESTHETIC STANDARDS

Newly constructed or reconstructed single-family residential buildings, two-family residential buildings, three-family residential buildings, accessory dwelling units, and all detached accessory structures in the VC or VCP Districts, as well as existing buildings (used for that purpose) and their appurtenances, which have been substantially altered, repaired or moved, shall be visually compatible with the buildings and terrain to which they are visually related and specifically with nearby and/or adjacent buildings in terms of the following factors:

A. Overall Style: The building's architectural style shall be consistent throughout, with all sides matching or complementing the style of those with the greatest visibility from the public street(s).

1. To prevent long, visually monotonous building façades, design features shall be added to the building, such as but not limited to, wall plane projections, recesses, widows, roof elevation variations, and variations in siding materials and orientations.



2. Accessory or auxiliary structures, including garages

and sheds, shall be architecturally consistent with the primary structures in the use of color, material, and detailing.

B. Relationship of Façade Materials: The façades of a building, particularly the front façade, should be visually compatible with surrounding buildings.



1. Use of traditional wood clapboard or cedar shake siding is the basic standard. Synthetic, composite, or other siding materials are acceptable if they are substantially identical in appearance to natural materials and of equal or greater durability.

2. Brick or stone masonry is also acceptable.



a. Brick material shall be of New England character, normally red to reddish brown in color, and shall be laid with three courses in eight inches. Normal brick size shall be 2 3/8 x 3 5/8 x 7 5/8.

b. Use of economy shape, square, or elongated brick is not permitted.

c. Multi-color brick products or patterns composed of different colors of bricks are prohibited, and any pattern in the brick masonry shall be muted with all patterns composed of brick of the same color. Alternatively, bricks may be painted, provided they are painted a single, solid color.

3. Concrete block, split face block, multicolored brick, asphalt shingles, T-111, plywood, diagonal siding, industrial metal siding, standing seam metal siding, synthetic brick, and synthetic stone are prohibited; however, use of stucco is permissible.

4. Concrete block chimneys and exposed metal chimney flues on the side of the house facing the street are prohibited. Exposed metal chimney flues on the sides of houses shall be enclosed and sided with the same or similar siding as the house.



5. Full height walls surrounding porches are not permitted. Screens in the warmer months and storm windows in the cold months are permitted, this does not include installation of combination storm and screen windows.

C. Roof Shapes and Materials: The shape and proportion of the roof should be visually compatible with the architectural style of the building and with those of

neighboring buildings. Flat roofs are discouraged.

1. Roof forms such as gable, hipped, or slight variations are acceptable.



2. Buildings shall have a roof pitch in the ranges of 6:12 to 12:12. Porch roofs are permitted to have a pitch of 4:12 provided that the porch does not exceed 20% of the building's cumulative footprint.

3. Preferred materials are asphalt shingle, fire-treated wood shingles, natural slate, rubber, composite material made to resemble slate, and/or metal.



4. Buildings that are more than forty feet (40') in length, face a public street, and have a symmetrical gabled pitched roof are encouraged to break up the roof with multiple dormers proportioned and coordinated with the overall façade design.

5. Roof colors shall be those commonly found on residential buildings within the VC and VCP Districts, including but not limited to brown, black, grey, and green, and shall be of a dark hue.

6. Roof dormers with pitched or shed roof forms are permitted, and skylights within the roof plane are acceptable. Shed roofs that are integrated with the building form are also acceptable.

7. Exposed roof vents such as turbines or power roof ventilators are discouraged.

D. Proportionality and Placement: The building's overall size; mass in relationship to the open space around it; and door, window, porch, and balcony sizes shall be visually compatible with its site and with its neighborhood.

1. The height of the building shall be visually compatible with the heights of buildings in the neighborhood, with particular attention paid to the height of principal structures on adjacent lots, so as not to dramatically change the street's appearance or to unduly shade neighbors and/or the street.

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Compliant: **Noncompliant:**




2. The rhythm of open spaces around buildings to the buildings themselves should be considered when determining visual compatibility, whether it is between buildings or between buildings and the street (setbacks).

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3. The size and spacing of the building's windows and doors shall be proportional and visually compatible with those of its neighbors.

Compliant: **Noncompliant:**




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E. Access Features: The features of a building that allow for access to the interior shall meet certain minimal design standards that ensure both their functionality and visual compatibility with others in the neighborhood.

1. The incorporation of one, and not more than one, recognizable front door facing the street is required.

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2. Buildings shall not have more than one exterior stairway leading to a second or higher story, and the design of such exterior stairway shall be visually compatible with the design of the building as a whole and with any exterior stairways on neighboring buildings.

F. Site Features: The size, placement, and materials of walls, fences, driveways, and landscaping features should be visually compatible with the building, the property's terrain, neighboring buildings, and the terrain of abutting properties, as well as provide adequate privacy between lots.



1. Fences, if installed, shall be post-and-rail type with wood, wood composite, stone, or masonry posts with wood top and bottom rails. Infill between rails shall be vertical pickets or other patterns consistent with older residences within the district. Fences shall not exceed forty-two (42) inches in height.

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2. Preservation of existing mature trees and planting or preservation of masses of shrubs in the setback is encouraged. Landscaping should include planting of new trees and shrubs if none presently exist.

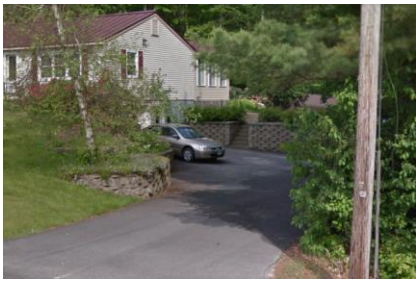
a. An effort shall be made to use indigenous species that are insect and disease resistant. Invasive species of plants are prohibited.

b. Any trees that are planted shall be a minimum of five (5') feet from the edge of the right-of-way (ROW). The mature form and height of plant materials shall be considered so they will not create unsafe conditions, such as protrusion into power lines, or blockage of pedestrians, bicyclists, or motorists' sight lines on the road.

3. The front, side, and rear yards abutting residential properties shall maintain the district boundary in its natural state to provide a buffer of at least the minimum setback distance or at least 10 feet. When natural features (i.e., slopes, gullies, trees, shrubs, rocks) do not exist or are insufficient to provide a buffer, the developer is encouraged to landscape, or where not feasible, provide fencing or screening. The buffer shall not be expected to completely hide the building from abutting properties.



4. Site walls (retaining walls), if installed, should be a natural stone, pre-cast concrete made to resemble stone, or brick masonry. The use of other modular concrete material is not permitted for the wall face. Site walls shall not exceed forty-two (42") inches in height unless functionally necessary due to the grades existing on the property, shall be located no closer than two (2') feet from the sidewalk, and shall be constructed to allow for proper drainage.



5. All new construction and development shall be designed to minimize storm water runoff from the site in excess of the natural predevelopment conditions. Where possible, existing natural runoff control features, such as berms, swales, terraces, and wooded areas shall be retained or added in order to reduce runoff and encourage infiltration of storm waters. All storm water must be treated underground.



6. All parking for new construction and development shall be located behind the building, not visible from the street.

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IV. SITE LAYOUT STANDARDS

A. The location of structures and site improvements on the parcel shall be designed and built to accommodate either residential or commercial uses. The applicant/developer shall provide a conceptual scaled plan of the parcel depicting all site components necessary to practically allow the parcel to be utilized for commercial purposes including:

1. Vehicular access (ingress and egress);

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2. On-site vehicular circulation;
3. Pedestrian access and internal circulation;
4. Parking layout and design;
5. ADA parking and access;

MEMO

September 26, 2023

TO: Town Council, Interim Town Manager Josh Tiffany
FROM: Community Development
RE: LD2003 compliance proposed ordinance amendments

Introduction:

The Town of Gray is working toward compliance with LD2003 "An Act to Implement the Recommendations of the Commission to Increase Housing Opportunities in Maine by Studying Zoning and Land Use Restrictions," which became Public Law 672 in April 2022. The law originally was to become effective as of July 1, 2023. The effective date was changed to January 1, 2024 in the last session of the Legislature, along with some other amendments to the original legislation.

The Town Council passed Zoning Ordinance amendments related to Accessory Dwelling Units on May 16, 2023 and those became effective June 15, 2023.

Staff are actively working to implement the changes related specifically to the sections of the law that address affordable housing and housing density, ***30-A MRSA Sections 4364 and 4364-A***.

The council discussed these changes at a workshop in June 2023 and provided input on the elements of the law that allow for municipal discretion. That input is included in the changes presented to you herein. Notably, nearly all of the amendments are statutorily required to implement the State law.

At this time, we propose making changes land use regulations in the Town of Gray Zoning Ordinance Chapter 402 sections as per below:

- Definitions 402.2.2
- Lots 402.6.2
- Back lot access easements 402.7.5
- Village Center District Standards 402.8.3
- Village Design Standards (as referenced in 402.8.3)
- 402.10.14 Standards for Multi-Family Housing
- Table of permitted uses, 402.5.3
- 402.10.11 Table 3- Parking Minimums
- New Section: 402.7.22 Two or More Dwelling Units on One Lot

Please note that additional amendments will be necessary for full compliance, but require additional discussion and will be submitted as a second phase of implementation **at a later date**, to include:

- Bringing the town's Subdivision Ordinance, Chapter 401, into compliance – specifically the Residential Open Space subdivisions section, which was written explicitly for single-family home development and does not allow accessory dwelling units. Staff will present these revisions to the

town council at a later date, to incorporate input from the Open Space Committee on other changes to this part of the ordinance.

- Updating the multi-family development requirements, both inside and outside of the growth district, to include specifics related to structures, setbacks and buffers.
- Potential addition of a growth overlay district to the Zoning Districts as a first step to implementing new zoning districts in line with the future land use in the Comprehensive Plan.

Proposed Amendments at this time:

Definitions 402.2.2

Affordable Housing:

a. For rental housing, a development in which a household whose income that does not exceed 80% of median income for the area as defined by the United States Department of Housing and Urban Development under the United States Housing Act of 1937, Public Law 75-412, 50 Stat. 888, Section 8, as amended, can afford 51% or more of the units in the development without spending more than 30% of the household's monthly income on housing costs.

b. For owned housing, a development in which a household whose income does not exceed 120% of the median income for the area as defined by the United States Department of Housing and Urban Development under the United States Housing Act of 1937, Public Law 75-412, 50 Stat. 888, Section 8, as amended, can afford 51% or more of the units in the development without spending more than 30% of the household's monthly income on housing costs.

Residential Open Space Subdivision: A form of ~~single-family~~ residential development that provides flexibility in design and promotes creating open space by reducing lot area and bulk requirements for individually owned lots, provided that the allowed number of lots does not exceed the required zoning density standards for the respective district.

Multi-Family Dwelling: a building containing three or more dwelling units, such buildings being designed for residential use and occupancy by three (3) or more families living independently of one another, with the number of families not exceeding the number of dwelling units.

Multifamily Development: A lot which contains one or more multifamily dwellings, two or more ~~duplexes~~two-family dwellings, three or more single family dwellings, or any combination of buildings ~~-~~containing more than four (4) dwelling units on a single lot. An affordable housing development is considered to be a type of multifamily development if the subject parcel contains

the requisite number of dwelling units per this definition. ~~containing three or more dwelling units~~.

Short-term rental unit: Living quarters offered for rental through a transient rental platform as defined by 36 M.R.S.A. Section 1752 (20-C), at which one or more overnight accommodations are available to rent for a tenancy of less than thirty (30) consecutive calendar days, excluding campgrounds, motels, hotels, and bed and breakfasts.

Designated growth area: An area that is delineated as suitable for orderly residential, commercial, or industrial development, or any combination of those types of development, and into which most development projected over ten (10) years is directed. The Village Center and Village Center Proper zoning districts are the Designated growth areas.

Centrally managed water system. A water system that provides water for human consumption through pipes or other constructed conveyances to at least 15 service connections or serves an average of at least 25 people for at least 60 days a year as regulated by 10-144 C.M.R. Ch. 231, Rules Relating to Drinking Water. This water system may be privately owned.

Comparable sewer system. "Comparable sewer system" means any subsurface wastewater disposal system that discharges more than 2,000 gallons of wastewater per day as regulated by 10-144 C.M.R. Ch. 241, Subsurface Wastewater Disposal Rules.

	TABLE 402.5.3 TABLE OF PERMITTED USES AND CONDITIONAL PERMITTED USES														
		RRA	LD *	MD	BD-1	BD-2	C	VC *	VCP *	BT-1 *	BT-2 *	WH-1 *	WH-2 *	LMOD	CSES OD
1.	Accessory Dwelling Unit ‡#	P	P	P	P	P	P	P	P	P	P	P	P		
2.	Accessory Uses and Structures	P	P	P	P	P	P	P	P	P	P	P	P		
3.	Adult Business*						C								
4.	Agritourism Center*	C													
5.	Agritourism Facility*	C													
6.	Animal Husbandry	P	P		C	C	C				C		C		
7.	Auto Body Shop				C	C	C								
8.	Auto Repair Garage						C								
9.	Auto Service Station				C	C									
10.	Bed and Breakfast ‡	C	C	C	P	P	P	P	P	P	C		C		
11.	Building Trades Occupations – 1	P	P	P	P	P	P	P	P	P	P	C	P		
12.	Campground ‡	C	C												
13.	Cemetery	P					C								
14.	Church	P	P	P	P	P		C	C		C		C		
15.	Commercial Recreation - Indoor or Outdoor	C	C		C	C	C	C	C	C	C		C		
16.	Community Living Arrangement	P	P	P	P	P	P	P	P	P	P	P	P		
17.	Construction Services				P	P					C		C		
18.	Day Care Facility for Five (5) or fewer clients.	P	P	P	P	P	P	P	P	P	P		P		
19.	Day Care Facility for Six (6) or more	C	C	C	C	C	C			C	C		C		
20.	Drive Through and Drive in Facility					[1]C	C			C	C		C		
21.	Expansion of Nonconforming Uses	C	C	C	C	C	C	C	C	C	C	C	C		

		RRA	LD *	MD	BD-1	BD-2	C	VC *	VCP *	BT-1 *	BT-2 *	WH-1 *	WH-2 *	LMOD	CSES OD
22.	Farm Stand ‡	P	P	P	P	P	P	P	P	P	P		P		
23.	Farmers' Market ++	P	P	P	P	P	P	P	P	P	P		P		
24.	Flea Market, Open Air Market ‡	C	C	C	C		C	P	P						
25.	Garage Sale	P	P	P	P	P	P	P	P	P	P	P	P		
26.	General Agriculture	P		P	P	P	P				C		C		
27.	Headquarters for a Contracting Business	C	C	C	P	P					C		C		
28.	Heliport	C	C		C	C									
29.	Home Occupation ‡	P	P	P	P	P	P	P	P	P	P	C	P		
30.	Hotel and Motel				C	C	C			C					
31.	In-Home Offices‡	P	P	P	P	P	P	P	P	P	P	P	P		
32.	Kennels	C	C				C						C		
33.	Light Manufacturing				P	P								P/C	
34.	Manufacturing and Processing				C	C									
35.	Mechanical Repair Garages	C			P	P	C								
36.	Medium and Large-scale Solar Energy Systems														C
37.	Medical Facility	C	C	C		C	C	C	C	C					
38.	Mineral Excavation	P	P	P	P	P	P								
39.	Mineral Exploration	C			P	P		P	P		P	P	P		
40.	Mobile Vendor	P	P	P	P	P	P	P	P	P					
41.	Motel (< 11 rooms)	C	C			C									
42.	Multi-family Development#	C	C	C	C	C	C	C	C	C	C	C	C		
43.	Multi-family Dwelling	C	C	C	C	C	C	C	C	C	C	C	C		
44.	Municipal Uses	C	C		C	C	C	C	C	C	C		C		
45.	Nursing and Convalescent Home	C	C	C	C	C	C			C					
46.	Office			C	P	P	P	P	P	C	C		C		

		RRA	LD *	MD	BD-1	BD-2	C	VC *	VCP *	BT-1 *	BT-2 *	WH-1 *	WH-2 *	LMOD
47.	Personal Services				C	C	C	C	C	C				
48.	Planned Unit Development ‡				C	C	C	C	C	C				
49.	Places for Public Assembly, Indoor and Outdoor	C	C		C	C		P	P					
50.	Private Assembly				C	C	C	C	C					
51.	Private Landing Strips for Personal Aircraft ‡	C			C	C								
52.	Public Utilities	C	C	C	C	C	C	C	C	C	C	C	C	
53.	Redemption Center						C			C			P	
54.	Registered Caregiver*				C	C	C	C						
55.	Registered Caregiver Cultivation Area*				C	C	C	C						
56.	Repair Service				P	P	C	P	P		C		C	
57.	Research Facility				C	C		C	C					
58.	Residential Open Space Subdivisions	P	P	P										
59.	Restaurant				P	P	C	P	P	C	C			
60.	Retail Trade				P	P	C	P	P	C	C		C	
61.	School	P	P	P		C	C	C	C	C	C		C	
62.	Self-Storage Facility				C	C	C			C				
63.	Single-Family Dwelling#	P	P	P	P	P	P	P	P	P	P	P	P	
64.	Similar Uses	C	C	C	C	C	C	C	C	C	C	C	C	
65.	Tavern					C	C	C	C					
66.	Trucking Terminal				C	C								
67.	Two-Family Dwelling#	P	P	P	P	P	P	P	P	P	P	P	P	
68.	Warehousing				P	P								P/C
69.	Wholesale Trade				C	C		P	P					

++ Subject to performance standards in Article 7 #Subject to performance standards in 402.10.14, 402.7.22, 402.7.9 as applicable

402.6.2 Lots

A. Lots with Multiple Street Frontages

Lots which abut on more than one street shall provide the required front setbacks along every street.

B. Developable Areas

No structure or other impervious surface may be constructed on land with sustained slopes of twenty-five (25%) percent or greater, nor in any wetland. Subsurface wastewater disposal systems may not be located where soils are unsuitable for septic systems according to the Maine State Plumbing code, as amended.

C. Building Extensions to Meet Setbacks

All structures, whether attached to the principal structure or not, and whether open or enclosed, including porches, carports, balconies, or platforms above normal grade level, shall not project into any required minimum front, side or rear setback.

D. Only One Principal Building per Lot

1. No more than one (1) principal structure and its accessory buildings, including an Accessory Dwelling Unit, as regulated in this Ordinance may be located on any one lot, unless all applicable space and dimensional standards are met separately for each principal structure or use on the lot, except ~~in the case of~~for the following uses, which shall be exempt from this standard provided that all applicable standards are met:

- ~~-~~A multi-building Self-Storage Facility~~,~~
- A Planned Unit Development
- A Multi-Family Development,

~~unless all applicable space and dimensional standards are met separately for each principal structure or use on the lot~~,

2. In no event shall one lot contain any non-residential use and any residential use(s).

3. Accessory residential uses shall be permitted on a lot used primarily for residential use provided that applicable standards are met and maintained.

4. All developments not listed in the exceptions above in this section shall be subject to the following:

a.~~.~~ Where a lot has more than one existing principal structure or use, any new principal structure or use proposed for the lot, or any proposed division of the lot, shall meet all applicable space and dimensional standards for the new lot or principal structure or use; provided, however, before creation of a new principal structure or use on the lot or division of the lot, the property owner shall provide the Code Enforcement Officer with a

sketch plan, drawn to scale, in sufficient detail to satisfy the Code Enforcement Officer that it accurately represents the current conditions in the field; and

b. The creation of a new lot or new principal use or structure must satisfy current space or dimensional standards established for the zone in which the lot is located. Where an existing principal structure is legally nonconforming as to any applicable space or dimensional standard, the creation of a new lot or principal use or structure shall not increase the degree of such nonconformity.

c. For lots located in the Business Development Zoning District, the number of uses per principal structure shall be determined by standards established in Section 402.8.8 of this Ordinance.

d. No variances are allowed from the provisions of the preceding paragraphs of this section.

402.7.5 Back Lot Access Easements

Back lots ~~used for single family purposes~~ shall be permitted, provided they meet the following standards:

A. Access Requirements

1. A fifty (50 ft.) foot wide access shall be provided for back lots.

2. Said access shall be owned either in fee or by permanent easement and maintained by the back lot users.

3. Record of said access way shall be recorded as part of the deed of each back lot and shall be filed with the County Register of Deeds.

4. The access way entrance to a street shall conform to standards of the Subdivision Ordinance and shall be approved by the Code Enforcement Officer.

5. The issuance of a building permit for one or more dwelling unit(s) ~~a single family dwelling~~ on a back lot shall in no way be construed to imply the acceptance of any access way for the purpose of maintenance, improvements or snow removal by the Town of Gray.

6. Creation of a subdivision requires compliance with the provisions of the Gray Subdivision Ordinance.

B. Lot Frontage Requirements
Frontage equal to the street frontage required for the zoning district shall be required along the access way.

C. Lot Size Requirements

1. Any back lot shall be equal to or greater than the minimum lot size required for the zoning district. Computation of minimum lot size area shall not include any portion of the area devoted to an access way for the lot across which the easement crosses and for the lot served by the easement.

2. The side lot line nearest and generally parallel to the road to which the back lot access way leads shall be equal to the street frontage required for the zoning district.

402.7.6 Residential Open Space Subdivisions and Multi-family ~~housing~~ development

A. Purposes of Residential Open Space Subdivision:

The purpose of Residential Open Space Subdivision standards is to encourage greater flexibility and more creative design for the development of residential ~~single-family~~ projects. It is intended to encourage a pattern of residential development which will result in the following attributes:

1. Preservation of Gray's rural character by retention of open space and its natural resource values as determined by the Planning Board with input from appropriate organizations, other Town staff, and State departments.

2. To the greatest practical extent, preservation of existing landscape features and the utilization of such features in a harmonious fashion.

3. Protection of environmentally sensitive areas.

4. Economical and efficient building arrangement, traffic circulation, and utility construction.

5. Outdoor recreational facilities that may be better utilized and located than would otherwise be provided under more conventional land development.

B. Residential Open Space Subdivisions standards are contained in the Town of Gray Subdivision Ordinance, Chapter 401, in Section 401.13.13.

C. Section 401.13.13.I establishes the purposes of locating individually owned lots in relation to the configuration of the open space. Parties must pay particular attention to this section to ensure that the overall layout of land development is consistent with these standards.

D. Space, bulk, and dimensional standards for Residential Open Space Subdivisions shall be subject to the following:

1. The Planning Board shall have the authority to reduce setbacks to those stated in Table 401.13.13.B.1 of the Town of Gray Subdivision Ordinance.

2. Neither the Planning Board nor the Zoning Board of Appeals shall have the authority to further reduce the setbacks for the entirety of a project.

3. The Planning Board!'s ability to change setbacks within the project as detailed in Table 401.13.13.B.1 of the Subdivision Ordinance shall not be construed as granting variances to relieve hardship, and the action of the Zoning Board of Appeals shall not be required.

4. All other space standards except those specifically allowed in Table 401.13.13.B.1 of the Subdivision Ordinance for the respective district shall apply to the Residential Open Space Subdivision. Chapter 402 Gray Zoning Ordinance

E. Provisions for Multi-Family Development: Provisions for multi-family development are contained in Section 402.10.14 of Site Plan Review. For the purposes of this Ordinance, multi-family development is not considered to be a Residential Open Space subdivision.

402.7.9 ACCESSORY DWELLING UNITS

A. General Standards:

1. For any lot located fully or partially in a Shoreland Zoning district, Accessory Dwelling Units must independently comply with all Shoreland Zoning requirements.

2. Except as established above in this section for lots partially or fully in the Shoreland Zoning District, Accessory Dwelling Units shall be permitted in all zoning districts where single-family housing is permitted, on the same lot as a single-family dwelling, constructed only:

- Within an existing single-family dwelling unit on the lot;
- Attached to, or sharing a wall with, a single-family dwelling unit;
- As a new structure on a lot for the primary purpose of creating an Accessory Dwelling Unit;
- Within an existing detached accessory structure on the same lot as a single-family dwelling

1. *Accessory dwelling units are specifically prohibited in, on, or within any of the following:*

a. any two-family or multi-family dwelling;

b. any lot that contains one (1) or more principal commercial use(s) either on the parcel or in any structure located on such lot; or

c. any lot that does not have a single-family dwelling as its principal use

4. Only one (1) Accessory Dwelling Unit is allowed per lot, and only on a lot on which the CEO has determined the primary use to be a single-family dwelling.

5. The minimum square footage of finished living area for Accessory Dwelling Units is one-hundred-and-ninety (190) square feet.

6. The maximum footprint for any Accessory Dwelling Unit is seven-hundred-fifty (750) square feet and shall not exceed the footprint of the primary dwelling unit. If the footprint of the primary dwelling is 750 sf or less, the maximum footprint of the Accessory Dwelling Unit shall not exceed 90% of the primary dwelling's footprint. The Zoning Board of Appeals shall not have the authority to increase this footprint by variance or otherwise.

7. Although an existing single-family dwelling may be expanded or utilized for the purposes of creating an Accessory Dwelling Unit, no portion of an Accessory Dwelling Unit shall be located within minimum lot line setbacks, including non-conforming structures of record.

8. Accessory Dwelling Units must comply with applicable building and fire safety codes.

9. Accessory dwelling units must have shared common utilities, such as water and wastewater disposal, with the single-family dwelling, except as required by applicable codes.

10. One Accessory Dwelling Units must be allowed on any lot where a single-family dwelling is the principal structure. In the event that one (1) Accessory Dwelling Unit has been duly permitted and constructed on a lot utilizing this exemption from zoning density requirements for minimum area per dwelling unit, as established in Table 402.5.4.A, any additional dwelling unit, including any Accessory Dwelling Units, must comply with all dimensional standards established in Tables 402.5.4 A and B. ~~regardless of whether the lot conforms to current dimensional requirements as established in this ordinance. Any new structure constructed on the lot to be an Accessory Dwelling Unit must meet the current applicable dimensional requirements for a structure.~~

11. An Accessory Dwelling Unit shall be permitted only as one (1) floor of living space, such as a one-story structure or a single floor above a garage.

12. Accessory Dwelling Units are intended to be accessed via the existing driveway and curb cut for the principal single-family dwelling, and must meet the standards established in the Street Ordinance, Chapter 400.

13. An accessory dwelling unit shall not be considered a separate dwelling unit when calculating lot area per dwelling unit for this Ordinance.

14. In accordance with Section 6 30-A M.R.S.A. §4364-B, an Accessory Dwelling Unit is not required to provide any additional parking requirements beyond the minimum number of off-street parking spaces established in Table 3 of Article 10 for the single-family dwelling unit located on the same lot as the Accessory Dwelling Unit.

B. Ownership Standards:

1. Ownership of the existing single-family dwelling and the Accessory Dwelling Unit must be held by the same person(s).

2. Either the existing single-family dwelling or the Accessory Dwelling Unit must be owner-occupied. "Owner-occupied" means that either the existing single-family dwelling or the Accessory Dwelling Unit must be occupied by a person(s) who has a legal ownership and bears risk of decline in value of the property and who receives any

payment from the lease or rental of the property.

C. Aesthetics:

1. Accessory Dwelling Units shall retain and respect the existing streetscape and character of the neighborhood, and preserve the single-family dwelling appearance, architectural style, and character of the dwelling.

2. Any exterior modifications to the single-family dwelling associated with the construction or installation of an Accessory Dwelling Unit must be consistent with architectural style and character of the single-family dwelling in terms of exterior materials, roof pitch/form, and window type/spacing.
3. Any exterior alteration of the single-family dwelling associated with the construction or installation of an Accessory Dwelling Unit must preserve the formal, front entrance of the building in order to maintain the single-family dwelling appearance and architectural style of the building, as determined by the Code Enforcement Officer with input from the Town Planner as appropriate.

4. Exterior stairs more than five (5) feet above final finished grade shall be enclosed and are restricted to the rear and sides of the accessory dwelling unit or the single-family dwelling in which it is located or to which it is attached, wherever practicable provided that that they are integrated into and consistent with the architecture of the building.

5. In the event that the Code Enforcement Officer and the applicant for the Accessory Dwelling Unit cannot agree on the aesthetic standards contained in this Section 402.7.9.C, the applicant may appeal to the Planning Board within thirty (30) days of the CEO's written decision.

6. All Accessory Dwelling Units in the Village Center and Village Center Proper zoning districts are subject to the Village Design Standards as referenced in the Village Center District Standards section of this Zoning Ordinance.

B. Wastewater Disposal:

1. An Accessory Dwelling Unit may be served by one of the following subsurface wastewater disposal (SSWD) systems that maintain standards established in the Maine Subsurface Wastewater Disposal Rule:
a) an existing SSWD system,
b) an upgraded SSWD system, or
c) a new SSWD system, designed by a licensed site evaluator, all as otherwise allowed by law.

2. In all cases, the SSWD system serving the Accessory Dwelling Unit must meet First Time System criteria as established in the Maine SSWD Rule. Utilizing Replacement System or Expanded System criteria per 10-144 CMR 241 is prohibited.

3. If an existing SSWD system is proposed to serve the Accessory Dwelling Unit without being upgraded, as may be allowed in the Maine SSWD Rule, the LPI shall require the applicant to submit sufficient documentation from a Maine licensed site evaluator showing the SSWD system meets First Time System criteria.

4. If a new SSWD system is proposed to serve the Accessory Dwelling Unit, the local plumbing inspector (LPI) shall have the authority to require the design be recorded at the CCRD if it does not need to be installed, as may be allowed in the Maine SSWD Rule.

5. The owner of the Accessory Dwelling Unit must provide written verification that the unit is connected to adequate wastewater services prior to receiving a Certificate of Occupancy. Written verification must include the following:

a. If an Accessory Dwelling Unit is connected to a septic system, proof of adequate sewage disposal for subsurface wastewater. The septic system must be verified as adequate by a local plumbing inspector, based on sufficient information provided to the LPI by the applicant or their consultant, pursuant to 30-A M.R.S. § 4221. Plans for a subsurface wastewater disposal system must be prepared by a licensed site evaluator in accordance with 10-144 C.M.R. Ch. 241, Subsurface Wastewater Disposal Rule; 19-100 Chapter 5 page 10.

E. Potable Water Supply Standards

1. The owner of the Accessory Dwelling Unit must provide written verification that the unit is connected to adequate potable water services prior to receiving a Certificate of Occupancy. Written verification must include the following:

a. If an Accessory Dwelling Unit is connected to a public, special district or other centrally managed water system, proof of adequate service to support any additional flow created by the unit, proof of payment for the connection and the volume and supply of water required for the unit; and

b. If an Accessory Dwelling Unit is connected to a well, proof of access to potable water, including the standards outlined in 01-672 C.M.R. Ch. 10, section 10.25(J), Land Use Districts and Standards. Any test of an existing well or proposed well must indicate that the water supply is potable and acceptable for domestic use.

A. Discontinuance:
If any of the applicable ordinance standards are no longer being met, use of the Accessory Dwelling Unit must be discontinued, and the single-family dwelling must revert to single-family

use by removing the eating and cooking facilities/equipment support system(s) from the Accessory Dwelling Unit as established in the definition of "Dwelling Unit" contained in the version of the International Residential Building Code most recently in effect.

402.8.3 Village Center District Standards

A. Replacement of Existing Buildings and Structures

Existing buildings or other structures in the Village Center and Village Center Proper Districts are allowed to be rebuilt or replaced with new construction subject to the minimum area per dwelling unit or similar standards in effect at the time of the permit application submittal, provided that the existing "footprint" is not exceeded unless in conformance with the standards in Section 402.5.4 for the Village Center and Village Center Proper Districts, as well as the applicable portions of the Gray Village Center and Village Center Proper Design Standards.

1. Replacement of Destroyed or Damaged Building: The owner of a building or structure in the Village Center or Village Center Proper Districts that is destroyed or damaged by any means beyond the control of the owner shall have the option of rebuilding or restoring the building or structure Chapter 402 Gray Zoning Ordinance subject to the minimum area per dwelling unit or similar standards in effect at the time of the permit application submittal, either on the same "footprint" or in accordance with the space standards of Section 402.5.4 within a period of one (1) year from the date of destruction or damage. The Code Enforcement Officer may issue a permit for one additional one (1) year period if reasonable progress is being made and nuisance conditions do not exist.

2. Voluntary Replacement: A building or structure in the Village Center or Village Center Proper Districts may be voluntarily replaced provided that the existing "footprint" is not exceeded, subject to the minimum area per dwelling unit or similar standards in effect at the time of the permit application submittal. The construction of the replacement building or structure must be completed in accordance with a building permit drawn within one (1) year of the demolition of the prior building or structure and construction must be completed within a period of two (2) years from the date of the building permit. The building permit shall expire if the work or change involved is not commenced within one (1) year of the date on which the permit is issued, and if the work or change is not substantially completed within the two (2) years.

The Code Enforcement Officer may ~~i~~"ssue-'a permit for one additional one (1) year period if reasonable progress is being made and if nuisance conditions do not exist. Before a building or structure is voluntarily replaced to the existing "footprint" under this paragraph, the owner must provide the Code Enforcement Officer with a Class D survey, conducted before demolition of the building or structure showing its exact location on the lot unless the replacement building or structure is proposed to be in accordance with the space standards of Section 402.5.4.

B. Special Performance Standards: The following standards apply in the Village Center and Village Center Proper Districts:

1. All developments requiring site plan review, subdivision review, conditional use review, or which otherwise involve multi-family development by the Planning Board shall conform to Parts 1-4 of the Town's Village Center and Village Center Proper District Design Standards, Parts 1-3 adopted December 18, 2007 and amended September 21, 2021; and Part 4 adopted September 21, 2021. The Planning Board shall be the reviewing authority for Gray Village Center and Village Center Proper Design Standards for all such development proposals that require Planning Board approval.

2. All of the following buildings, ~~or~~ structures or uses, whether newly constructed or pre-existing, substantially altered as defined below, in the Village Center or Village Center Proper Districts shall conform to Part 4 of the Gray Village Center and Village Center Proper Design Standards:

a. ~~single-family homes,~~ single-family dwellings~~,~~

b. two-family dwellings,

c. ~~and~~ multi-family ~~three-family~~ dwellings,

d. multi-family developments,

~~b~~c~~c~~.. accessory dwelling units,

~~e~~f. all accessory structures regardless of size

3. For the purposes of this Section 402.8.3, substantially altered shall specifically include any building or structure that is repaired, altered or moved to the extent that a building permit is required in accordance with Article 9 of this Zoning Ordinance and/or a building code administered by the Town of Gray

402.10.14 Standards for Multi-Family Development ~~Housing~~

In addition to the prior provisions of Section 10 for Site Plan Review, multi-family ~~housing~~ developments in all Districts shall meet the following standards:

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.

B. Driveways and Parking
The scale and surface area of parking areas, driveways and paved areas shall~~.~~:

- be compatible with adjacent structures, ~~must~~ and;
- be located in the rear of the property, and;
- be properly screened from the roadway as applicable, and;
- ~~and must~~ provide for parking in accordance with the requirements of the Site Development Standards for Site Plan Review (Section 402.10.11)~~. B~~.

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.

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, as practicably achievable based on the Planning Board's determination. In addition:

1. Individual lots, buildings, streets and parking areas shall be designed and situated:

a. To minimize alterations of the natural site;

b. To avoid the adverse effects of shadows, noise and traffic on the residents of the site;

c. To relate to surrounding properties, to improve the view from and of a building;

d. So that all dwelling units may take advantage of points of solar access.

2. Diversity and originality in lot layout and individual building, street, parking and lot layout shall be encouraged.

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.

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)~~ten (10). ~~and the average number or attached dwelling units shall be four (4).~~

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.

4. Multi-family dwellings shall also be subject to the provisions of 402.7.22, entitled "Two or More Dwelling Units on One Lot."

F. 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:

1. That the costs of providing a common water supply and distribution system are prohibitive;

2. That adequate ground water is available at all locations proposed for individual water systems;
3. That the ground water source(s) proposed for individual water systems is safe from both on-site contamination; and

4. That the source proposed is adequate for installation of life-safety sprinkler systems for the entire development.

5. Water and wastewater. The owner of a multi-family housing development shall provide written verification to the Town of Gray that each unit of the housing development is connected to adequate supply of potable water and wastewater services before the Town of Gray ~~Town~~ may certify the development for occupancy. Written verification under this subsection must include:

a. Wastewater Disposal

i. If a housing unit is connected to a public, special district or other comparable sewer system, proof of adequate service to support any additional flow created by the unit and proof of payment for the connection to the sewer system;

ii. If a housing unit is connected to a septic system, proof of adequate sewage disposal for subsurface wastewater. Plans for subsurface wastewater disposal must be prepared by a licensed site evaluator in accordance with subsurface wastewater disposal rule adopted under 22 M.R.S.A. Section 42; The septic system must be verified as adequate by the local plumbing inspector under 30-A M.R.S.A. Section 4221.

iii. In all cases, the subsurface wastewater disposal system serving the Multi-Family Development must meet First Time System criteria as established in the Maine Subsurface Wastewater Disposal Rule. Utilizing Replacement System or Expanded System criteria ~~per~~ as set forth in 10-144 CMR 241 is prohibited.

b. Water Supply

i. If a housing unit is connected to a public, special district or other centrally managed water system, proof of adequate service to support any additional flow

created by the unit, proof of payment for the connection and the volume and supply of water required for the unit; and

ii. If a housing unit is connected to a well, the owner of the property must provide written verification that the unit is connected to adequate potable water services prior to receiving a Certificate of Occupancy. Written verification must include the following: proof of access to potable water, including the standards outlined in 01-672 C.M.R. Ch. 10, section 10.25(J), Land Use Districts and Standards. Any test of an existing well or proposed well must indicate that the water supply is potable and acceptable for domestic use.

G. Shoreland zoning requirements
A multi-family housing development must comply with shoreland zoning requirements established by the Department of Environmental Protection under 38 M.R.S.A. Chapter 3 and the Town of Gray's Shoreland Zoning Ordinance, Chapter 403.

H. Subdivision requirements
This section may not be construed to exempt a subdivider from the requirements for division of a tract or parcel of land in accordance with the requirements of 30-A M.R.S.A. Section 4401-4408 regarding subdivisions.

~~J~~I. Affordable Housing Developments

1. Affordable housing shall ~~be identified per the definition in this ordinance~~meet one of the requirements set forth below:

a. For rental housing, a development in which a household whose income that does not exceed 80% of median income for the area as defined by the United States Department of Housing and Urban Development under the United States Housing Act of 1937, Public Law 75-412, 50 Stat. 888, Section 8, as amended, can afford 51% or more of the units in the development without spending more than 30% of the household's monthly income on housing costs.

b. For owned housing, a development in which a household whose income does not exceed 120% of the median income for the area as defined by the United States Department of Housing and Urban Development under the United States Housing Act of 1937, Public Law 75-412, 50 Stat. 888, Section 8, as amended, can afford 51% or more of the units in the development without spending more than 30% of the household's monthly income on housing costs.

2. Affordable Housing Developments are subject to the standards in this section, and permitted in all zoning districts where multi-family housing is conditionally permitted, subject to the provisions of Section 10 for Site Plan Review, Standards for Multi-family Development, and the following standards:

a. More than half of the proposed and existing units on the same lot must meet the definition of affordable housing. In determining affordability under this ordinance, "housing costs" are to include, but are not limited to:

i. for a rental unit, the cost of rent and any utilities (electric, heat, water, sewer and/or trash) that the household pays separately from the rent;

ii. for an owned unit, the cost of mortgage principal and interest, real estate taxes (including assessments), private mortgage insurance, homeowner's insurance, condominium fees, and homeowners' association fees.

3. A multi-family development that meets the definition of an affordable housing development is permitted a density of 2 ½ times greater than the maximum number of units allowed on a lot based on dimensional requirements in this Ordinance and the Net Residential Area/Net Residential Density requirements (as applicable) in the Subdivision Ordinance, and if located within a designated growth area, or if served by a public, special district or other centrally managed water system and a public, special district or other comparable sewer system. The development must comply with minimum lot size requirements in accordance with 12 M.R.S.A. Chapter 423-A as applicable.

4. A multi-family development that meets the definition of an affordable housing development is not required to provide more than two (2) off-street parking spaces for every three (3) units.

5. Long-term affordability. Before granting final approval of an affordable housing development, including but not limited to issuing an occupancy permit, the Town of Gray shall require that the owner of the affordable housing development have executed a restrictive covenant, recorded in the Cumberland County ~~r~~Registry of D~~d~~eeds, for the benefit of and enforceable by a third party acceptable to the municipality, to ensure that for at least 30 years after completion of construction, the development meets the following minimum standards:

A. For rental housing, occupancy of all of the units designated affordable in the development will remain limited to households at or below 80% of the local area median income at the time of initial occupancy; and

B. For owned housing, occupancy of all of the units designated affordable in the development will remain limited to households at or below 120% of the local area median income at the time of initial occupancy.

402.7.22 Two or More Dwelling Units on One Lot

1. Subdivision approval is required as applicable.

2. For any property located partially or wholly within the Shoreland Zoning District, compliance with the standards established in Gray's Shoreland Zoning Ordinance, Chapter 403, is required.

3. Compliance with State of Maine Subsurface Wastewater Disposal Rule (10-144 CMR 241) is required and in all cases, the SSWD system serving the dwelling units must meet First Time System criteria as established in the Maine SSWD Rule. Utilizing Replacement System or Expanded System criteria per 10-144 CMR 241 is prohibited.

4. Any one parcel containing two or more multifamily dwellings, two or more two-family dwellings, or any combination of buildings containing more than four dwelling units is a multi-family development and must be reviewed and approved in accordance with the Multifamily Development Standards, established in 402.10.14.

5. Accessory dwelling units, as established in Section 402.7.9, are permitted provided that applicable standards are met and maintained.

6. One Accessory Dwelling Unit per lot, as permitted per 402.7.9, shall be exempt from zoning density requirements as established in Table 402.5.4.A but shall be considered a dwelling unit for the purposes of the maximum number of dwelling units on a lot, per below.

7. If more than one accessory dwelling unit has been constructed on a lot, the lot is not eligible for any additional increases in density.

8. For parcels that do not contain an existing dwelling unit, a maximum of four dwelling units may be allowed in a designated growth area, or a maximum of two dwelling units may be allowed outside of a designated growth area, provided that all applicable dimensional standards are maintained, specifically including the minimum lot area per dwelling unit, impervious cover and setbacks, as established in Tables 402.5.4 A and B.

9. In any district where housing is permitted, a maximum of two (2) additional dwelling units may be allowed on a lot with one existing dwelling. The two (2) additional dwelling units may be comprised of one (1) additional dwelling unit within or attached to an existing structure or one (1) additional detached dwelling unit, or one of each. If the maximum of two dwelling units have been constructed on a lot as a result of the density allowance provisions of this section, the lot is not eligible for any additional increases in density unless all applicable dimensional standards are maintained, specifically including the minimum area per dwelling unit, impervious cover and setbacks, as established in Tables 402.5.4 A and B herein, provisions of this section and of 402.7.9 Accessory Dwelling Units.

10. In the event that the one additional dwelling unit has been duly permitted and constructed on a lot utilizing this exemption from zoning density requirements for minimum area per dwelling

unit, as established in Table 402.5.4 A, any additional dwelling unit must comply with all dimensional standards established in Tables 402.5.4. A and B.

TABLE 3 – MINIMUM NUMBER OF OFF-STREET PARKING SPACES	
Residential	
Dwelling: Single Family, Duplex	2 per dwelling unit
Multifamily:	
Studio	1.25 per dwelling unit
One Bedroom	1.5 per dwelling unit
Two or More Bedrooms	2 per dwelling unit
Affordable Housing Development	2 per every 3 dwelling units (maximum requirement)
Hotel/Motel	1.25 per guest room, plus 10 per 1000 sq. ft. restaurant/lounge, plus 30 per 1000 sq. ft. meeting/banquet room.
Senior Citizen Housing, Independent Living	0.6 per dwelling unit
Senior Citizen Housing, Assisted Living	0.4 per dwelling unit
Boarding Homes for Sheltered Care and Nursing Homes	1 per room
Rooming House:	
Single-Occupancy Unit	1 per dwelling unit
Double-Occupancy Unit	2 per dwelling unit
Employees	1 per employee
Visitors	As needed
Day Care, Facility (any type)	.35 per client of licensed capacity plus staff
Hospital/Medical Center	0.4 per employee, plus
	1 per 3 beds, plus
	1 per 5 average daily outpatient visits, plus
	1 per 4 medical staff, plus
	1 per student/faculty/staff
Retail/Service	
Retail Sales (not in shopping center)	3.5 per 1000 sq. ft. of gross floor area (GFA)
Supermarket (Freestanding)	4.5 per 1000 sq. ft. of GFA
Discount Superstore/Clubs	3.5 per 1000 sq. ft. of GFA
Home Improvement Superstore	2.5 per 1000 sq. ft. of GFA
Other Heavy/Hard Goods (Furniture, Appliances, Buildings Materials, etc.)	3.0 per 1000 sq. ft. of GFA
Shopping Centers	4.0 per 1000 sq. ft. of GFA,
Service Business, Personal	
Beauty Shops/Barber Shops	2 per treatment station, but not less than 4.3 per 1000 sq. ft. customer service area.
	3.5 per 1000 sq. ft. of GFA
Coin-Operated Laundry/Dry Cleaning Services	
Other	3.5 per 1000 sq. ft. of GFA

Fitness Center/Health Club	1 per 3 persons of permitted capacity
Retail Sales, Automobile Sales	2.7 per 1000 sq. ft. of interior sales area GFA, plus 1.5 per 1000 sq. ft. of interior area
Automobile Repair Services, Major or Minor	4 per service bay
Convenience Store	.25 per pump plus 1 per employee plus 4 per 1000 sq. ft.
Food and Beverage	
Restaurant	1 per 3 seats
Office and Business Services	
Business and Professional Office	4.5 per 1000 sq. ft. of GFA
Service Business, Commercial	4 per 1000 sq. ft. of GFA
Medical Office Building	5.5 per 1000 sq. ft. of GFA
Bank	5.5 per 1000 sq. ft. of GFA
Industry, Heavy	2 per 1000 sq. ft. of GFA
Industry, Light	1.5 per 1000 sq. ft.
Warehouse	0.7 per 1000 sq. ft. of GFA
Other Retail, Commercial or Business	4 per 1000 sq. ft. of GFA
Education	
Preschool/Nursery Schools	.35 per student plus 1 per employee
Elementary and Middle Schools	Per parking study specific to institution
High Schools	Per parking study specific to institution
College and University	Per parking study specific to institution
Cultural/Recreational/Entertainment	
Convention Center	0.25 per person of permitted capacity
Library	4.5 per 1000 sq. ft. of GFA
Place of Worship	1 for every 3 seats
Theater	1 for every 3 seats

Village Center/VCP Design Standards EXCERPT:

PART 4 – RESIDENTIAL DESIGN STANDARDS AND ADMINISTRATIVE PROCEDURES

I. PURPOSE

The purpose of these Design Standards for the construction of ~~single-family residential buildings, two-family residential buildings, three-family residential buildings~~, single-family dwellings, two-family dwellings, multi-family dwellings, multi-family developments, accessory dwelling units and all detached accessory structures in the Village Center (VC) and Village Center Proper (VCP) Districts is to promote the construction of such buildings in a manner that is calculated to allow for adaptive re-use of the site for either commercial or residential purposes in the future. The objective is to grant the Town of Gray increased flexibility in meeting its current goals under the Comprehensive Plan, including promoting growth in the VC and VCP districts.

II. APPLICABILITY

A. These Design Standards apply to all ~~single-family residential buildings, two-family residential buildings, three-family residential buildings,~~ single-family dwellings, two-family dwellings, multi-family dwellings, multi-family developments, accessory dwelling units, and all detached accessory structures newly constructed or reconstructed in the VC or VCP Districts, as well as those that have been substantially altered, repaired, or moved. For the purposes of applicability of these standards, "substantially altered, repaired, or moved" shall mean any one or more of the following:

1. requires a building permit for construction that affects greater than fifty percent (50%) of the floor area of the existing structure
2. requires a building permit for exterior renovations which involve structural alterations to the building.

III. AESTHETIC STANDARDS

Newly constructed or reconstructed single-family dwellings, two-family dwellings, multi-family dwellings, multi-family developments, accessory dwelling units, ~~single-family residential buildings, two-family residential buildings, three-family residential buildings, accessory dwelling units, multi-family dwellings, multi-family developments~~ and all detached accessory structures in the VC or VCP Districts, as well as existing buildings (used for that purpose) and their appurtenances, which have been substantially altered, repaired or moved, shall be visually compatible with the buildings and terrain to which they are visually related and specifically with nearby and/or adjacent buildings in terms of the following factors:

APPROVED
APRIL 27, 2022
BY GOVERNOR

CHAPTER
672
PUBLIC LAW

STATE OF MAINE

IN THE YEAR OF OUR LORD

TWO THOUSAND TWENTY-TWO

H.P. 1489 - L.D. 2003

An Act To Implement the Recommendations of the Commission To Increase Housing Opportunities in Maine by Studying Zoning and Land Use Restrictions

Be it enacted by the People of the State of Maine as follows:

Sec. 1. 5 MRSA §13056, sub-§7, as amended by PL 2003, c. 159, §3, is further amended to read:

7. Contract for services. When contracting for services, to the maximum extent feasible, seek to use the State's private sector resources in conducting studies, providing services and preparing publications; ~~and~~

Sec. 2. 5 MRSA §13056, sub-§8, as enacted by PL 2003, c. 159, §4, is amended to read:

8. Lead agency for business assistance in response to certain events. Be the lead agency for the State to provide information and business assistance to employers and businesses as part of the State's response to an event that causes the Department of Labor to carry out rapid-response activities as described in 29 United States Code, Sections 2801 to 2872 (2002) ~~.~~; and

Sec. 3. 5 MRSA §13056, sub-§9 is enacted to read:

9. Establish statewide housing production goals. Establish, in coordination with the Maine State Housing Authority, a statewide housing production goal that increases the availability and affordability of all types of housing in all parts of the State. The department shall establish regional housing production goals based on the statewide housing production goal. In establishing these goals, the department shall:

A. Establish measurable standards and benchmarks for success of the goals;

B. Consider information submitted to the department from municipalities about current or prospective housing developments and permits issued for the construction of housing; and

C. Consider any other information as necessary to meet the goals pursuant to this subsection.

Sec. 4. 30-A MRSA §4364 is enacted to read:

§4364. Affordable housing density

For an affordable housing development approved on or after July 1, 2023, a municipality with density requirements shall apply density requirements in accordance with this section.

1. Definition. For the purposes of this section, "affordable housing development" means:

A. For rental housing, a development in which a household whose income does not exceed 80% of the median income for the area as defined by the United States Department of Housing and Urban Development under the United States Housing Act of 1937, Public Law 75-412, 50 Stat. 888, Section 8, as amended, can afford a majority of the units that the developer designates as affordable without spending more than 30% of the household's monthly income on housing costs; and

B. For owned housing, a development in which a household whose income does not exceed 120% of the median income for the area as defined by the United States Department of Housing and Urban Development under the United States Housing Act of 1937, Public Law 75-412, 50 Stat. 888, Section 8, as amended, can afford a majority of the units that the developer designates as affordable without spending more than 30% of the household's monthly income on housing costs.

2. Density requirements. A municipality shall allow an affordable housing development where multifamily dwellings are allowed to have a dwelling unit density of at least 2 1/2 times the base density that is otherwise allowed in that location and may not require more than 2 off-street parking spaces for every 3 units. The development must be in a designated growth area of a municipality consistent with section 4349-A, subsection 1, paragraph A or B or the development must be served by a public, special district or other centrally managed water system and a public, special district or other comparable sewer system. The development must comply with minimum lot size requirements in accordance with Title 12, chapter 423- A, as applicable.

3. Long-term affordability. Before approving an affordable housing development, a municipality shall require that the owner of the affordable housing development have executed a restrictive covenant, recorded in the appropriate registry of deeds, for the benefit of and enforceable by a party acceptable to the municipality, to ensure that for at least 30 years after completion of construction:

A. For rental housing, occupancy of all of the units designated affordable in the development will remain limited to households at or below 80% of the local area median income at the time of initial occupancy; and

B. For owned housing, occupancy of all of the units designated affordable in the development will remain limited to households at or below 120% of the local area median income at the time of initial occupancy.

4. Shoreland zoning. An affordable housing development must comply with shoreland zoning requirements established by the Department of Environmental Protection under Title 38, chapter 3 and municipal shoreland zoning ordinances.

5. Water and wastewater. The owner of an affordable housing development shall provide written verification to the municipality that each unit of the housing development is connected to adequate water and wastewater services before the municipality may certify the development for occupancy. Written verification under this subsection must include:

A. If a housing unit is connected to a public, special district or other comparable sewer system, proof of adequate service to support any additional flow created by the unit and proof of payment for the connection to the sewer system;

B. If a housing unit is connected to a septic system, proof of adequate sewage disposal for subsurface wastewater. The septic system must be verified as adequate by a local plumbing inspector under section 4221. Plans for subsurface wastewater disposal must be prepared by a licensed site evaluator in accordance with subsurface wastewater disposal rules adopted under Title 22, section 42;

C. If a housing unit is connected to a public, special district or other centrally managed water system, proof of adequate service to support any additional flow created by the unit, proof of payment for the connection and the volume and supply of water required for the unit; and

D. If a housing unit is connected to a well, proof of access to potable water. Any tests of an existing well or proposed well must indicate that the water supply is potable and acceptable for domestic use.

6. Subdivision requirements. This section may not be construed to exempt a subdivider from the requirements for division of a tract or parcel of land in accordance with subchapter 4.

7. Restrictive covenants. This section may not be construed to interfere with, abrogate or annul the validity or enforceability of any valid and enforceable easement, covenant, deed restriction or other agreement or instrument between private parties that imposes greater restrictions than those provided in this section, as long as the agreement does not abrogate rights under the United States Constitution or the Constitution of Maine.

8. Rules. The Department of Economic and Community Development shall adopt rules to administer and enforce this section. The department shall consult with the Department of Agriculture, Conservation and Forestry in adopting rules pursuant to this subsection. The rules must include criteria for a municipality to use in calculating housing costs. Rules adopted pursuant to this subsection are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A.

Sec. 5. 30-A MRSA §4364-A is enacted to read:

§4364-A. Residential areas, generally; up to 4 dwelling units allowed

1. Use allowed. Notwithstanding any provision of law to the contrary, except as provided in Title 12, chapter 423-A, for any area in which housing is allowed, a municipality shall allow structures with up to 2 dwelling units per lot if that lot does not contain an existing dwelling unit, except that a municipality shall allow up to 4 dwelling units per lot if that lot does not contain an existing dwelling unit and the lot is located in a designated growth area within a municipality consistent with section 4349-A, subsection 1, paragraph A or B or if the lot is served by a public, special district or other centrally managed water system and a public, special district or other comparable sewer system in a municipality without a comprehensive plan.

A municipality shall allow on a lot with one existing dwelling unit the addition of up to 2 dwelling units: one additional dwelling unit within or attached to an existing structure or one additional detached dwelling unit, or one of each.

A municipality may allow more units than the number required to be allowed by this subsection.

2. Zoning requirements. With respect to dwelling units allowed under this section, municipal zoning ordinances must comply with the following conditions.

A. If more than one dwelling unit has been constructed on a lot as a result of the allowance under this section or section 4364-B, the lot is not eligible for any additional increases in density except as allowed by the municipality.

B. A municipal zoning ordinance may establish a prohibition or an allowance for lots where a dwelling unit in existence after July 1, 2023 is torn down and an empty lot results.

3. General requirements. A municipal ordinance may not establish dimensional requirements or setback requirements for dwelling units allowed under this section that are greater than dimensional requirements or setback requirements for single-family housing units, except that a municipal ordinance may establish requirements for a lot area per dwelling unit as long as the required lot area for subsequent units on a lot is not greater than the required lot area for the first unit.

4. Water and wastewater. The owner of a housing structure must provide written verification to the municipality that the structure is connected to adequate water and wastewater services before the municipality may certify the structure for occupancy. Written verification under this subsection must include:

A. If a housing structure is connected to a public, special district or other comparable sewer system, proof of adequate service to support any additional flow created by the structure and proof of payment for the connection to the sewer system;

B. If a housing structure is connected to a septic system, proof of adequate sewage disposal for subsurface wastewater. The septic system must be verified as adequate by a local plumbing inspector under section 4221. Plans for subsurface wastewater disposal must be prepared by a licensed site evaluator in accordance with subsurface wastewater disposal rules adopted under Title 22, section 42;

C. If a housing structure is connected to a public, special district or other centrally managed water system, proof of adequate service to support any additional flow created by the structure, proof of payment for the connection and the volume and supply of water required for the structure; and

D. If a housing structure is connected to a well, proof of access to potable water. Any tests of an existing well or proposed well must indicate that the water supply is potable and acceptable for domestic use.

5. Municipal implementation. In adopting an ordinance, a municipality may:

A. Establish an application and permitting process for housing structures;

B. Impose fines for violations of building, zoning and utility requirements for housing structures; and

C. Establish alternative criteria that are less restrictive than the requirements of subsection 4 for the approval of a housing structure only in circumstances in which the municipality would be able to provide a variance under section 4353, subsection 4, 4-A, 4-B or 4-C.

6. Shoreland zoning. A housing structure must comply with shoreland zoning requirements established by the Department of Environmental Protection under Title 38, chapter 3 and municipal shoreland zoning ordinances.

7. Subdivision requirements. This section may not be construed to exempt a subdivider from the requirements for division of a tract or parcel of land in accordance with subchapter 4.

8. Restrictive covenants. This section may not be construed to interfere with, abrogate or annul the validity or enforceability of any valid and enforceable easement, covenant, deed restriction or other agreement or instrument between private parties that imposes greater restrictions than those provided in this section, as long as the agreement does not abrogate rights under the United States Constitution or the Constitution of Maine.

9. Rules. The Department of Economic and Community Development may adopt rules to administer and enforce this section. The department shall consult with the Department of Agriculture, Conservation and Forestry in adopting rules pursuant to this subsection. Rules adopted pursuant to this section are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A.

10. Implementation. A municipality is not required to implement the requirements of this section until July 1, 2023.

Sec. 6. 30-A MRSA §4364-B is enacted to read:

§4364-B. Accessory dwelling units

1. Use permitted. Except as provided in Title 12, chapter 423-A, a municipality shall allow an accessory dwelling unit to be located on the same lot as a single-family dwelling unit in any area in which housing is permitted.

2. Restrictions. An accessory dwelling unit may be constructed only:

A. Within an existing dwelling unit on the lot;

B. Attached to or sharing a wall with a single-family dwelling unit; or

C. As a new structure on the lot for the primary purpose of creating an accessory dwelling unit.

This subsection does not restrict the construction or permitting of accessory dwelling units constructed and certified for occupancy prior to July 1, 2023.

3. Zoning requirements. With respect to accessory dwelling units, municipal zoning ordinances must comply with the following conditions:

A. At least one accessory dwelling unit must be allowed on any lot where a single-family dwelling unit is the principal structure; and

B. If more than one accessory dwelling unit has been constructed on a lot as a result of the allowance under this section or section 4364-A, the lot is not eligible for any additional increases in density except as allowed by the municipality.

4. General requirements. With respect to accessory dwelling units, municipalities shall comply with the following conditions.

A. A municipality shall exempt an accessory dwelling unit from any density requirements or calculations related to the area in which the accessory dwelling unit is constructed.

B. For an accessory dwelling unit located within the same structure as a single-family dwelling unit or attached to or sharing a wall with a single-family dwelling unit, the setback requirements and dimensional requirements must be the same as the setback requirements and dimensional requirements of the single-family dwelling unit, except for an accessory dwelling unit permitted in an existing accessory building or secondary building or garage as of July 1, 2023, in which case the requisite setback requirements for such a structure apply. A municipality may establish more permissive dimensional and set back requirements for an accessory dwelling unit.

C. An accessory dwelling unit may not be subject to any additional parking requirements beyond the parking requirements of the single-family dwelling unit on the lot where the accessory dwelling unit is located.

5. Shoreland zoning. An accessory dwelling unit must comply with shoreland zoning requirements established by the Department of Environmental Protection under Title 38, chapter 3 and municipal shoreland zoning ordinances.

6. Size requirements. An accessory dwelling unit must meet a minimum size of 190 square feet. If the Technical Building Codes and Standards Board under Title 10, section 9722 adopts a different minimum size, that standard applies. A municipality may impose a maximum size for an accessory dwelling unit.

7. Water and wastewater. The owner of an accessory dwelling unit must provide written verification to the municipality that the accessory dwelling unit is connected to adequate water and wastewater services before the municipality may certify the accessory dwelling unit for occupancy. Written verification under this subsection must include:

A. If an accessory dwelling unit is connected to a public, special district or other comparable sewer system, proof of adequate service to support any additional flow created by the accessory dwelling unit and proof of payment for the connection to the sewer system;

B. If an accessory dwelling unit is connected to a septic system, proof of adequate sewage disposal for subsurface wastewater. The septic system must be verified as adequate by a local plumbing inspector under section 4221. Plans for subsurface wastewater disposal must be prepared by a licensed site evaluator in accordance with subsurface wastewater disposal rules adopted under Title 22, section 42;

C. If an accessory dwelling unit is connected to a public, special district or other centrally managed water system, proof of adequate service to support any additional flow created by the accessory dwelling unit, proof of payment for the connection and the volume and supply of water required for the accessory dwelling unit; and

D. If an accessory dwelling unit is connected to a well, proof of access to potable water. Any tests of an existing well or proposed well must indicate that the water supply is potable and acceptable for domestic use.

8. Municipal implementation. In adopting an ordinance under this section, a municipality may:

A. Establish an application and permitting process for accessory dwelling units;

B. Impose fines for violations of building, zoning and utility requirements for accessory dwelling units; and

C. Establish alternative criteria that are less restrictive than the requirements of subsections 4, 5, 6 and 7 for the approval of an accessory dwelling unit only in circumstances in which the municipality would be able to provide a variance under section 4353, subsection 4, 4-A, 4-B or 4-C.

9. Rate of growth ordinance. A permit issued by a municipality for an accessory dwelling unit does not count as a permit issued toward a municipality's rate of growth ordinance as described in section 4360.

10. Subdivision requirements. This section may not be construed to exempt a subdivider from the requirements for division of a tract or parcel of land in accordance with subchapter 4.

11. Restrictive covenants. This section may not be construed to interfere with, abrogate or annul the validity or enforceability of any valid or enforceable easement, covenant, deed restriction or other agreement or instrument between private parties that imposes greater restrictions than those provided in this section, as long as the agreement does not abrogate rights under the United States Constitution or the Constitution of Maine.

12. Rules. The Department of Economic and Community Development may adopt rules to administer and enforce this section. The department shall consult with the Department of Agriculture, Conservation and Forestry in adopting rules pursuant to this subsection. Rules adopted pursuant to this subsection are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A.

13. Implementation. A municipality is not required to implement the requirements of this section until July 1, 2023.

Sec. 7. 30-A MRSA §4364-C is enacted to read:

§4364-C. Municipal role in statewide housing production goals

This section governs the responsibilities and roles of municipalities in achieving the statewide and regional housing production goals set by the Department of Economic and Community Development in Title 5, section 13056, subsection 9.

1. Fair housing and nondiscrimination. A municipality shall ensure that ordinances and regulations are designed to affirmatively further the purposes of the federal Fair Housing Act, 42 United States Code, Chapter 45, as amended, and the Maine Human Rights Act to achieve the statewide or regional housing production goal.

2. Municipalities may regulate short-term rentals. A municipality may establish and enforce regulations regarding short-term rental units in order to achieve the statewide or regional housing production goal. For the purposes of this subsection, "short-term rental unit" means living quarters offered for rental through a transient rental platform as defined by Title 36, section 1752, subsection 20-C.

APPROVED
JUNE 16, 2023
BY GOVERNOR

CHAPTER
192
PUBLIC LAW

STATE OF MAINE

IN THE YEAR OF OUR LORD

TWO THOUSAND TWENTY-THREE

H.P. 1095 - L.D. 1706

An Act to Clarify Statewide Laws Regarding Affordable Housing and Accessory Dwelling Units

Emergency preamble. Whereas, acts and resolves of the Legislature do not become effective until 90 days after adjournment unless enacted as emergencies; and

Whereas, current law requires, beginning July 1, 2023, all municipalities to allow a certain number of dwelling units under certain circumstances and the construction of accessory dwelling units on the same lot as a single-family dwelling unit and to comply with certain other zoning requirements; and

Whereas, it is the intent of this legislation to extend the implementation date for certain municipalities; and

Whereas, in the judgment of the Legislature, these facts create an emergency within the meaning of the Constitution of Maine and require the following legislation as immediately necessary for the preservation of the public peace, health and safety; now, therefore,

Be it enacted by the People of the State of Maine as follows:

Sec. 1. 30-A MRSA §4364, first ¶, as enacted by PL 2021, c. 672, §4, is amended to read:

For an affordable housing development approved on or after ~~July 1, 2023~~ the implementation date, a municipality with density requirements shall apply density requirements in accordance with this section.

Sec. 2. 30-A MRSA §4364, sub-§1, as enacted by PL 2021, c. 672, §4, is amended to read:

1. Definition. For the purposes of this section, "affordable housing development" means:

A. For rental housing, a development in which a household whose income does not exceed 80% of the median income for the area as defined by the United States Department of Housing and Urban Development under the United States Housing Act of 1937, Public Law 75-412, 50 Stat. 888, Section 8, as amended, can afford ~~a majority~~

51% or more of the units ~~that the developer designates as affordable~~ in the development without spending more than 30% of the household's monthly income on housing costs; and

B. For owned housing, a development in which a household whose income does not exceed 120% of the median income for the area as defined by the United States Department of Housing and Urban Development under the United States Housing Act of 1937, Public Law 75-412, 50 Stat. 888, Section 8, as amended, can afford ~~a majority~~ 51% or more of the units ~~that the developer designates as affordable~~ in the development without spending more than 30% of the household's monthly income on housing costs.

Sec. 3. 30-A MRSA §4364, sub-§1-A is enacted to read:

1-A. Implementation date. For purposes of this section, "implementation date" means:

A. January 1, 2024 for municipalities for which ordinances may be enacted by the municipal officers without further action or approval by the voters of the municipality; and

B. July 1, 2024 for all other municipalities.

Sec. 4. 30-A MRSA §4364, sub-§3, as enacted by PL 2021, c. 672, §4, is amended to read:

3. Long-term affordability. Before ~~approving~~ granting final approval of an affordable housing development, including but not limited to issuing an occupancy permit, a municipality shall require that the owner of the affordable housing development have executed a restrictive covenant, recorded in the appropriate registry of deeds, for the benefit of and enforceable by a party acceptable to the municipality, to ensure that for at least 30 years after completion of construction:

A. For rental housing, occupancy of all of the units designated affordable in the development will remain limited to households at or below 80% of the local area median income at the time of initial occupancy; and

B. For owned housing, occupancy of all of the units designated affordable in the development will remain limited to households at or below 120% of the local area median income at the time of initial occupancy.

Sec. 5. 30-A MRSA §4364, sub-§6, as enacted by PL 2021, c. 672, §4, is amended to read:

6. Subdivision requirements. This section may not be construed to exempt a subdivider from the requirements ~~for division of a tract or parcel~~ of ~~land in accordance with~~ subchapter 4.

Sec. 6. 30-A MRSA §4364-A, sub-§1, as enacted by PL 2021, c. 672, §5, is amended to read:

1. Use allowed. Notwithstanding any provision of law to the contrary, except as provided in Title 12, chapter 423-A, for any area in which ~~housing is~~ residential uses are allowed, including as a conditional use, a municipality shall allow structures with up to 2 dwelling units per lot if that lot does not contain an existing dwelling unit, except that a municipality shall allow up to 4 dwelling units per lot if that lot does not contain an existing

dwelling unit and the lot is located in a designated growth area within a municipality consistent with section 4349-A, subsection 1, paragraph A or B or if the lot is served by a public, special district or other centrally managed water system and a public, special district or other comparable sewer system in a municipality without a comprehensive plan.

A municipality shall allow on a lot with one existing dwelling unit the addition of up to 2 dwelling units: one additional dwelling unit within or attached to an existing structure or one additional detached dwelling unit, or one of each.

A municipality may allow more units than the number required to be allowed by this subsection.

Sec. 7. 30-A MRSA §4364-A, sub-§1-A is enacted to read:

1-A. Implementation date. For purposes of this section, "implementation date" has the same meaning as in section 4364, subsection 1-A.

Sec. 8. 30-A MRSA §4364-A, sub-§2, ¶B, as enacted by PL 2021, c. 672, §5, is amended to read:

B. A municipal zoning ordinance may establish a prohibition or an allowance for lots where a dwelling unit in existence after ~~July 1, 2023~~ the implementation date is torn down and an empty lot results.

Sec. 9. 30-A MRSA §4364-A, sub-§3, as enacted by PL 2021, c. 672, §5, is amended to read:

3. General requirements. A municipal ordinance may not establish dimensional requirements ~~or~~, including but not limited to setback requirements, for dwelling units allowed under this section that are greater than dimensional requirements ~~or~~, including but not limited to setback requirements, for single-family housing units, except that a municipal ordinance may establish requirements for a lot area per dwelling unit as long as the required lot area for subsequent units on a lot is not greater than the required lot area for the first unit.

Sec. 10. 30-A MRSA §4364-A, sub-§7, as enacted by PL 2021, c. 672, §5, is amended to read:

7. Subdivision requirements. This section may not be construed to exempt a subdivider from the requirements ~~for division of a tract or parcel~~ of ~~land in accordance with~~ subchapter 4.

Sec. 11. 30-A MRSA §4364-A, sub-§10, as enacted by PL 2021, c. 672, §5, is amended to read:

10. Implementation. A municipality is not required to implement the requirements of this section until ~~July 1, 2023~~ the implementation date.

Sec. 12. 30-A MRSA §4364-B, sub-§1, as enacted by PL 2021, c. 672, §6, is amended to read:

1. Use permitted. Except as provided in Title 12, chapter 423-A, a municipality shall allow an accessory dwelling unit to be located on the same lot as a single-family dwelling unit in any area in which ~~housing is~~ residential uses are permitted, including as a conditional use.

Sec. 13. 30-A MRSA §4364-B, sub-§1-A is enacted to read:

1-A. Implementation date. For purposes of this section, "implementation date" has the same meaning as in section 4364, subsection 1-A.

Sec. 14. 30-A MRSA §4364-B, sub-§2, as enacted by PL 2021, c. 672, §6, is amended by amending the first blocked paragraph to read:

This subsection does not restrict the construction or permitting of accessory dwelling units constructed and certified for occupancy prior to ~~July 1, 2023~~ the implementation date.

Sec. 15. 30-A MRSA §4364-B, sub-§3, as enacted by PL 2021, c. 672, §6, is amended to read:

3. Zoning requirements. With respect to accessory dwelling units, municipal zoning ordinances must comply with the following conditions:

A. At least one accessory dwelling unit must be allowed on any lot where a single-family dwelling unit is the principal structure; ~~and~~

B. If more than one accessory dwelling unit has been constructed on a lot as a result of the allowance under this section ~~or section 4364-A~~, the lot is not eligible for any additional increases in density except as allowed by the municipality~~.~~; and

C. An accessory dwelling unit is allowed on a lot that does not conform to the municipal zoning ordinance if the accessory dwelling unit does not further increase the nonconformity.

Sec. 16. 30-A MRSA §4364-B, sub-§4, ¶B, as corrected by RR 2021, c. 2, Pt. A, §110, is amended to read:

B. For an accessory dwelling unit located within the same structure as a single-family dwelling unit or attached to or sharing a wall with a single-family dwelling unit, the setback requirements and dimensional requirements must be the same as the setback requirements and dimensional requirements of the single-family dwelling unit, except for an accessory dwelling unit permitted in an existing accessory building or secondary building or garage as of ~~July 1, 2023~~ the implementation date, in which case the requisite setback requirements for such a structure apply. A municipality may establish more permissive dimensional and setback requirements for an accessory dwelling unit.

Sec. 17. 30-A MRSA §4364-B, sub-§4, ¶D is enacted to read:

D. An accessory dwelling unit that was not built with municipal approval must be allowed if the accessory dwelling unit otherwise meets the requirements for accessory dwelling units of the municipality and under this section.

Sec. 18. 30-A MRSA §4364-B, sub-§5, as enacted by PL 2021, c. 672, §6, is amended to read:

5. Shoreland zoning. An accessory dwelling unit must comply with shoreland zoning requirements established by the Department of Environmental Protection under Title 38, chapter 3 and municipal shoreland zoning ordinances, except that a municipality may not categorically prohibit accessory dwelling units in the shoreland zone that would otherwise meet requirements established by the Department of Environmental Protection under Title 38, chapter 3 and municipal shoreland zoning ordinances.

Sec. 19. 30-A MRSA §4364-B, sub-§8, ¶A, as enacted by PL 2021, c. 672, §6, is amended to read:

A. Establish an application and permitting process for accessory dwelling units that does not require planning board approval;

Sec. 20. 30-A MRSA §4364-B, sub-§10, as enacted by PL 2021, c. 672, §6, is amended to read:

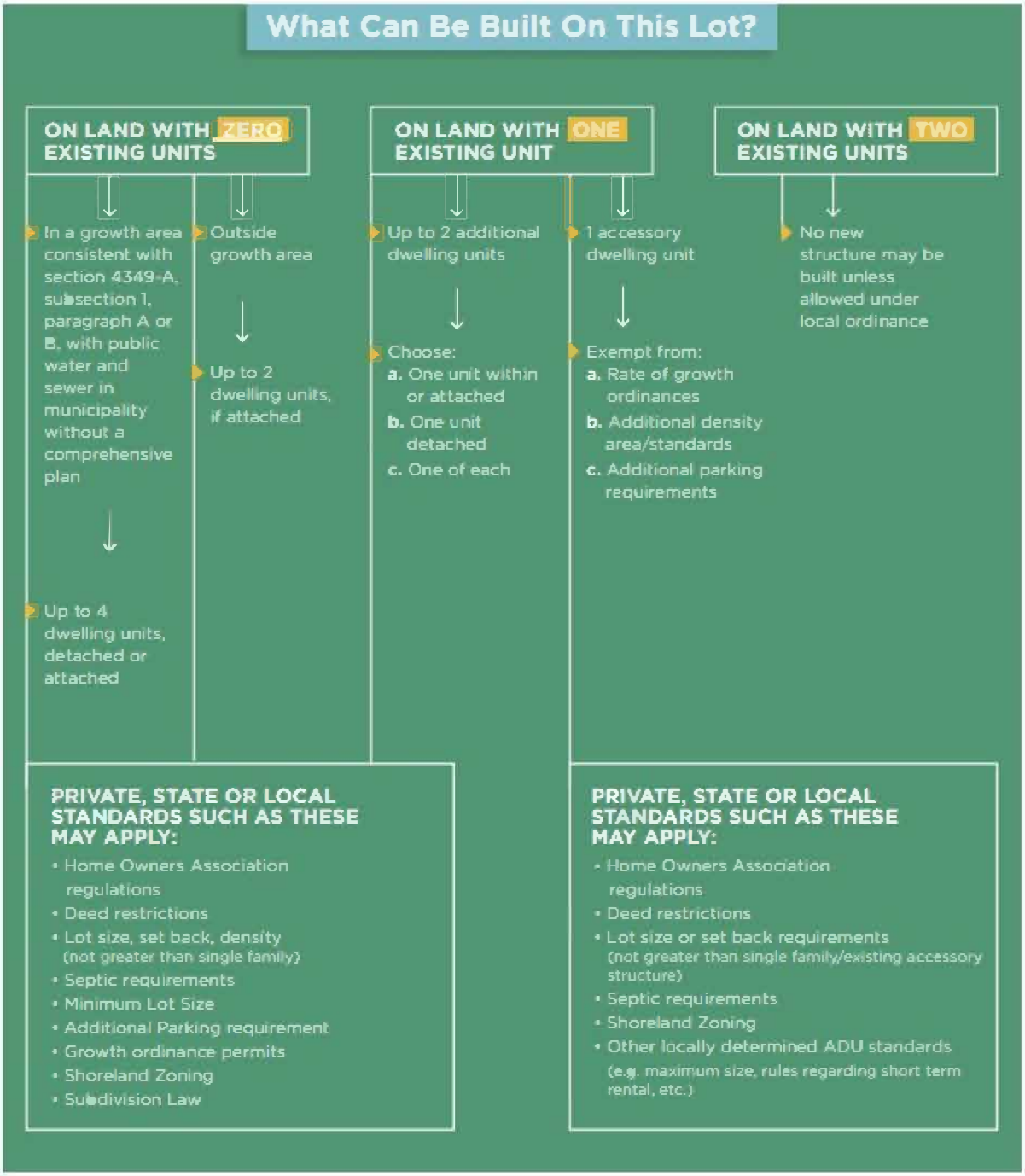
10. Subdivision requirements. This section may not be construed to exempt a subdivider from the requirements ~~for division of a tract or parcel~~ of ~~land in accordance with~~ subchapter 4.

Sec. 21. 30-A MRSA §4364-B, sub-§13, as enacted by PL 2021, c. 672, §6, is amended to read:

13. Implementation. A municipality is not required to implement the requirements of this section until ~~July 1, 2023~~ the implementation date.

Emergency clause. In view of the emergency cited in the preamble, this legislation takes effect when approved.


Residential Areas
Empty Lot Where Housing Is Already Allowed
1
2
3
4
Empty Lot
One Dwelling Unit
Two Dwelling Units
Three Dwelling Units
Four Dwelling Units
NOTE: The three and four units can be within one structure or multiple structures.
THREE AND FOUR UNITS ALLOWED IF:
- Located in "growth area" consistent with section 4349-A, subsection 1, paragraph A or B.
- Located in area with existing water/ sewer capabilities in towns without comprehensive plans.
Existing Home
+1
OR
+1
OR
+1
Adding 1 Unit to Lot with Existing Home
Additional unit within the existing structure (e.g., basement or attic)
Additional unit attached to the existing structure
Additional unit detached from the existing structure
+1
+1
OR
+1
+1
Adding 2 Units to Lot with Existing Home
Additional units attached to the existing structure and detached from existing structure
Additional units within the existing structure and detached from the existing structure


What Can Be Built On This Lot?
ON LAND WITH ZERO EXISTING UNITS
In a growth area consistent with section 4349-A, subsection 1, paragraph A or B, with public water and sewer in municipality without a comprehensive plan
Up to 4 dwelling units, detached or attached
Outside growth area
Up to 2 dwelling units, if attached
ON LAND WITH ONE EXISTING UNIT
Up to 2 additional dwelling units
Choose:
a. One unit within or attached
b. One unit detached
c. One of each
1 accessory dwelling unit
Exempt from:
a. Rate of growth ordinances
b. Additional density area/standards
c. Additional parking requirements
ON LAND WITH TWO EXISTING UNITS
No new structure may be built unless allowed under local ordinance
PRIVATE, STATE OR LOCAL STANDARDS SUCH AS THESE MAY APPLY:
• Home Owners Association regulations
• Deed restrictions
• Lot size, set back, density (not greater than single family)
• Septic requirements
• Minimum Lot Size
• Additional Parking requirement
• Growth ordinance permits
• Shoreland Zoning
• Subdivision Law
PRIVATE, STATE OR LOCAL STANDARDS SUCH AS THESE MAY APPLY:
• Home Owners Association regulations
• Deed restrictions
• Lot size or set back requirements (not greater than single family/existing accessory structure)
• Septic requirements
• Shoreland Zoning
• Other locally determined ADU standards (e.g. maximum size, rules regarding short term rental, etc.)

DrummondWoodsum
ATTORNEYS AT LAW

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Admitted in ME, NH

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84 Marginal Way, Suite 600
Portland, Maine 04101-2480
207.772.1941 Main
207.772.3627 Fax

September 21, 2023

VIA EMAIL & FIRST CLASS MAIL

Gray Planning Board
Henry Pennell Municipal Complex
24 Main Street
Gray, ME 04039
Attn: Kristen Muszynski, Town Planner

RE: Application to Amend Hemlock Woods Subdivision from 38 Blackthorne, LLC as to property located at 38 Blackthorne Lane, Gray ("Property")

Dear Chairman Cobb and Members of the Planning Board:

Thank you for your time and consideration at the Planning Board Workshop and Hearing on September 14, 2023. After considering your feedback, my clients have decided to withdraw their requests for (i) removal of the open space designation and (ii) approval of a condition requiring that at least 8 acres of the Property be reserved as open space. My clients are on the agenda for the October 6 Open Space Committee meeting and intend to work with Committee on this issue.

Therefore, at this juncture, we ask that the Planning Board limit its review to the request to amend the Subdivision to create the back lot. Terradyn Consultants is submitting a revised plan that depicts this request (having removed Note 16).

Please let me know if you need more information.

Sincerely,



Laura J. Hartz, Esq.

cc: Terradyn Consultants, LLC Jimmy Courborn, PLS
38 Blackthorne LLC, Steve Trask & Tony Fernandez

Surveyor's Certification

To the best of my knowledge, I have used ordinary and prudent conduct expected of Professional Land Surveyors and the results shown here represent the licensee's responsibility to the public as required under the Standards of Practice as defined by the Board of Licensure for Professional Land Surveyors (M.R.S.A Title 32, Chapter 141, Dated April 2001).

Except as Follows:

1. Survey Report Limited to Notes on the Plan

2. No Deed Description to Date

Plan Prepared by: _____

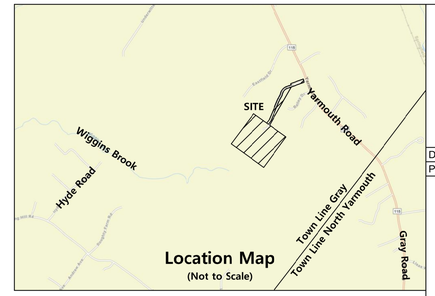
Jimmy C. Courbron PLS # 2532

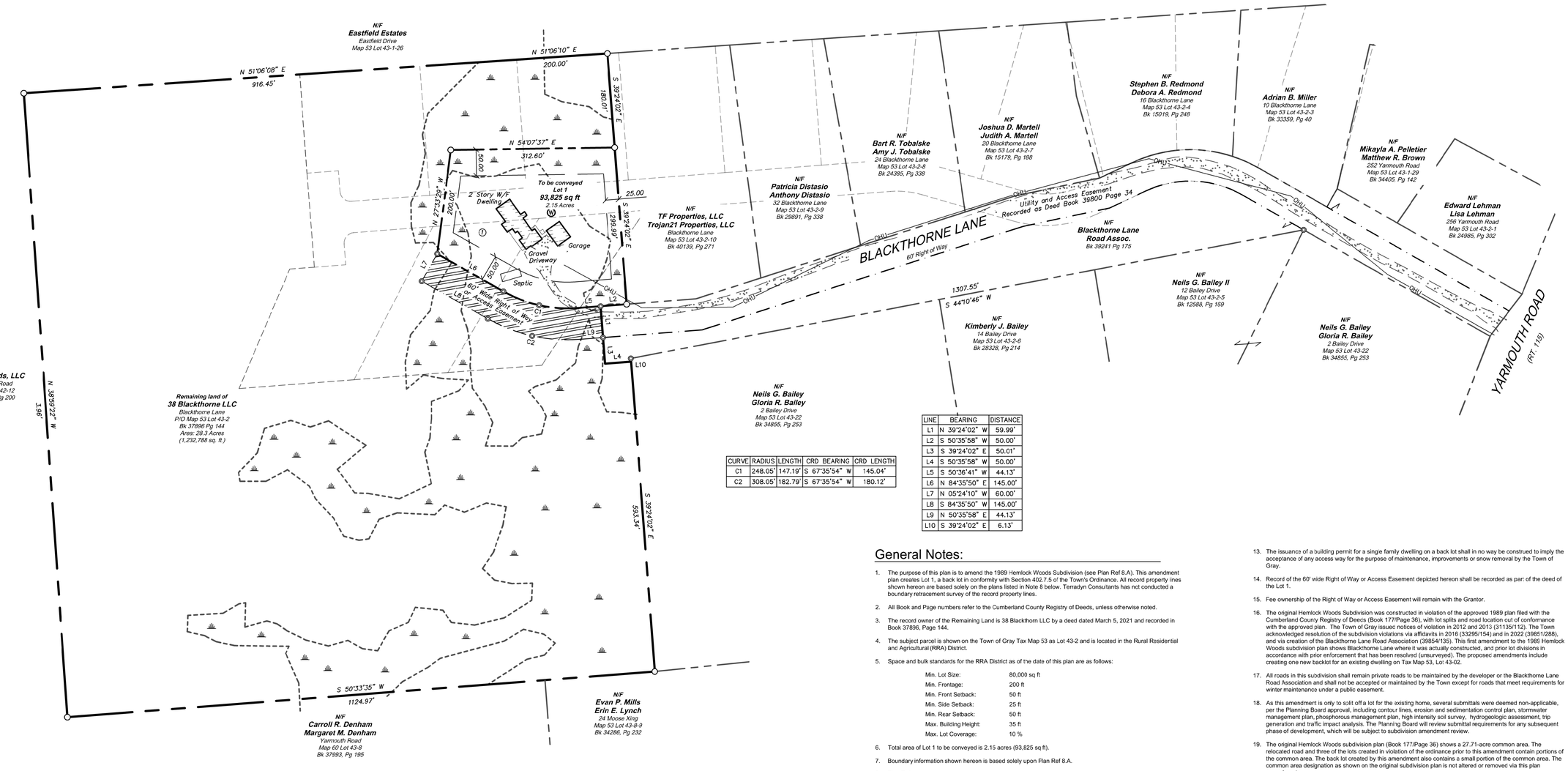
Legend:

- Record Property Line/R.O.W.
- Proposed Lot Line/R.O.W.
- Lines per Plan Ref. 8A
- Abutter Line/R.O.W.
- Building
- Building Overhang
- Deck/Steps
- Building Setback Line
- Easement Line
- 5/8" Rebar (TERRADYN PLS 2532)
- Monument (4" X 4" X 48" Granite w/ Drillhole)
- Iron Marker (per Plan Ref. 8.B)
- Wetlancs
- Edge of Wetland

PLAN REF 8A

MAG NORTH





CURVE	RADIUS	LENGTH	CRD BEARING	CRD LENGTH
C1	248.05'	147.19'	S 67°35'54" W	145.04'
C2	308.05'	182.79'	S 67°35'54" W	180.12'

LINE	BEARING	DISTANCE
L1	N 39°24'02" W	59.99'
L2	S 50°35'58" W	50.00'
L3	S 39°24'02" E	50.01'
L4	S 50°35'58" W	50.00'
L5	S 50°36'41" W	44.13'
L6	N 84°35'50" E	145.00'
L7	N 05°24'10" W	60.00'
L8	S 84°35'50" W	145.00'
L9	N 50°35'58" E	44.13'
L10	S 39°24'02" E	6.13'

General Notes:

1. The purpose of this plan is to amend the 1989 Hemlock Woods Subdivision (see Plan Ref 8.A). This amendment plan creates Lot 1, a back lot in conformity with Section 402.7.5 of the Town's Ordinance. All record property lines shown hereon are based solely on the plans listed in Note 8 below. Terradyn Consultants has not conducted a boundary retracement survey of the record property lines.
2. All Book and Page numbers refer to the Cumberland County Registry of Deeds, unless otherwise noted.
3. The record owner of the Remaining Land is 38 Blackthorn LLC by a deed dated March 5, 2021 and recorded in Book 37896, Page 144.
4. The subject parcel is shown on the Town of Gray Tax Map 53 as Lot 43-2 and is located in the Rural Residential and Agricultural (RRA) District.
5. Space and bulk standards for the RRA District as of the date of this plan are as follows:

Min. Lot Size:	80,000 sq ft
Min. Frontage:	200 ft
Min. Front Setback:	50 ft
Min. Side Setback:	25 ft
Min. Rear Setback:	50 ft
Max. Building Height:	35 ft
Max. Lot Coverage:	10 %

6. Total area of Lot 1 to be conveyed is 2.15 acres (93,825 sq ft).
7. Boundary information shown hereon is based solely upon Plan Ref 8.A.
8. Plan References:
   - A. "Standard Boundary Survey Hemlock Woods" Prepared for Henry Buchholz by R. P. Titcomb Assoc. Inc. Dated May 1988. Recorded in the Cumberland County Registry of Deeds Plan Book 177, Page 36.
   - B. "Survey Plan of Land of U.S. Bank National Association, as Trustee 38 Blackthorne Lane" Prepared for U.S. National Association by Sitelines, PA. Dated September 2016.
9. Plan orientation is Magnetic North, based on Plan Ref. 8.A. Elevations depicted hereon are NAVD88, based on dual-frequency GPS observations.
10. A portion of the subject parcel is located within Zone C, Areas of Minimal Flood Hazard as delineated on the Flood Insurance Rate Map for the Town of Gray, Cumberland County, Community-Panel Number 2300480015A, having an Effective Date of Jan 6, 1982.
11. A wetland delineation was performed on the remaining land and Lot 7 by Mark Hampton Associates, Inc. in April 2022. This wetlands delineation conforms to the standards and methods outlined in the 1987 Wetland Delineation Manual and Northeast Regional Supplement authored and published by the U.S. Army Corps of Engineers. All Wetland flags were located using Global Positioning System (GPS) technology capable of decimeter accuracy.
12. The depth, size, location, existence or nonexistence of underground utilities and/or structures were not investigated as part of this survey. Utilities depicted hereon may not necessarily represent all existing utilities. Owners, contractors, and/or designers need to contact Dig-Safe Systems, Inc. (call 811) and field verify existing utilities prior to digging or breaking ground.
13. The issuances of a building permit for a singe family dwelling on a back lot shall in no way be construed to imply the acceptance of any access way for the purpose of maintenance, improvements or snow removal by the Town of Gray.
14. Record of the 60' wide Right of Way or Access Easement depicted hereon shall be recorded as par: of the deed of the Lot 1.
15. Fee ownership of the Right of Way or Access Easement will remain with the Grantor.
16. The original Hemlock Woods Subdivision was constructed in violation of the approved 1989 plan filed with the Cumberland County Registry of Deecs (Book 177/Page 36), with lot splits and road location cut of conformance with the approved plan. The Town of Gray issuec notices of violation in 2012 and 2013 (31135/112). The Town acknowledged resolution of the subdivision violations via affidavits in 2016 (33295/154) and in 2022 (39851/288), and via creation of the Blackthorne Lane Road Association (39854/135). This first amendment to the 1989 Hemlock Woods subdivision plan shows Blackthorne Lane where it was actually constructed, and prior lot divisions in accordance with prior enforcement that has been resolved (unsurveyed). The proposec amendments include creating one new backlot for an existing dwelling on Tax Map 53, Lot 43-02.
17. All roads in this subdivision shall remain private roads to be maintained by the developer or the Blackthorne Lane Road Association and shall not be accepted or maintained by the Town except for roads that meet requirements for winter maintenance under a public easement.
18. As this amendment is only to split off a lot for the existing home, several submittals were deemed non-applicable, per the Planning Board approval, including contour lines, erosion and sedimentation control plan, stormwater management plan, phosphorous management plan, high intensity soil survey, hydrogeologic assessment, trip generation and traffic impact analysis. The Planning Board will review submittal requirements for any subsequent phase of development, which will be subject to subdivision amendment review.
19. The original Hemlock Woods subdivision plan (Book 177/Page 36) shows a 27.71-acre common area. The relocated road and three of the lots created in violation of the ordinance prior to this amendment contain portions of the common area. The back lot created by this amendment also contains a small portion of the common area. The common area designation as shown on the original subdivision plan is not altered or removed via this plan amendment.

Approval: Town of Gray Planning Board

_____Chairman

_____

_____

_____

_____

_____

_____Date

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 INCH = 100 FT.

STATE OF MAINE, Cumberland County, SS
REGISTRY OF DEEDS

Received _____

At ____ h ____ m ____M and recorded in

Plan Book _____, Page _____

Attest _____
Registrar

STATE OF MAINE
JIMMY C. COURBRON
No. PLS2532
PROFESSIONAL LAND SURVEYOR

DATE: DATE
PLS: PLS

NO.	DATE	REVISIONS
3	10/22/2023	ISSUED FOR PLANNING BOARD SIGNATURES
2	08/15/2023	ISSUED FOR PLANNING BOARD REVIEW
1	08/03/2023	ISSUED TO ATTORNEY FOR REVIEW

ADDRESS: 41 CAMPUS DRIVE, SUITE 301, NEW GLOUCESTER, ME 04260
PHONE: (207) 926-5111
WEB SITE: www.terradyncnsultants.com

TERRADYN CONSULTANTS, LLC

Civil Engineering | Land Surveying | Geomatics
Stormwater Design | Land Planning | Environmental Permitting

PROJECT: HEMLOCK WOODS
BLACKTHORNE LANE, GRAY MAINE

SHEET TITLE: 1ST AMENDED SUBDIVISION PLAN

FOR RECORD OWNER: TONY FERNANDEZ
PO BOX 685
GORHAM, ME 04038

DATE: 08/15/2023
SCALE: 1"= 100'
JOB NO: 22-82
SHEET: 1 OF 1

Sheet Size 24" X 36"

C:\2021\Terradyn Consultants\Project Folders - Documents\2022 Jobs\22-82 Blackthorne Lane\CAD\Survey\22-82.dwg

TERRADYN
CONSULTANTS, LLC

HEMLOCK WOODS SUBDIVISION

38 BLACKTHORNE LANE
GRAY, MAINE

SUBDIVISION AMENDMENT APPLICATION

PREPARED FOR:

38 BLACKTHORNE LLC
C/O TONY FERNANDEZ
P.O. BOX 685
GORHAM, ME 04038

PREPARED BY:

TERRADYN CONSULTANTS LLC
41 CAMPUS DRIVE, SUITE 101
NEW GLOUCESTER, ME 04260

AUG 2023

DrummondWoodsum
ATTORNEYS AT LAW

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Admitted in ME, NH

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Portland, Maine 04101-2480
207.772.1941 Main
207.772.3627 Fax

August 7, 2023

Gray Planning Board
Henry Pennell Municipal Complex
24 Main Street
Gray, ME 04039
Attn: Kristen Muszynski, Town Planner

RE: Application to Amend Hemlock Woods Subdivision (Phase I)

Dear Chairman Cobb and Members of the Planning Board:

I represent 38 Blackthorne, LLC (including members Tony Fernandez and Steve Trask) in their development of the real property located at 38 Blackthorne Lane in Gray as generally shown on Tax Map 53, Lot 43-2 ("Property"). Enclosed, please find an application to amend the Hemlock Woods Subdivision to create a back lot on Blackthorne Lane.

The Hemlock Woods Subdivision was originally approved by the Planning Board on February 23, 1989 and recorded in the Cumberland County Registry of Deeds in Plan Book 177, Page 36 and has a complicated history. Please see the enclosed summary for your reference.

Today, the Property is approximately 30.45 acres and is largely undeveloped except for an existing single-family home and attached garage with a well and septic system. The Property is located in the Rural Residential and Agricultural (RRA) District, and is surrounded by residential development on all sides. A wetland delineation has been conducted; wetland boundaries are shown on the attached plan. Tony and Steve propose to develop the Property in two phases, but request approval for Phase I today.

The Phases are:

- **Phase I:** With this application, Tony and Steve request approval to amend Hemlock Woods Plan to create a back lot in conformity with Section 402.7.5 of the Ordinance. The lot will be 2.15 acres to encompass the existing single-family home, garage, well, and septic system. The lot will be accessed by a 60' wide private access and utility easement that connects the end of Blackthorne Lane to the new lot. The remainder of the Property will be 28.3 acres.

- **Phase II:** In early 2024, Tony and Steve anticipate requesting approval to further amend the Hemlock Woods Plan to develop the remaining land as housing in conformity with Ordinance. Tony and Steve will reserve at least 8 acres of the remaining land as open space in connection with that development.

We look forward to discussing Phase I of this project with you at the Workshop and Planning Board Meeting on Thursday, September 14, 2023. Thank you for your time and consideration.

Sincerely,



Laura J. Hartz, Esq.

cc: Terradyn Consultants, LLC Jimmy Courborn, PLS
Steve Trask
Tony Fernandez

DrummondWoodsum
ATTORNEYS AT LAW

MEMORANDUM

TO:	Town of Gray Planning Board
FROM:	Laura J. Hartz, Esq.
DATE:	August 7, 2023
RE:	History of Hemlock Woods Subdivision

Below we provide a summary of the history of the Hemlock Woods Subdivision, a portion of which Bridgepoint Capital, LLC hopes to develop as housing in conformity with the Ordinance.

- February 23, 1989: Gray Planning Board approves "Hemlock Woods Plan" as a cluster subdivision with 14 lots of approximately 1.2-acres each, with a 27-acre common area, shared septic, and access from Route 115 via Woods Lane. Plan is recorded a CCRD Plan Book 177, Page 36.

- 1992 – 1994: The original developer sells two lots (not in conformity with the plan) and sells the balance of the property to Marc and Liana Rubinstein.

- 1994 – 2012: The Rubinsteins reconfigure the lots and sell them without receiving approval for an amended subdivision plan from the Gray Planning Board. The Rubinsteins record four new plans without subdivision approval. The owners receive building permits from the Town of Gray.

- November 5, 2012: Town of Gray issues Notice of Violation to Rubinsteins for conveying lots in violation of Ordinance and state law.

- October 16, 2013: Town of Gray issues second notice of violation to Rubinsteins.

- 2013 – 2018: Rubinsteins default on their mortgage, their lender forecloses, and institutes a title insurance claim. Town, lender, and title insurance company negotiate.

- July 16, 2018: Town, lender, and title insurance company enter into settlement agreement resolving violations and obligating the parties to improve the road, form a road association, and convey the fee in the road to the association.

- December 4, 2019: Bridgepoint Capital buys the remaining undeveloped land and the road, helps to form the Blackthorne Lane Road Association (BLRA), and conveys the fee in the road to BLRA.

TERRADYN
CONSULTANTS, LLC

TABLE OF CONTENTS

1. SUBDIVISION AMENDMENT APPLICATION
2. APPLICATION CHECKLIST

DEEDS, EASEMENT, & ROAD ASSOCIATION

3. LOCUS DEED (Bk 37896 Pg 144)
4. DEED TO ROAD ASSOCIATION (Bk 39241 Pg 175)
5. UTILITY & ACCESS EASEMENT DEED (Bk 39800 Pg 34)
6. DECLARATION OF BLACKTHORNE LANE ROAD ASSOCIATION (BK 39854 PG 135)

ENVIRONMENTAL DOCUMENTS

7. U.S. FISH & WILDLIFE SERVICE – IPaC
8. SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

EXHIBIT PLANS & SUBDIVISION PLAN

9. TOWN GIS MAP W/ ZONING
10. FEMA FLOOD MAP
11. CROPPED TOWN COMPREHENSIVE PLAN
12. HEMLOCK WOODS SUBDIVISION AMENDMENT PLAN

PLANNING BOARD/STAFF REVIEW COMMITTEE APPLICATION
TOWN OF GRAY MAINE

PROPERTY TO BE DEVELOPED			
Property Location/Address	38 Blackthorne Lane	Property Map/Lot	053 . 043 . 002 . 000
Zoning District	Rural Residential & Agricultural	Lot Acreage	30.45 acres
Owner Name	38 Blackthorne, LLC	Tax Sheet	
Owner Address	PO Box 685, Gorham, ME 04038	Owner Phone	207-232-7505
APPLICANT			
Name (IF different than owner)	Tony Fernandez	Contact Phone Number	207-232-7505
Mailing Address	PO Box 685, Gorham, ME 04038	Alternate Phone Number	
Mailing City/State/Zip		Fax Number	
Email Address	tfernandez@bridgepointlend.com		
AGENT/CONSULTANT			
Name	Terradyn Consultants, LLC - Jimmy Courbron	Contact Phone Number	207-212-4478
Mailing Address	95 Main Street - Suite 201	Alternate Phone Number	207-926-5111
Mailing City/State/Zip	Auburn, Me 04210	Fax Number	
Email Address	jim@terradynconsultants.com		

PROJECT

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

☐ **Subdivision**
- Sketch Plan Review
- Preliminary Plan Review (Major)
- Final Plan Review (Major)
- Minor

☐ **Site Plan Review**
- Pre-Application Conference
- Minor
- Major

☐ **Shoreland Zoning Permit**

☐ **Other (specify)**
- Conditional Use
- ☒ Amendment
- Extension
- Workshop
- Contract Zone Request

Project Description / Comments:

Proposed amendment to Hemlock Woods Subdivision.

Applicant Signature [redacted] **Date** 5/11/2023

PRELIMINARY SUBDIVISION PLAN APPLICATION SUBMISSION CHECKLIST F-1B TOWN OF GRAY MAINE

For Office Use Only
Date Received: _____
Received by: _____

SUBDIVISION

Subdivision Name	Hemlock Wood Subdivision	Date	August 07, 2023

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 7** 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 *preliminary plan*.

There is an additional checklist for *final plan* submission. Neither checklist addresses the standards that the subdivision plan must meet. For review standards refer to Article 13 & checklist F-1D.

PRELIMINARY SUBDIVISION PLAN SUBMISSION REQUIREMENTS

	Submitted by Applicant	Not Applicable	Applicant Request to be Waived	Reviewed by Planner/ Engineer	Waived by Planning Board
401.7.2.A Fourteen (14) copies of application plus accompanying information	X				
401.7.2.B LOCATION MAP					
B.1 Existing subdivisions in the proximity of proposed subdivision	X				
B.2 Locations and names of existing and proposed streets	X				
B.3 Zoning boundaries and designations	X				
B.4 Outline of proposed subdivision and owner's remaining contiguous land	X				
401.7.2.C PRELIMINARY PLAN					
C. Fourteen (14) copies of all maps and/or drawings printed or reproduced on paper	X				
C. Scale not smaller than 1"= 100'; for subdivision more than 100 acres, not smaller than 1"= 200'	X				
401.7.2.C APPLICATION REQUIREMENTS					
C.1 Name of subdivision name of town and assessor's map and lot number(s)	X				
C.2 Verification of right, title or interest in property	X				
C.3 Standard boundary survey with bearings and distances, certified by PLS, all corners located and marked.	X				
C.3 Standard boundary survey shows entire parcel or tract and all contiguous land in common ownership within the last five years per MRSA Title 30-A section 4401	X				
C.4 Copy of most recently recorded deed; all restrictions, easements, rights-of-way and other encumbrances	X				
C.5 Deed restrictions on proposed new lots or dwellings	X				

401.7.2.C APPLICATION REQUIREMENTS (CONT'D)					
C.6 Map of test pits & test pit analyses by Site Evaluator or Certified Soil Scientist		X			
C.7 Type of water supply system(s)		X			
C.7 Gray Water District letter of capacity		X			
C.8 Date plan prepared, north point and graphic map scale	X				
C.9 Names and addresses of record owner, applicant, plan preparer(s) and adjoining property owners	X				
C.10 All wetlands delineated regardless of size	X				
C.11 Total acres in subdivision; location of property lines, existing building(s), unusually large specimen trees, vegetative cover type and other essential physical features	X				
C.12 All rivers, streams and brooks within and adjacent to subdivision; designation of great pond watershed	X				
C.13 Zoning district of proposed subdivision and any zoning boundary lines affecting the subdivision	X				
C.14 Location and size of existing and proposed sewers, water mains, culverts and drainage ways on and adjacent to subdivision	X				
C.15 Location, name and widths of existing and proposed streets and highways easements, building lines, parks and open spaces on or adjacent to subdivision	X				
C.16 Width & location of any streets, public improvements or open space shown in Comprehensive Plan within the property	X				
C.17 Proposed lot lines, approximate dimensions and lot areas	X				
C.18 Parcels of land proposed to be dedicated to public use; condition of such dedication	X				
C.19 Open space to be preserved; proposed ownership, improvements, management	X				
C.20 Area of each lot permitting forest clearing and/or lawn	X				
C.21 Anticipated driveway locations & constraints	X				
C.22 100-year flood elevations in flood prone areas		X			
C.22 Areas within or adjacent to the subdivision identified by the Comprehensive Plan, MDIFW, MNAP, or BWH as areas to be preserved and appropriate preservation measures.	X				
C.23 Areas within or adjacent to subdivision listed in the Comprehensive Plan or listed/eligible to be listed on National Register of Historic Places	X				

401.7.3 ADDITIONAL REQUIRED PLANS & STUDIES					
A. Contour lines at interval set by Planning Board showing all areas at greater than 25% slopes		X			
B. Erosion & sedimentation control plan (can be waived if not in great pond watershed and < 5% impervious)		X			
C. Stormwater management plan (can be waived if not in great pond watershed and < 5% impervious)		X			
D. Phosphorus management plan if in pond watershed & > 4 lots or 800 ft. of road or drives		X			
401.7.4 REQUIRED SUBMISSIONS FOR WHICH A WAIVER MAY BE GRANTED					
A. High Intensity Soil Survey by a Registered Soil Scientist		X			
B.1 Hydrogeologic assessment for subdivision if any part of subdivision is over a sand and gravel aquifer, or		X			
B.2 Hydrogeologic assessment if average density is more than one dwelling unit per 100,000 sq. ft.		X			
B.3 Hydrogeologic assessment if Board determines potential adverse impacts on ground water quality (e.g., shallow bedrock soils, cluster subdivisions)		X			
C. Vehicular trip generation rates & entrance sight distances		X			
D. Traffic impact analysis by a registered traffic P.E. for 28 or more parking spaces or projected to generate more than 140 vehicle trips per day to include expected ADT, peak-hour volumes, access conditions, distribution of traffic, types of vehicles expected, effect on LOS, recommended improvements		X			

DLN1002140134675

Quitclaim Deed

Anthony Fernandez, of Gorham, County of Cumberland and State of Maine, and **Steven Trask,** of Scarborough, County of Cumberland and State of Maine, for consideration paid, grant to **38 Blackthorne, LLC,** a Maine limited liability company, having a mailing address of 38 Madison Way, Gorham, Maine 04038 **WITH QUITCLAIM COVENANT**, the land and interest in land situated in Gray, County of Cumberland and State of Maine, described as follows:

A certain lot or parcel of land with any improvements thereon, situated on the westerly side of Route 115 in the Town of Gray, County of Cumberland and State of Maine, bounded and described as follows:

A certain lot or parcel of land in the Town of Gray in the County of Cumberland and State of Maine, and lying on the westerly side of the road leading from Gary Corner to North Yarmouth, bounded and described as follows, to wit:

Beginning on the line of the said road at a stone wall twelve (12) rods from the southeast corner of the dwelling house belonging to the Estate of John D. Sawyer (deceased) thence southeasterly on the line of the said road, eighty-three (83) rods, more or less, to a stone wall and land of Ralph R. Lawton; thence south about fifty (50) degrees west on said Lawston's line one hundred forty-eight (148) rods, more or less, to a stone post and corner made by lot hereby conveyed, also land of Sumner Perley, Harvey Libby and George H. Chase; thence west about forty (40) degrees north, seventy-two (72) rods, more or less, to an iron post and corner of land owned by John D. Sawyer Estate; thence on said Sawyer's line northeasterly about one hundred ninety (190) rods, more or less, to place of beginning.

Excepting and reserving from the above described premises a conveyance from Hale Bros. Inc. to Neils G. Bailey and Gloria R. Bailey, which said deed is duly recorded in the Cumberland County Registry of Deeds; the deed of Vincent, dated December 18, 1981, and recorded in said Registry in Book 4898, Page 232; the deed of Sanborn dated January 12, 1982, and recorded in the Cumberland County Registry of Deeds in Book 4907, Page 201; and the deed of Burrows, dated July 5, 1983, and recorded in said Registry in Book 6213, Pages 281-282.

Excepting from the herein parcel conveyed the following:

1. A certain lot or parcel of land conveyed to Cathleen M. White from the Grantor herein dated July 3, 1972 and recorded at said Registry of Deeds in Book 10158, Page 171.

2. A certain lot or parcel of land conveyed to Paul R. Murphy, et al. from the Grantor herein dated June 25, 1993 and recorded in said Registry of Deeds in Book 10791, Page 294.

3. A certain lot or parcel of land bounded and described as follows: on the east by said Route 115; on the west by property of said Cathleen M. White, now Cathleen M. Bowen, et al.; on the south by land now or formerly of Timothy and Ellen Sanborn (Book 4907, Page 201); and on the north by land now or formerly of Robert S. and Gale M. Blanchard (Book 4694, Page 82). Reference is made to a plan recorded at the Cumberland County Registry of Deeds in Plan Book 177, Page 36 which more particularly describes this parcel. Reference is further made to a deed from the Grantor herein so the said Cathleen M. Bowen and Joseph M. Bowen by deed of even or recent date.

That portion of the parcel conveyed to the Grantees herein shown as Woods Lane on said Plan recorded in Plan Book 177, Page 36 extending from the westerly sideline of Route 115 in a westerly direction to a point, which point is the extension of the westerly sideline of Murphy's lot in a southerly direction for the width of Woods Lane, is an easement or right of way in common with said Murphy and White, now Bowen.

Also a certain lot or parcel of land northwesterly of, but not adjacent to Blackthorne Lane, in the Town of Gray, County of Cumberland and State of Maine. Said lot being more specifically bounded and described as follows:

Beginning at a point located at the northwesterly corner of the grantor as described in the Cumberland County Registry of Deeds in Book 10791, Page 294. Said point being located South 52° 41' 13" West 336 feet from a capped iron rod at the northerly corner of land of the grantor.

Thence North 52° 41' 13" East along the northwesterly sideline of the grantor, 10.70 feet to a point.

Thence South 41° 00' 39" East, across land of the grantor, 96.56 feet to a point and land of the grantee.

Thence North 47° 16' 37" West along the land of the grantee, 97.83 feet to the point of beginning.

Reference is made to a "Plan of Hemlock Woods" recorded in the Cumberland County Registry of Deeds in Book 177, Page 36.

Excepting and reserving the premises described in the deed from Marc L. Rubinstein and Liana L. Rubinstein to Paul R. Murphy and Julia A. Murphy fka Julia A. Stilphen dated April 9, 1996 and recorded in the Cumberland County Registry of Deeds in Book 12451 Page 179.

Excepting and reserving the premises described in the deed from Marc L. Rubinstein and Liana L. Rubinstein to Joshua D. Martell and Judith A. Martell dated November 19, 1999 and recorded in the Cumberland County Registry of Deeds in Book 15179 Page 188.

DOC :15895 BK:37896 PG:146
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
03/05/2021, 01:03:15P
Register of Deeds Nancy A. Lane E-RECORDED

Excepting and reserving the premises described in the deed from Marc L. Rubinstein and Liana L. Rubinstein to MGM Builders, Inc. dated November 30, 2020 and recorded in the Cumberland County Registry of Deeds in Book 15875, Page 343.

Being the same premises conveyed to Anthony Fernandez and Steven Trask, by virtue of a deed from U.S. Bank National Association, as Trustee for American General Mortgage Loan Trust 2010-1 American General Mortgage Pass-Through Certificates, Series 2010-1 dated December 4, 2019 and recorded in the Cumberland County Registry of Deeds in Book 37218, Page 84.

IN WITNESS WHEREOF, We have hereunto set our hands and seals this 5th day of March, 2021.

Witness

Anthony Fernandez [redacted]

Witness

Steven Trask

STATE OF MAINE
COUNTY OF CUMBERLAND

March 5, 2021

Personally appeared the above named Anthony Fernandez and Steven Trask and acknowledged the foregoing instrument to be their free act and deed.

Before me,

[redacted]
Notary Public/Attorney-at-Law

SANDRA J. WOOD
NOTARY PUBLIC
State of Maine
Commission Expires Jan. 9, 2027

After recording return to:
38 Blackthorne, LLC
109 Gordon Farms Road
Gorham, ME 04038

MAINE REAL ESTATE TAX-Paid

DLN1002240185646

QUITCLAIM DEED WITH COVENANT
(Maine Statutory Short Form)

ANTHONY FERNANDEZ, of Gorham, Maine, whose mailing address is 38 Madison Way, Gorham, ME 04039, and **STEVEN TRASK**, of Scarborough, Maine, whose mailing address is 208 Broadturn Rd., Scarborough, ME 04074, do hereby **GRANT** to **BLACKTHORNE LANE ROAD ASSOCIATION**, a Maine nonprofit corporation, whose mailing address is c/o Jensen Baird Gardner & Henry, Ten Free Street, Box 4510, Portland, Maine 04112-4510, with **QUITCLAIM COVENANTS**, the land in Gray, Maine, described as follows:

All that certain tract of land being in said Town of Gray, and being more particularly bounded and described on **Exhibit A**, attached hereto.

The grantors herein except and reserve, to themselves and their heirs and assigns forever, as owners of the premises conveyed to them by deed from U.S. Bank National Association, recorded in Book 37218, Page 84, the right of ingress and egress, by foot and vehicle, in over and across the designated 60 foot wide right of way known as "**Blackthorne Lane**" located within the premises described on **Exhibit A**, which 60 foot wide right of way extends from the westerly sideline of Yarmouth Road and along and adjacent to the most southerly boundary of the existing lots of said Bowen, Redmond, Martell, Tobalske, Distasio, and Lincoln Capital, as identified on **Exhibit A**.

The premises conveyed herein are conveyed subject to the rights of ingress and egress of the owners of the lots abutting on and served by said Blackthorne Lane and included within the property described on **Exhibit A**.

WITNESS our hands and seals as of the date set forth below.

WITNESS:

_____

[redacted]
Anthony Fernandez
Dated: 3/8, ~~2021~~ 2022
AF

STATE OF MAINE
County of Cumberland, ss.
March 8, ~~2021~~ 2022

Then personally appeared the above named ANTHONY FERNANDEZ and acknowledged the foregoing instrument to be his free act and deed.

Before me,
[redacted]
Attorney at Law/Notary Public
Printed Name:

JAN-MARIE CARROLL
STATE OF MAINE
NOTARY PUBLIC
MY COMMISSION EXPIRES MARCH 31, 2024

[Trask signature page follows on page 2.]

[redacted]

Steven Trask
Dated: 3/8 ~~,2021~~ 2022

STATE OF MAINE
County of ~~York, ss.~~ Cumberland Inc

March 8, ~~2021~~ 2022 inc

Then personally appeared the above named STEVEN TRASK and acknowledged the foregoing instrument to be his free act and deed.

Before me

[redacted]

Attorney at Law/Notary Public
Printed Name:

[Exhibit A follows on pages 3 and 4]

JAN-MARIE CARROLL
STATE OF MAINE
MY COMMISSION EXPIRES MARCH 31, 2024
NOTARY PUBLIC

EXHIBIT A: Property Description - Blackthorne Lane Property, Gray, Maine
(Note: "CCRD" refers to Cumberland County Registry of Deeds).

A certain lot or parcel of land located on the westerly side of the Yarmouth Road, in the Town of Gray, County of Cumberland, and State of Maine, being bounded and described as follows.

Beginning at an iron marker found at the southwesterly corner of land now or formerly of O'Donnell (see CCRD BOOK 27573, Page 70) and land now or formerly of Joseph Bowen (CCRD BOOK 17423, Page 127), and as shown on a plan prepared by Sitelines, PA, entitled "Survey Plan of Land of U.S. Bank National Association, As Trustee 38 Blackthorne Lane" dated September 25, 2016 (herein, the "Plan"), and thence:

1) Southerly by said Bowen land, to an iron marker, said marker being located S 05°18'00" E a distance of Forty and 00/100 (40.00) feet from said point of beginning;

2) S 84°42'00" W by said Bowen land a distance of One Hundred Fifty-Two and 12/100 (152.12) feet to a point;

3) Westerly by said Bowen land and land now or formerly held by Stephen and Debora Redmond (CCRD BOOK 15019, Page 248) as shown on said Plan, following a curve to the left having a radius of Two Hundred Sixty and 00/100 (260.00) feet, an arc distance of Two Hundred Forty-Nine and 58/100 (249.58) feet to a point;

4) S 29°42'00" W by said Redmond land a distance of Sixty-Eight and 54/100 (68.54) to an iron marker;

5) S 43°02'55" W by land now or formerly held by Joshua and Judith Martell (CCRD BOOK 15179, Page 188) as shown on said Plan a distance of One Hundred Sixty-Four and 85/100 (164.85) feet to an iron marker;

6) S 37°07'12" W by said Martell land distance of One Hundred and 00/100 (100.00) feet to a point and land now or formerly held by Bob and Amy Tobalske (CCRD BOOK 24385, Page 338);

7) S 37°07'12" W by said land now or formerly of Tobalske as shown on said Plan a distance of Two Hundred Ten and 00/100 (210.00) feet to an iron marker at land now or formerly of Distasio (CCRD BOOK 29831, Page 221);

8) S 37°07'12" W by said land now or formerly held by Patricia and Anthony Distasio as shown on said Plan a distance of Two Hundred and 00/100 (200.00) feet to a point at land now or formerly of Lincoln Capital (CCRD BOOK 31730, Page 207);

9) S 37°07'12" W by land now or formerly held by Lincoln Capitol as shown on said Plan a distance of One Hundred Thirty and 01/100 (130.01) feet to a point;

10) S 50°35'58" W by said land of Lincoln Capital a distance of One Hundred Thirty-Two and 85/100 (132.85) feet to a point;

11) S 50°35'58" W through said land of Lincoln Capital a distance of Fifty and 00/100 (50.00) feet to a point;

12) S 39°24'02" E through said land of Lincoln Capital a distance of One Hundred-Ten and 00/100 (110.00) feet to a point;

13) N 50°35'58" E through said land of Lincoln Capital a distance of Fifty and 00/100 (50.00) feet to a point at land now or formerly of Neils and Gloria Bailey (CCRD BOOK 4692, Page 1);

14) N 39°24'02" W along said Bailey land a distance of approximately Ten (10) feet to an iron marker;

15) N 44°10'46" E by said Bailey land, land of Kimberly Bailey (CCRD BOOK 28328, Page 214, and land of Neils Bailey II (CCRD BOOK 12588, Page 169), all as shown on said Plan, a total distance of One Thousand Three Hundred Seven and 55/100 (1307.55) feet to an iron marker;

16) N 84°42'00" E by said land of Neils Bailey, II a distance of Four Hundred Nine and 84/100 (409.84) feet to a point and said westerly sideline of the Yarmouth Road; thence

17) N 02°10'09" E by said Yarmouth Road a distance of Sixty and 51/100 (60.51) feet to a point; thence

18) N 02°10'09" E, continuing by said Yarmouth Road a distance of Forty and 34/100 (40.34) feet to a point and land now or formerly of Edward and Lisa Lehman (CCRD BOOK 24835, Page 202);

19) S 84°42'00" W by said Lehman land and said O'Donnell land a total distance of Four Hundred and Five and 83/100 (405.83) feet to the point of beginning.

Bearings are Magnetic and are based on bearings on plan entitled "Standard Boundary Survey-Hemlock Woods made for Henry Buchholz", dated May 12, 1989 by R.P. Titcomb Associates , Inc., recorded in Plan Book 177, Page 36, as referenced on plan entitled "Survey Plan of Land of U.S. Bank National Association, As Trustee 38 Blackthorne Lane" dated September 25, 2016.

Meaning and intending to describe land designated as "Blackthorne Lane and turnaround easement" as shown on a plan entitled "Survey Plan of Land of U.S. Bank National Association, As Trustee 38 Blackthorne Lane" dated September 25, 2016.

P:\LEL\GRAY Town of\Deed to Association-Blackthorne Lane 3.2.2021.doc

DOC :53347 BK:39800 PG:34
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
10/24/2022, 10:08:23A
Register of Deeds Jessica M. Spaulding E-RECORDED

EASEMENT DEED

BLACKTHORNE LANE ROAD ASSOCIATION, a Maine nonprofit corporation, whose mailing address is c/o Jensen Baird Gardner & Henry, Ten Free Street, Box 4510, Portland, Maine 04112-4510 does hereby **QUITCLAIM** to **ANTHONY FERNANDEZ**, of Gorham, Maine, whose mailing address is 38 Madison Way, Gorham, ME 04039, and **STEVEN TRASK**, of Scarborough, Maine, whose mailing address is 208 Broadturn Rd., Scarborough, ME 04074, the following easement regarding land in Gray, Maine, as follows:

The right and easement for the installation and maintenance of utilities, in, over, across and within the designated 60 foot wide right of way known as "**Blackthorne Lane**" located on the premises described in a deed recorded in Book 39241, Page 175. The within easement is granted for the benefit of and appurtenant to remaining portions of the premises conveyed to grantees by deed from U.S. Bank National Association recorded in Book 37218, Page 84,

The right and easement granted herein is made upon the following conditions:

a) Following any work or disturbance of the road or right of way area, such areas shall be restored to their original condition by the Grantees, their heirs, successors and assigns.
b) Any work done by Grantees pursuant to the within easement shall be undertaken and performed in accordance with all applicable laws, ordinances, rules and regulations, and only after obtaining any and all applicable permits, licenses or approvals.
c) Grantees shall hold the Association harmless from and indemnify it for any loss, costs or expenses arising out of the work done in the exercise of the foregoing easement.

The purpose of this deed is to correct for the omission of rights for the grantees to provide utility services to the retained land, which was inadvertently omitted in the original conveyance dated March 8, 2022 and recorded in the Cumberland County Registry of Deeds at Book 39241 Page 175.

WITNESS, its hand and seal as of this 20 day of October, 2022.

WITNESS: [redacted]

Blackthorne Lane Road Association
[redacted]
By: Leslie E. Lowry, Esq.
Its: President

STATE OF MAINE
County of Cumberland, ss. October 20, 2022

Then personally appeared the above named Leslie E. Lowry and acknowledged the foregoing instrument to be his free act and deed on behalf of the **Blackthorne** Lane Road Association.

Before me
[redacted]
~~Attorney at Law~~/Notary Public
Printed Name: Katelyn A. Payne

Utility easement deed.

KATELYN A. PAYNE
Notary Public-Maine
My Commission Expires
September 24, 2027

DECLARATION

of

BLACKTHORNE LANE ROAD ASSOCIATION

Including Certain Covenants and Restrictions

This Declaration is made by and among Blackthorne Lane Road Association, a Maine non-profit corporation (hereinafter referred to as "**Association**" or "**Declarant**"), and by the Lot Owners, as hereinafter defined.

WHEREAS, the Association was formed by the filing of articles of incorporation with the Maine Secretary of State's Office on January 24, 2018, as a result of negotiations resulting in that certain settlement agreement and release, dated July 26, 2018, by and among the Town of Gray, Chicago Title Insurance Company, and US Bank National Association as Trustee for American General Mortgage Loan Trust 2010-1 American General Mortgage Pass-Through Certificates, Series 2010-1, seen and agreed to by the then-existing Lot Owners, as defined below (the "**Settlement Agreement**").

WHEREAS, the Association is the fee owner of certain real estate situated in the Town of Gray, County of Cumberland, State of Maine by Quitclaim Deed with Covenant of Anthony Fernandez and Steven Trask to Blackthorne Lane Road Association, dated March 8, 2022, and recorded in the Cumberland County Registry of Deeds at Book 39241, Page 175, as shown on a plan attached hereto and incorporated herein as **Exhibit A**, and being described more particularly in the deed attached hereto and incorporated herein as **Exhibit B** (the "**Property**").

WHEREAS, the Property includes (i) a 50-foot wide private road or right of way now known as "**Blackthorne Lane**" and (ii) land adjacent to such Blackthorne Lane right of way (herein, the "Adjacent Land"), which Adjacent Land may serve or be used for drainage and snow storage/disposal from Blackthorne Lane. Such Adjacent Land is part of the Property but outside the bounds of Blackthorne Lane and is intended to be maintained in an undeveloped and natural state, and maintenance and upkeep of such Adjacent Land including plantings, removal of trash, dead trees or limbs or unsightly refuse, may be undertaken only by or at the direction of the Association.

WHEREAS, the parties listed on **Exhibit C** are the "**Lot Owners.**" The Lot Owners are the owners of residential use properties which are lots or parcels of land (each herein a "**Lot**") identified on **Exhibit C** by reference to the deed by which each respective Lot Owner acquired or holds title to such Lot.

WHERAS, the Lots adjoin the Property and have, or may have, certain rights and easements with respect to Blackthorne Lane by virtue of prior deeds conveying such Lots (the "Existing Rights and Easements").

WHEREAS, all of the Lot Owners are members of the Association.

WHEREAS, the Association and the Lot Owners wish to establish a mechanism and agreement for managing the use, maintenance, repair, and upkeep of Blackthorne Lane and the Adjacent Land for the use and benefit of their Lots, and for the general welfare of the Lots on Blackthorne Lane.

THEREFORE, the Association and the Lot Owners do each hereby declare, covenant, and agree with each other, and for and on behalf of their respective successors, heirs, and assigns, that the Property shall be held, owned, and maintained subject to the terms of this Declaration for the purposes of protecting the value and desirability of the Lots in perpetuity; and, further, that the Association is formed and has adopted, contemporaneously herewith, its Bylaws, Rules and Regulations, for the purposes of improving, maintaining and repairing "Blackthorne Lane" which serves each Lot, and the Property. The rights and obligations hereunder shall run with the title to the Property and the Lots, and shall be binding on all parties having or hereafter acquiring any right, title, or interest in the Lots or any part thereof, whether as owners, joint owners, tenants, or occupants, and each of their respective successors, heirs, and assigns. All rights respecting the use of and obligations for maintenance and upkeep of the Property hereunder may be enforced by the Association and the Owners, as provided herein.

1. **Definition and Terms.**

a. "**Association**" shall mean and refer to BLACKTHORNE LANE ROAD ASSOCIATION, a Maine non-profit corporation, the Bylaws of which are attached hereto as **Exhibit D**.

b. "**Owner**" shall mean and refer to the record owner, whether one or more persons or entities, of any Lot, and their respective heirs, assigns, or successors in title of such Lot, including the Lot Owners who have initially joined in this Declaration. The owner of the currently unimproved lot owned by Lincoln Capital, LLC, shall become a member of the road association and so entitled to a vote therein upon drawing a building permit therefor and then becomes liable for the various fees and assessments as the other Lot Owners. Any person, firm, or entity who holds an interest as a mortgagee in a Lot only as security for a loan shall not be a member of the Association.

c. "**Lot**" shall mean and refer to (i) each of the seven (7) legally existing Lots listed on **Exhibit C** (including the unimproved lot owned by Lincoln Capital, LLC), or any legally created lot made by the division of the Lot owned by Fernandez and Trask on said **Exhibit C**. Each of the Lots is directly accessed to and from the public road known as Route 115 (a/k/a "**Yarmouth Road**") by or across Blackthorne Lane. The owner or owners of any Lot legally created hereafter, which Lot is accessed by, through or over Blackthorne Lane, shall be required and deemed to hold title to such Lot subject

to the terms of this Declaration. For the purposes of this Declaration, a "legally created Lot" shall mean a lot or parcel of land created by lawful subdivision of any existing lot accessed by Blackthorne Lane. Further, for purposes of this Agreement, adjacent Lots in common ownership which have only one (1) residential dwelling thereon and are used and occupied as a single site shall be deemed a single Lot. Each Lot is entitled to one (1) vote in the Association.

2. **Association.** The Association is organized and existing for the purpose of improving, repairing and maintaining Blackthorne Lane and the Property.

3. **Members.** Lot Owners shall be members of the Association, and membership in the Association shall be limited to Lot Owners. Membership shall be appurtenant to and may not be severed from ownership of a Lot; provided, that a tenant of a Lot pursuant to a written lease of over one (1) year may be eligible to act under a written proxy for the actual titled Owner of that Lot for the duration of the lease (or such shorter time as may be stated by the Owner in the written proxy), upon providing the written Proxy to the Board, signed by owners of such Lot.

4. **Assessments.** Each member shall pay to the Association the assessments as established by the Association. Assessments shall be apportioned equally, on a per Lot basis. Assessments shall be used to achieve the objectives of the Association as described in the Declaration and Bylaws. The Board of Directors shall establish the date or dates on which the assessments shall be due, or if no due date is specified, assessments shall be due and payable no later than fifteen (15) days from being ratified and/or approved. The number of Lots that exist as of the time of such ratified or approved assessment shall be the total number of Lots for purposes of apportioning assessments.

a. Annual Assessments. Simultaneously with notice of the annual meeting of the Association, the Board of Directors shall cause a proposed annual budget to be delivered to the Owners. The annual budget shall include the anticipated costs and expenses, for the 12-month period from January 1st through December 31st, of maintaining Blackthorne Lane, the costs of administration and enforcement of this Declaration, future reserves, and comprehensive policy(ies) of general liability insurance naming the Association as insured. The proposed annual budget (excluding any portion of the budget constituting a "**Special Assessment**," as described below), shall be deemed ratified and approved at the annual meeting, *unless such assessment is rejected at that time* by a vote of greater than two-thirds (2/3rds) of the membership who are voting in person or by proxy. Annual Assessments shall be established by the Board of Directors based upon the approved annual budget of the Association. If the proposed annual budget is not approved, then the annual budget last adopted shall remain in effect until an annual budget for the then-current year is approved.

b. Special Assessments. In addition to the annual assessments authorized above, the Association may levy, in any assessment year, a special assessment, applicable to that year only, for the purpose of defraying, in whole or in part, the cost of any construction, reconstruction or repair of Blackthorne Lane. Each member agrees to pay such additional special assessments as may be authorized. Any such special assessment shall have the approval of two-thirds (2/3rds) of the votes of the membership

who are voting in person or by proxy at a meeting duly called for the purpose of adopting such a Special Assessment.

5. Covenant to Pay Assessments. By joining in this Declaration, the Owners of each Lot, including any lot hereinafter lawfully created as provided herein, hereby covenants for themselves and their heirs and assigns (and each subsequent Owner of any Lot by acceptance of a deed to a Lot, whether or not it shall be so expressed in such deed) is deemed to covenant and agree to pay to the Association: (i) annual assessments, and (ii) special assessments as provided above. If any assessment is not paid on the date when due, such assessment together with interest, costs, and reasonable attorney fees incurred by the Association in any proceedings brought to collect such unpaid Assessments, shall be a charge on the land and shall be a continuing lien upon the Lot against which each such assessment is made. Any such lien may be enforced in any manner provided for the foreclosure of mortgages or liens under Maine law. Each such assessment, together with interest, costs, and reasonable attorney's fees, shall also be the personal obligation of the person who is the owner of record of such property at the time when the assessment fell due. The personal obligation for delinquent assessments shall not pass to the successors in title unless expressly assumed by them; provided that the lien for an unpaid assessment shall continue as an encumbrance on the title to such Lot.

Any assessment not paid within thirty (30) days after the due date shall bear interest from the due date at the rate of eighteen percent (18%) per annum. The Association may bring an action at law against the Owner personally obligated to pay the same, or foreclose the lien against the Lot for which the assessment was made. No Owner may waive or otherwise escape liability for any assessments provided tor herein by non-use of Blackthorne Lane or by abandonment of such owner's Lot.

The lien of the assessments provided for herein shall be subordinate to the lien of any mortgage having the first priority among all mortgages encumbering a Lot. Sale or transfer of any Lot shall not affect the assessment lien. However, the sale or transfer of any Lot pursuant to the foreclosure of a first priority mortgage shall extinguish the lien of such assessment as to payments which became due prior to such sale or transfer pursuant to such foreclosure. No sale or transfer, whether by foreclosure of a first priority mortgage or otherwise, shall relieve such Lot from liability for any assessments thereafter becoming due or from the lien thereof, nor shall any such sale or transfer relieve the Owner from his personal liability for such assessments

Failure by the Association, or by any owner, to enforce the above provisions shall in no event be deemed a waiver of the right to do so thereafter.

6. Maintenance. The upkeep and maintenance of Blackthorne Lane shall include the following minimum activities:

a. Blackthorne Lane shall be maintained all year-round in passable condition, including plowing, sanding, de-icing, grading or re-grading, and such other maintenance as may be deemed appropriate by the Board.

b. All ditching, culverts and similar storm water mechanisms shall be kept open and free for the flow of water in their "normally designed state" or in such condition as the Board may reasonably determine to be suitable for such purposes. Periodic resurfacing (in whole or part) of Blackthorne Lane shall be performed, as deemed appropriate by the Board. "Resurfacing" for the purposes hereof shall mean adding new or additional gravel or other suitable surface finishes to maintain compliance with Town ordinances and requirements for private roads such as Blackthorne Lane.

c. Washouts, pot-holes and other damage caused by erosion and/or ordinary wear and tear shall be promptly repaired, provided this shall not be construed to obligate the Association to repair any damage caused by an owner or that owner's invitees.

7. **Repairs; Maintenance.** Each owner shall repair or cause to be repaired, at his or her own expense, any damage caused by said owner, or by the owner's invitees, to the right of way which exceeds ordinary wear and tear occurring by residential purposes. Each owner shall be responsible for maintaining in a good and suitable condition the entrance drive area from the normal or customary travelled way within Blackthorne Lane into such Owner's lot, including without limitation drainage bars or pipes going over or under such driveway entrance. Only one entrance from Blackthorne Lane onto each Lot is allowed, and no such entrance shall exceed 20 feet in width. The Board may adopt, from time to time, other appropriate standards for such entrances, including location, size, and materials.

8. **Unobstructed Passage.** No Owner shall obstruct, hinder, or interfere or permit the obstruction, hindrance or interference with the free and uninterrupted use of the right of way for access by all members, and their families, tenants, or guests.

9. **Enforcement.** Without limiting any rights of the Association to seek enforcement in its own name, each Owner shall have the right to enforce this Agreement against any other member by legal or equitable action. Upon demand by any member, any disagreement as to the rights of any party under the agreement shall be submitted to binding arbitration in accordance with the current Rules of the American Arbitration Association.

10. **Amendment and Termination.** The covenants and restrictions of this Declaration shall run with and bind the land unless terminated by the affirmative vote of 75% of the votes in the Association. This Declaration may be amended by the affirmative vote of 75% of the votes in the Association by members entitled to cast a vote. Any duly adopted amendment of this Declaration shall be signed by at least 75% of the Lot Owners, and any such amendment may only take effect upon recording in the Cumberland County Registry of Deeds.

11. **Successors and Assigns.** This Agreement shall be binding upon and inure to the benefit of the undersigned and the respective successors in interest to the Lot(s) owned by the undersigned.

[Signature page follows. Remainder of page intentionally blank.]

In WITNESS WHEREOF, the undersigned parties have signed and sealed this instrument on November 9, 2022.

DECLARANT:

BLACKTHORNE LANE ROAD ASSOCIATION

By [redacted]
Leslie Lowry, President, duly authorized

State of Maine

County of Cumberland, ss

Personally appeared before me Leslie Lowry, President of the Blackthorne Lane Road Association, duly authorized, who acknowledged the foregoing instrument to be his free act and deed in said capacity and the free act and deed of Blackthorne Lane Road Association.

[redacted]
Notary Public / ~~Attorney At Law~~

AMANDA ST. PIERRE
Notary Public-Maine
My Commission Expires
August 27, 2029

Print Name: _____

My commission expires / Bar No.: _____

LOT OWNERS:

10 Blackthorne Lane (Map/Lot 53-43-2-3)

Adrian B. Miller

16 Blackthorne Lane (Map/Lot 53-43-2-4)

Stephen B. Redmond

Debora A. Redmond

20 Blackthorne Lane (Map/Lot 53-43-2-7)

Joshua D. Martell

Judith A. Martell

24 Blackthorne Lane (Map/Lot 53-43-2-8)

Bart R. Tobalske

Amy J. Tobalske

32 Blackthorne Lane (Map/Lot 53-43-2-9)

Patricia Distasio

Anthony Distasio

38 Blackthorne Lane (Map/Lot 53-43-2-10)
38 Blackthorne Lane, LLC

By: [redacted]
Anthony Fernandez, Member

[redacted]
Steven Trask, Member

00 Blackthorne Lane (Map/Lot 53-43-2-00)
38 Blackthorne Lane, LLC

By: [redacted]
Anthony Fernandez, Member

[redacted]
Steven Trask, Member

EXHIBIT D

BYLAWS OF BLACKTHORNE LANE ROAD ASSOCIATION

Article 1: Name and Objectives of Association

Section 1.1. Name. This association shall be known as Blackthorne Lane Road Association, hereinafter called the "Association".

Section 1.2. Objectives. The Association shall be obligated to maintain and repair the common access road which serves the Lot(s) described in the Blackthorne Lane Road Association Declaration dated _____, 2021 (the "Declaration"). The Declaration is to be recorded in the Cumberland County Registry of Deeds, and a copy of these Bylaws shall be attached to the Bylaws.

Article 2: Membership

Section 2.1. Membership. The membership of the Association shall be limited to Lot Owners, as such term is defined in the Declaration.

Section 2.2. Assessments. Each member shall pay to the Association the *assessments* as established by the Association, pursuant to the Declaration. The Association shall have a lien on the Lot of any defaulting member to secure the payment of such charges, interest, expenses, costs, and fees, which lien may be enforced in any manner provided for the foreclosure of mortgages or liens under Maine law.

Section 2.3. Vote. Each member may vote in person or by proxy at any meeting of the members; provided, however, that if two or more members have or hold common or joint ownership of any Lot, only one vote shall be cast for each Lot with common or joint ownership. The owner(s) of more than one Lot shall have one vote for each Lot. If the holders of a majority interest in any Lot cannot agree on how to cast the vote allocated to that Lot, then the vote shall not be cast. The designation of any proxy shall be made in writing to the Secretary of the Association, and shall be revocable at any time by written notice to the Secretary. So long as the rules of Quorum are met, and except as otherwise provided herein or in the Declaration, a vote of the Association shall pass if approved by a majority of those qualified (in person or by proxy) to vote at the time such vote is taken.

Article 3: Directors and Officers

Section 3.1. Board of Directors. The Board of Directors shall consist of three members, each of whom shall be a Lot owner, elected by majority vote at the annual meeting of the members of the Association. Directors shall serve for terms of two years, and the terms shall be staggered so that either one or two directors shall be elected at each annual meeting. Directors may not serve more than four consecutive terms. Co-owners of a Lot may both serve as directors.

Section 3.2. Officers. The officers of the Association shall consist of a President, Secretary, and Treasurer. The officers shall be elected annually from among the directors by majority vote of the Board of Directors at its first meeting following the annual meeting of members of the Association.

Section 3.3. Vacancies. If a vacancy occurs among the directors or officers, the Board of Directors shall fill said vacancy for the remainder of the term.

Section 3.4. Removal. Any director or officer may be removed from office if so voted by members of the Association entitled to cast at least three-fourths of the total number of votes in the Association.

Article 4: Meetings

Section 4.1. Annual Meeting of Members. The date of the annual meeting of members of the Association shall be established by the Board of Directors. Notice of the time and place of holding the annual meeting shall be mailed or emailed to each member not less than ten nor more than fifty days before the date of each annual meeting.

Section 4.2. Special Meeting of the Association. Special meetings of the Association members may be called by the President, two members of the Board of Directors, or upon request of four (4) members to the President made in writing. Notice of the meeting shall be mailed or emailed to each member not less than ten (10) nor more than fifty (50) days before the date of the meeting. At such special meeting there shall only be considered such business as is specified in the notice of meeting.

Section 4.3. Quorum for Meeting. At all meetings of the Association, either regular or special, the presence of members in good standing, in person or by proxy, entitled to cast more than one half of the total number of votes in the Association, shall constitute a quorum.

Section 4.4. Lack of Quorum. If a quorum is not present, the presiding officer may adjourn the meeting to a day and hour set by such officer. The members present at a duly called or held meeting at which a quorum was once present may continue to do business at the meeting notwithstanding the withdrawal of enough members to leave less than a quorum.

Section 4.5. Location. Meetings of the Association shall be in the Town of Gray in Cumberland County, Maine, and held at a suitable place convenient to the members and such place shall be specified in the notice of the meeting.

Article 5: Duties of Officers

Section 5.1. President. The President shall preside at all meetings of the Association.

Section 5.2. Secretary. The Secretary shall keep the minutes of all meetings of the Association and shall, if requested, read such minutes at the close of each meeting for approval. The Secretary shall mail out all notices for meetings of the Association.

Section 5.3. Treasurer. The Treasurer shall have charge of all receipts and monies of the Association, deposit them in the name of the Association in a bank approved by the Association, and disburse funds as ordered or authorized by the Association. The Treasurer shall keep regular accounts of all receipts and disbursements, submit the records when requested, and give an itemized statement at regular meetings of the Association. The Treasurer or the President may sign checks and withdrawal slips on behalf of the Association upon any and all of its bank accounts.

Section 5.4. Execution of Instruments. The President, together with either the Secretary or the Treasurer, shall, on being so directed by the Association, sign all leases, contracts, or other instruments in writing.

Article 6: Duties and Powers of the Board of Directors

Section 6.1. Management of Association. The Board of Directors of the Association shall have general charge and management of the affairs, funds, and property of the Association. The Board of Directors shall have the duty to prepare the annual budget of the Association; to appoint such committees as the Board of Directors deems advisable, and to fill any vacancies thereof; and otherwise carry out the purposes of the Association according to its Articles of Incorporation and these Bylaws.

Section 6.2. Assessments. The Board of Directors shall have the power to collect the Assessments which members are required to pay and to take such actions as they deem necessary to their collection. Generally, the annual budget for the Association shall be a calendar year, to wit, from January 1st through and including December 31st.

Section 6.3. Meetings. The Board of Directors, at their discretion, shall set times and days for meetings as agreed by a majority of the Board. There shall be no need for formal written notice of the meetings, but rather, it will be left to the President of the Association, who shall be the Chair of the Board of Directors, to schedule meetings of the Board when necessary. A majority of the Board of Directors shall constitute a quorum for conducting business. Any member of the Board of Directors may participate in any meeting thereof by conference telephone, provided that he may hear and be heard by all others participating in the meeting.

Article 7: Compensation of Officers

Neither the officers nor members serving on committees shall receive any salary or compensation for services rendered to the Association. Any person may be reimbursed for materials supplied or expenses incurred in the performance of services to the Association, at the discretion of the Board of Directors.

Article 8: Notices

All notices to members shall be mailed or emailed to their addresses as given on the books of the Association or the local real estate tax assessor, and such mailing or emailing shall constitute presumptive evidence of receipt thereof.

Article 9: Liability of Officers

The officers of the Association shall not be liable to the members of the Association for any mistake of judgment, negligence, or otherwise, except for their own individual willful misconduct or bad faith. The members of the Association shall indemnify and hold harmless each of the officers against all contractual liability to others arising out of contracts made by the officers on behalf of the Association unless any such contract shall have been made in bad faith or contrary to the provisions of the Articles of Incorporation or of these Bylaws. It is intended that the officers shall have no personal liability with respect to any contract made by them on behalf of the Association. It is also intended that any liability of any member of the Association arising out of any contract made by said officers either individually, pursuant to authority provided hereunder, or acting as a group in the form of a Board of Directors, or out of the aforesaid indemnity in favor of said officers, shall be limited to such proportion of

the total liability thereunder as said member's votes in the Association bear to the total number of votes in the Association.

Article 10: Business Records

The corporate business records of the Association shall at all times, during reasonable business hours, be subject to the inspection of any member in accordance with the Maine Non-profit Corporation Act.

Article 11: Parliamentary Rules

Roberts Rules of Order, as most recently revised, shall govern the conduct of the Association meetings when not in conflict with these Bylaws.

Article 12: Amendments

Section 12.1. Proposal. Amendments to these Bylaws may be proposed by a majority of members of the Association, whether meeting as members or by an instrument in writing signed by them.

Section 12.2. Adoption. Amendments to these Bylaws may be adopted only if so voted by members of the Association entitled to cast at least two-thirds of the total number of votes in the Association, provided that notice of the proposed amendment is given in the notice of the meeting.

END OF BYLAWS.

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

In Reply Refer To:
Project Code: 2023-0080128
Project Name: Blackthorne Lane

May 10, 2023

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 threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The 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 website 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/or 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 and/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

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

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 Code 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

Project Code: 2023-0080128
Project Name: Blackthorne Lane
Project Type: Mixed-Use Construction
Project Description: Proposed subdivision construction
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.8689871,-70.29208662942838,14z



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.

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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	Endangered

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.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	Terradyn Consultans, LLC
Name:	Amanda Robinson-Mullen
Address:	95 Main Street
Address Line 2:	Suite 201
City:	Auburn
State:	ME
Zip:	04210
Email	amanda@terradynconsultants.com
Phone:	2079464480

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207)289-3826

PROPERTY ADDRESS

Town Or Plantation: GRAY 47-2

Street Subdivision Lot #: 25 & 26 WOODS LANE OFF 115 Yarmouth Rd

PROPERTY OWNERS NAME

Last: RUBINSTEIN First: MARC

Applicant Name: MARC RUBINSTEIN

Mailing Address of Owner/Applicant (If Different): 30 WILLOW GROVE ROAD
BRUNSWICK, ME 04011

Caution: Permit Required

The Subsurface Wastewater Disposal System shall not be installed until a Permit is attached here by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.

Owner/Applicant Statement

I certify that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Local Plumbi

[redacted] 6/22/94
Signature of Owner/Applicant — Date

Caution: Inspection Required

I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules.

Local Plumbing Inspector Signature — Date Approved

PERMIT INFORMATION

THIS APPLICATION IS FOR:
1. ■ NEW SYSTEM
2. ☐ REPLACEMENT SYSTEM
3. ☐ EXPANDED SYSTEM
4. ☐ EXPERIMENTAL SYSTEM

SEASONAL CONVERSION
to be completed by the LPI
5. ☐ SYSTEM COMPLIES WITH RULES
6. ☐ CONNECTED TO SANITARY SEWER
7. ☐ SYSTEM INSTALLED – P# _____
8. ☐ SYSTEM DESIGN RECORDED AND ATTACHED

IF REPLACEMENT SYSTEM:
YEAR FAILING SYSTEM INSTALLED _____
THE FAILING SYSTEM IS:
1. ☐ BED 3. ☐ TRENCH
2. ☐ CHAMBER 4. ☐ OTHER: _____

SIZE OF PROPERTY: ± 33 AC.

ZONING: RR

THIS APPLICATION REQUIRES:
1. ■ NO RULE VARIANCE
2. ☐ NEW SYSTEM VARIANCE
Attach New System Variance Form
3. ☐ REPLACEMENT SYSTEM VARIANCE
Attach Replacement System Variance Form
a. ☐ Requiring Local Plumbing Inspector Approval
b. ☐ Requires State and Local Plumbing Inspector Approval
4. ☐ MINIMUM LOT SIZE VARIANCE

DISPOSAL SYSTEM TO SERVE:
1. ■ SINGLE FAMILY DWELLING
2. ☐ MODULAR OR MOBILE HOME
3. ☐ MULTIPLE FAMILY DWELLING
4. ☐ OTHER _____ SPECIFY

INSTALLATION IS:
COMPLETE SYSTEM
1. ■ NON-ENGINEERED SYSTEM
2. ☐ PRIMITIVE SYSTEM
(Includes Alternative Toilet)
3. ☐ ENGINEERED (+2000 gpd)
INDIVIDUALLY INSTALLED COMPONENTS:
4. ☐ TREATMENT TANK (ONLY)
5. ☐ HOLDING TANK _____ GAL
6. ☐ ALTERNATIVE TOILET (ONLY)
7. ☐ NON-ENGINEERED DISPOSAL AREA (ONLY)
8. ☐ ENGINEERED DISPOSAL AREA (ONLY)
9. ☐ SEPARATED LAUNDRY SYSTEM

TYPE OF WATER SUPPLY: PROPOSED DRILLED WELL

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

TREATMENT TANK
1. ■ SEPTIC: ■ Regular ☐ Low Profile
2. ☐ AEROBIC
SIZE: 1000 GALS.

WATER CONSERVATION
1. ■ NONE
2. ☐ LOW VOLUME TOILET
3. ☐ SEPARATED LAUNDRY SYSTEM
4. ☐ ALTERNATIVE TOILET
SPECIFY: _____

PUMPING
1. ☐ NOT REQUIRED
2. ☐ MAY BE REQUIRED
(DEPENDING ON TREATMENT TANK LOCATION AND ELEVATION)
3. ■ REQUIRED
DOSE: 75-150 GALS.

CRITERIA USED FOR DESIGN FLOW (BEDROOMS, SEATING, EMPLOYEES, WATER RECORDS, ETC.)
3 BEDROOMS
WITH MINIMUM
THEORETICAL
DESIGN FLOW

SOIL CONDITIONS USED FOR DESIGN PURPOSES

PROFILE	CONDITION
3	ATII

DEPTH TO LIMITING FACTOR: 16

SIZE RATINGS USED FOR DESIGN PURPOSES
1. ☐ SMALL
2. ☐ MEDIUM
3. ■ MEDIUM-LARGE
4. ☐ LARGE
5. ☐ EXTRA LARGE

DISPOSAL AREA TYPE/SIZE
1. ■ BED 1000 Sq. Ft.
2. ☐ CHAMBER _____ Sq. Ft.
☐ REGULAR ☐ H-20
3. ☐ TRENCH _____ Linear Ft.
4. ☐ OTHER: _____

DESIGN FLOW: 270 (GALLONS/DAY)

SITE EVALUATOR STATEMENT

On January 12, 1994 (date) I conducted a site evaluation for this project and certify that the data reported is accurate. The system I propose is in accordance with the Subsurface Wastewater Disposal Rules.

[redacted] — Site Evaluator Signature

5216 — SE#

2/2/94 — Date

(Local Plumbing Inspector's Signature if permit is for Seasonal Conversion.)

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering

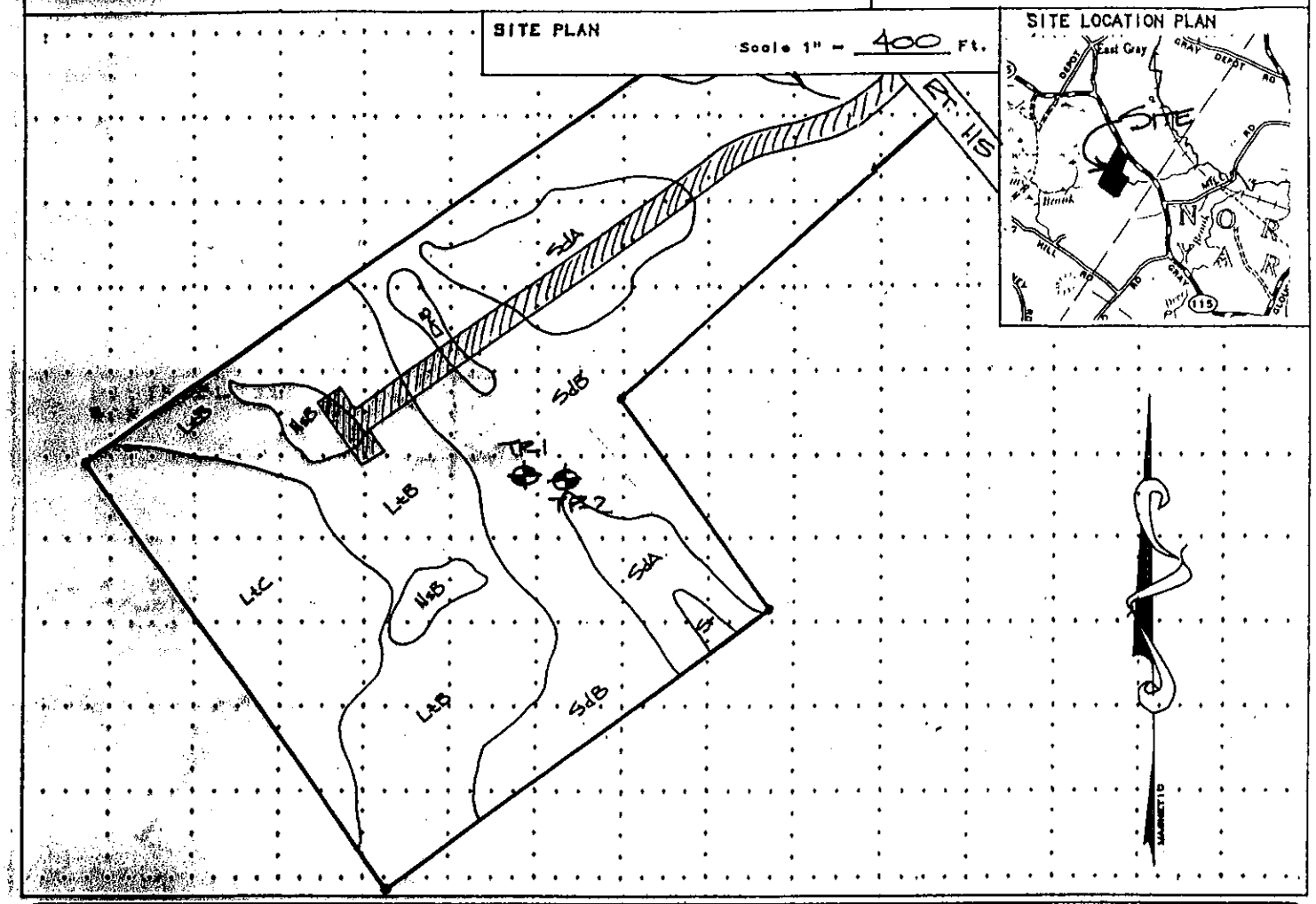
Town, City, Plantation: GRAY

Street, Road, Subdivision: WOODS LANE OFF 115

Owners Name: MARC RUBINSTEIN

SITE PLAN

Scale 1" = 400 Ft.



SITE LOCATION PLAN

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

Observation Hole TP-1 ■ Test Pit ☐ Boring

0 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (Inches)	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FROZEN FRIABLE	REDDISH BROWN	
10	GRAVELLY VERY SANDY LOAM	FRIABLE	DARK YELLOW BROWN	
20	LOAMY GRAV. SAND	SOMEWHAT FIRM	LIGHT OLIVE BROWN	FAINT & FEW
30	BEDROCK			
40				
50				

Soil Classification		Slope	Limiting Factor	
3 Profile	A III Condition	0-2 %	16	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Observation Hole TP-2 ■ Test Pit ☐ Boring

0 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (Inches)	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FROZEN FRIABLE	DARK GRAY BROWN	
10	GRAVELLY VERY SANDY LOAM	FRIABLE	REDDISH BROWN	NONE OBSERVED
20	BEDROCK			
30				
40				
50				

Soil Classification		Slope	Limiting Factor	
3 Profile	A III Condition	0-2 %	18	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

[redacted]
Site Evaluator Signature

5216
SE#

2/2/94
Date

PAUL W. LAWRENCE * P.O. BOX 369 WINDHAM, ME 04062 * (207)892-2175

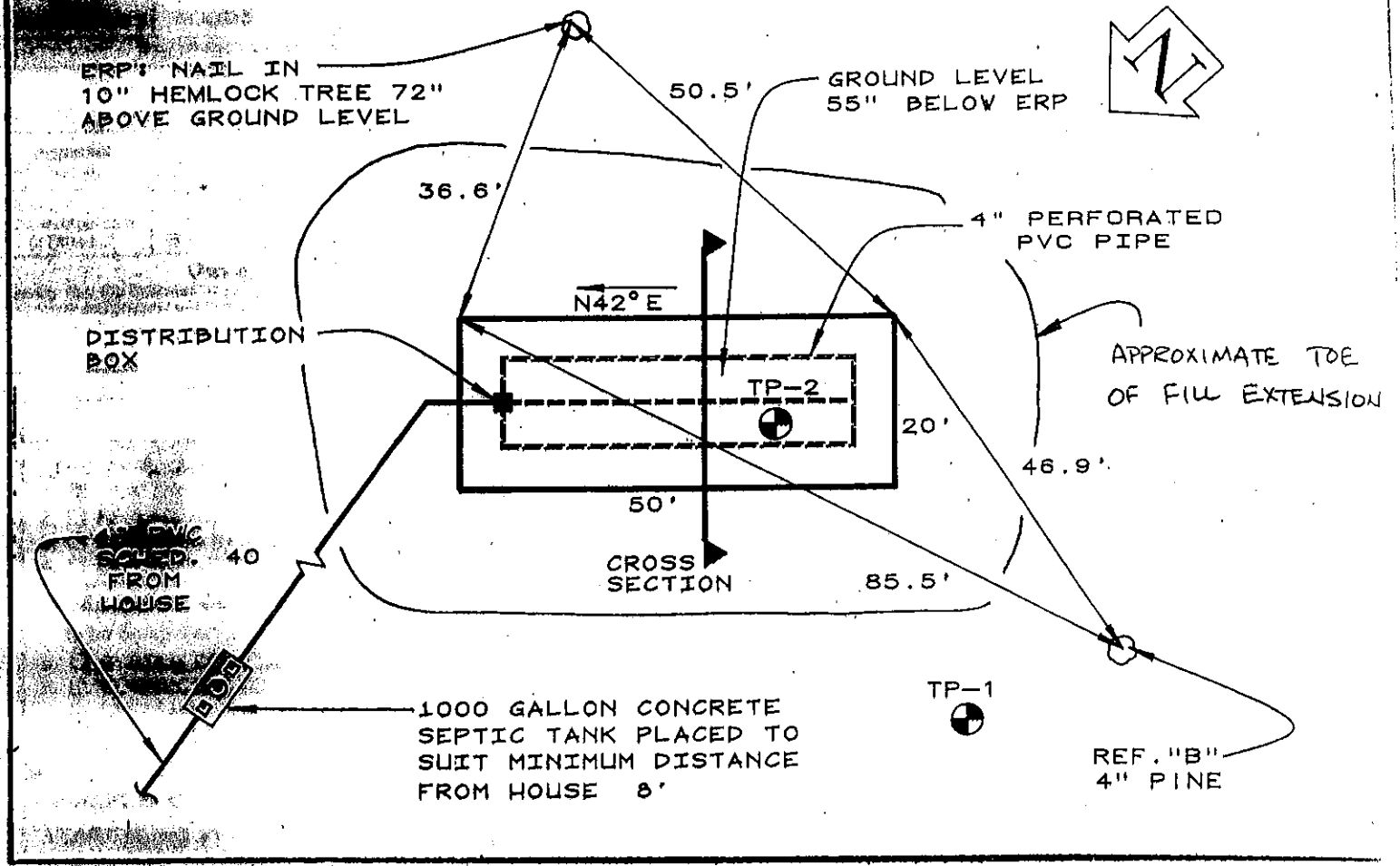
SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Division of Health Engineering

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
GRAY	WOODS LANE OFF 115	MARC RUBINSTEIN

SUBSURFACE WASTEWATER DISPOSAL PLAN

SCALE 1" = 20 FT.

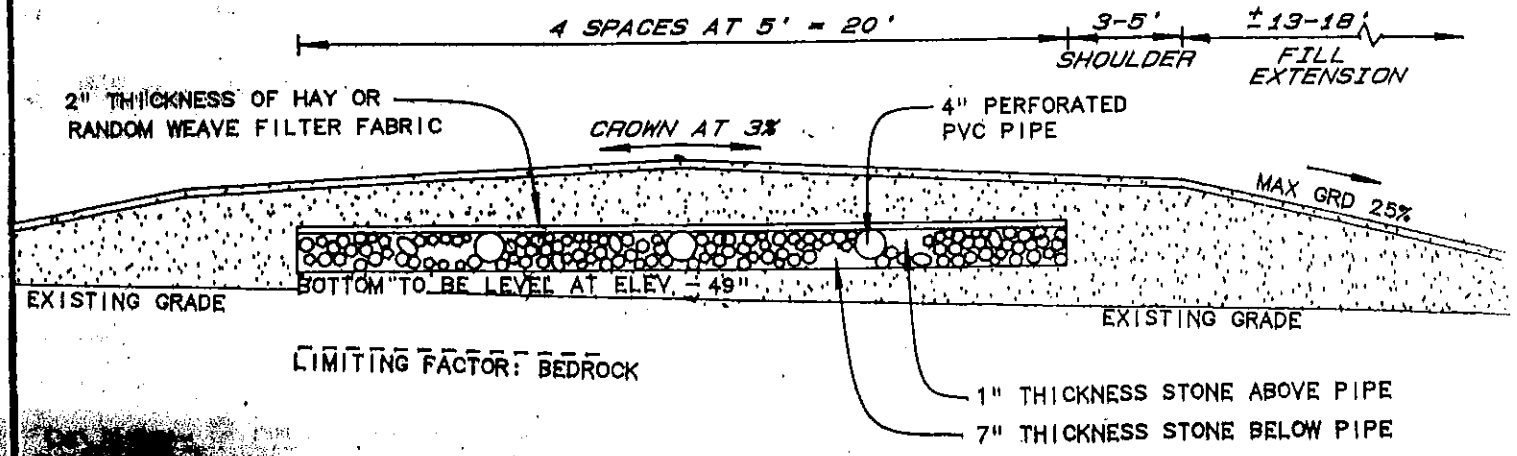


FILL REQUIREMENTS		CONSTRUCTION ELEVATIONS		ELEVATION REFERENCE POINT LOCATION & DESCRIPTION
Depth of Fill (Upslope)	±35-40"	Reference Elevation is	0"	
Depth of Fill (Downslope)	±29"	Bottom of Disposal Area	-49"	NAIL IN 10" HEMLOCK TREE
		Top of Distribution Lines or Chambers	-38"	72" ABOVE GROUND LEVEL

DISPOSAL AREA CROSS SECTION

SCALE:
VERTICAL: 1" = 5 FT.
HORIZONTAL: 1" = 5 FT.

NOTES:
* STONE TO BE ± 1 1/2" FREE OF FINES AND ORGANIC DEBRIS
* FILL TO BE LOAMY SAND FREE OF FINES & ORGANIC DEBRIS
* FINAL GRADES SHALL BE LOAMED AND SEEDED TO PREVENT EROSION



[redacted]
Site Evaluator Signature

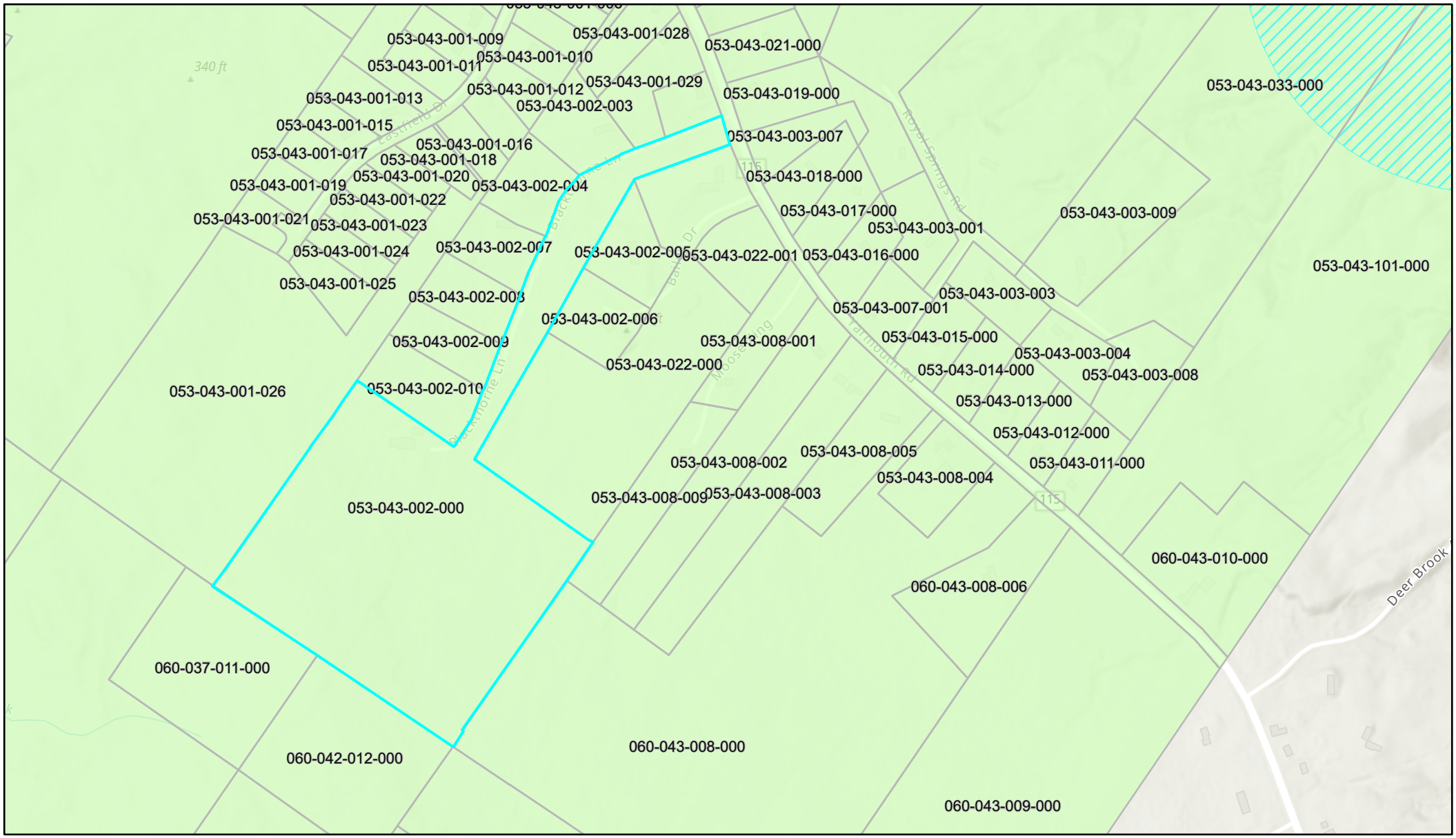
5216
SE#

2/2/94
Date

Page 3 of 3
HHE-200 R...

PAUL W. LAWRENCE * P.O. BOX 369 WINDHAM, ME 04062 * (207)892-2175

Town of Gray Parcels



4/21/2023, 10:08:16 AM

Tax Parcels (2022)

Gray Zoning Overlay

DEPWell

General Zoning

Wellhead Protection-1

Rural Residential and Agricultural

1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

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Town of Gray

contact your insurance agent, or call th
Program at (800) 638-6620.

APPROXIMATE S
1000 0

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

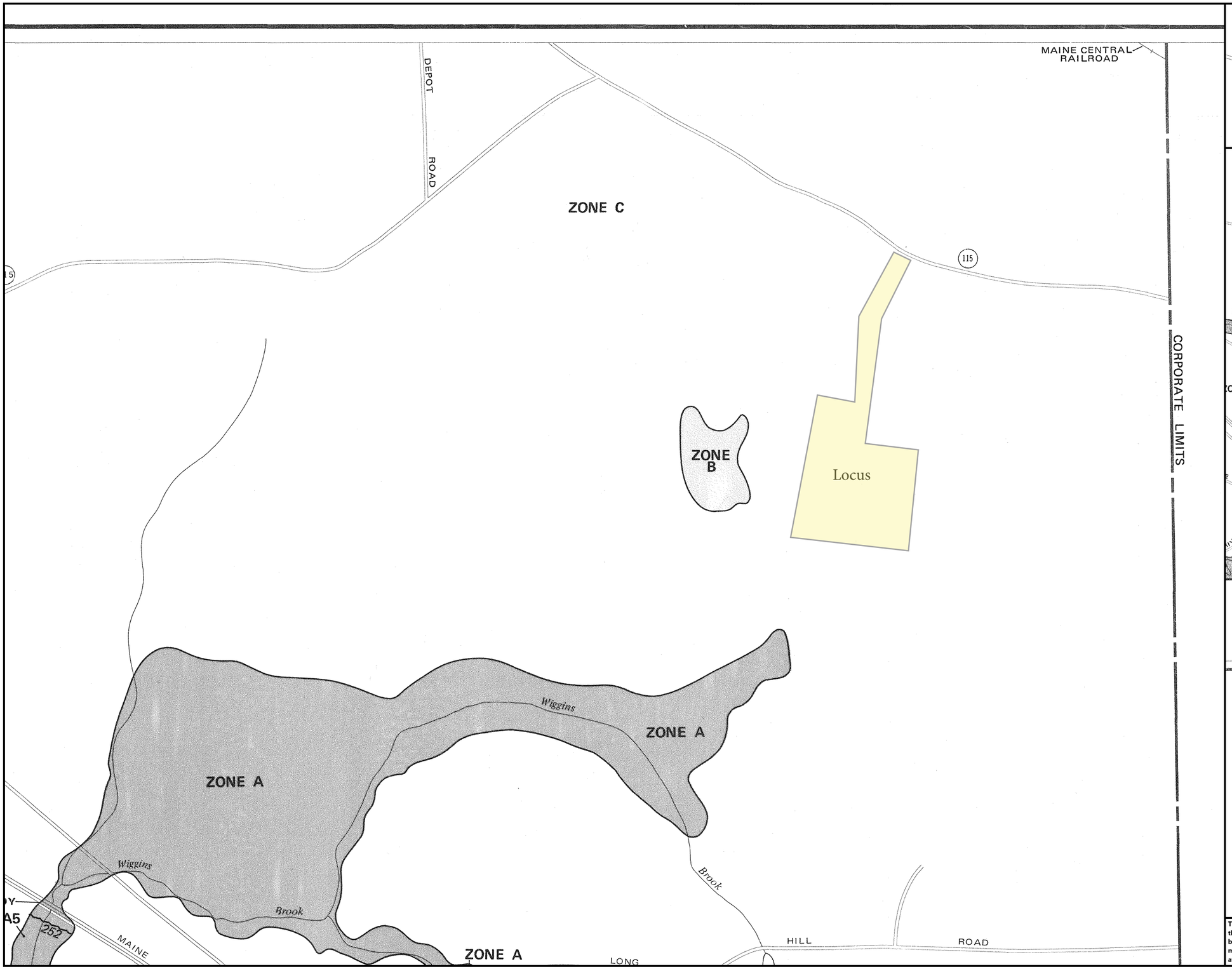
TOWN OF
GRAY, MAINE
CUMBERLAND COUNTY

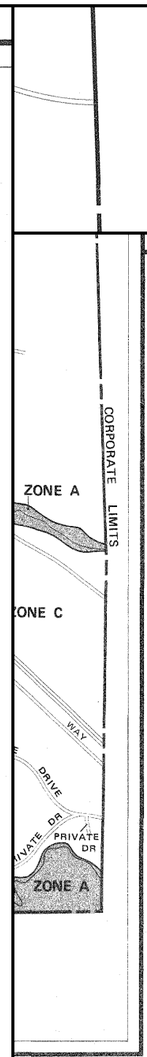
PANEL 15 OF 15
(SEE MAP INDEX FOR PANELS NOT PRINTED)

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.

Town Comprehensive Plan Map

Page 24 of Comprehensive Plan Dated September 15, 2020

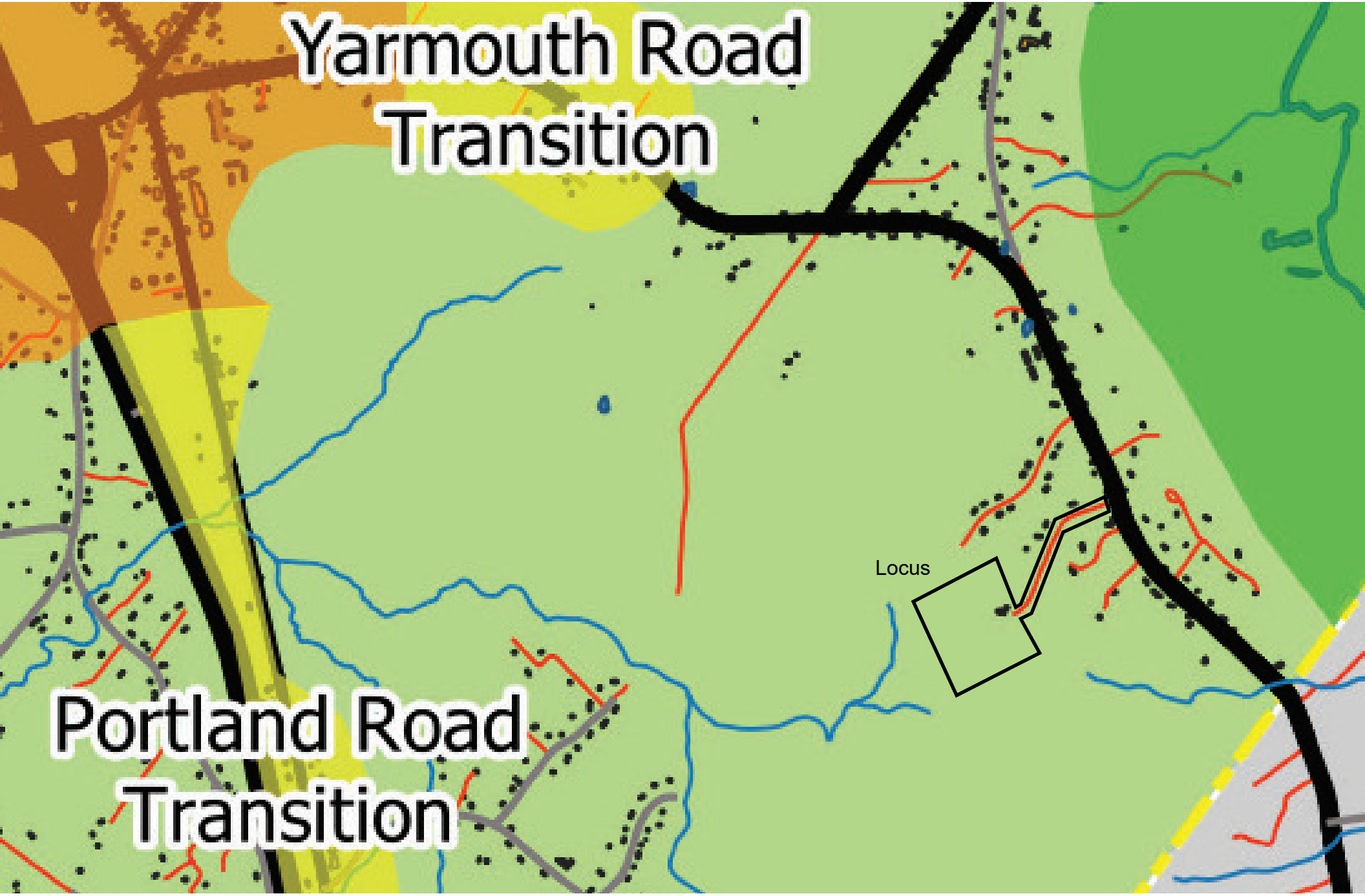


Exhibit A

Surveyor's Certification

To the best of my knowledge, I have used ordinary and prudent conduct expected of Professional Land Surveyors and the results shown here represent the licensee's responsibility to the public as required under the Standards of Practice as defined by the Board of Licensure for Professional Land Surveyors (M.R.S.A Title 32, Chapter 141, Dated April 2001).

Except as Follows:

1. Survey Report Limited to Notes on the Plan

2. No Deed Description to Date

Plan Prepared by: _____

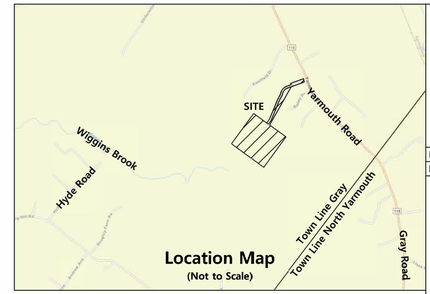
Jimmy C. Courbron PLS # 2532

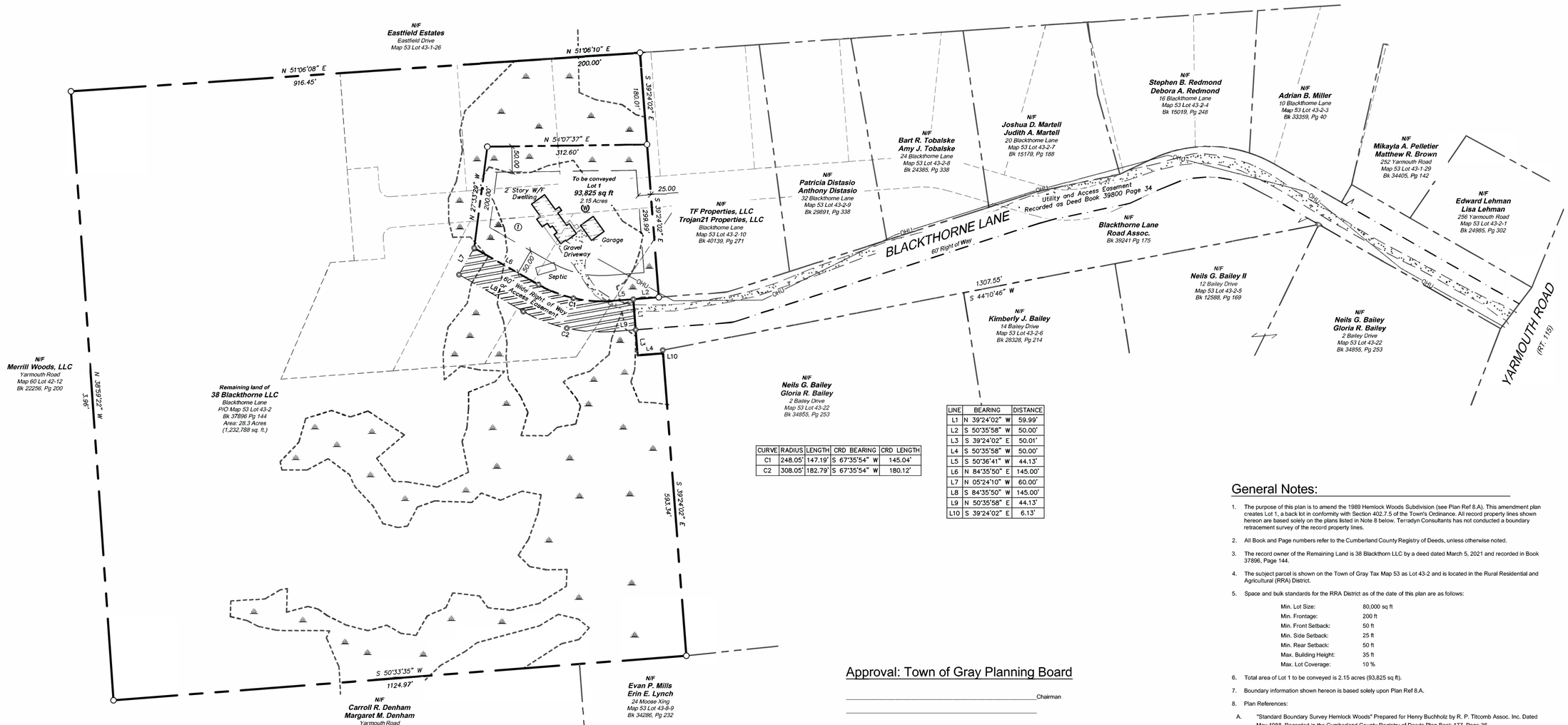
Legend:

- Record Property Line/R.O.W.
- Proposed Lot Line/R.O.W.
- Lines per Plan Ref. 8A
- Abutter Line/R.O.W.
- Building
- Building Overhang
- Deck/Steps
- Building Setback Line
- Easement Line
- 5/8" Rebar (TERRADYN PLS 2532)
- Monument (4" X 4" X 48" Granite w/ Drillhole)
- Iron Marker (per Plan Ref. 8.B)
- Wetlands
- Edge of Wetland

PLAN REF 8A

MAG NORTH





CURVE	RADIUS	LENGTH	CRD BEARING	CRD LENGTH
C1	248.05'	147.19'	S 67°35'54" W	145.04'
C2	308.05'	182.79'	S 67°35'54" W	180.12'

LINE	BEARING	DISTANCE
L1	N 39°24'02" W	59.99'
L2	S 50°35'58" W	50.00'
L3	S 39°24'02" E	50.01'
L4	S 50°35'58" W	50.00'
L5	S 50°36'41" W	44.13'
L6	N 84°35'50" E	145.00'
L7	N 05°24'10" W	60.00'
L8	S 84°35'50" W	145.00'
L9	N 50°35'58" E	44.13'
L10	S 39°24'02" E	6.13'

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 INCH = 100 FT.

Approval: Town of Gray Planning Board

_____Chairman

_____

_____

_____

_____

_____

_____Date

General Notes:

1. The purpose of this plan is to amend the 1989 Hemlock Woods Subdivision (see Plan Ref 8.A). This amendment plan creates Lot 1, a back lot in conformity with Section 402.7.5 of the Town's Ordinance. All record property lines shown hereon are based solely on the plans listed in Note 8 below. Terradyn Consultants has not conducted a boundary retracement survey of the record property lines.
2. All Book and Page numbers refer to the Cumberland County Registry of Deeds, unless otherwise noted.
3. The record owner of the Remaining Land is 38 Blackthorn LLC by a deed dated March 5, 2021 and recorded in Book 37896, Page 144.
4. The subject parcel is shown on the Town of Gray Tax Map 53 as Lot 43-2 and is located in the Rural Residential and Agricultural (RRA) District.
5. Space and bulk standards for the RRA District as of the date of this plan are as follows:

Min. Lot Size:	80,000 sq ft
Min. Frontage:	200 ft
Min. Front Setback:	50 ft
Min. Side Setback:	25 ft
Min. Rear Setback:	50 ft
Max. Building Height:	35 ft
Max. Lot Coverage:	10 %

6. Total area of Lot 1 to be conveyed is 2.15 acres (93,825 sq ft).
7. Boundary information shown hereon is based solely upon Plan Ref 8.A.
8. Plan References:
   - A. "Standard Boundary Survey Hemlock Woods" Prepared for Henry Buchholz by R. P. Titcomb Assoc. Inc. Dated May 1988. Recorded in the Cumberland County Registry of Deeds Plan Book 177, Page 36.
   - B. "Survey Plan of Land of U.S. Bank National Association, as Trustee 38 Blackthorne Lane" Prepared for U.S. National Association by Sitelines, PA. Dated September 2016.
9. Plan orientation is Magnetic North, based on Plan Ref. 8.A. Elevations depicted hereon are NAVD88, based on dual-frequency GPS observations.
10. A portion of the subject parcel is located within Zone C, Areas of Minimal Flood Hazard as delineated on the Flood Insurance Rate Map for the Town of Gray, Cumberland County, Community-Panel Number 2300480015A, having an Effective Date of Jan 6, 1982.
11. A wetland delineation was performed on the remaining land and Lot 7 by Mark Hampton Associates, Inc. in April 2022. This wetlands delineation conforms to the standards and methods outlined in the 1987 Wetland Delineation Manual and Northeast Regional Supplement authored and published by the U.S. Army Corps of Engineers. All Wetland flags were located using Global Positioning System (GPS) technology capable of decimeter accuracy.
12. The depth, size, location, existence or nonexistence of underground utilities and/or structures were not investigated as part of this survey. Utilities depicted hereon may not necessarily represent all existing utilities. Owners, contractors, and/or designers need to contact Dig-Safe Systems, Inc. (call 811) and field verify existing utilities prior to digging or breaking ground.
13. The issuance of a building permit for a single family dwelling on a back lot shall in no way be construed to imply the acceptance of any access way for the purpose of maintenance, improvements or snow removal by the Town of Gray.
14. Record of the 60' wide Right of Way or Access Easement depicted hereon shall be recorded as part of the deed of the Lot 1.
15. Fee ownership of the Right of Way or Access Easement will remain with the Grantor.
16. Developer anticipates development of Remaining Land pursuant of Town Ordinance and shall reserve a minimum of 8 acres of the Remaining Land as open space.

STATE OF MAINE, Cumberland County, SS
REGISTRY OF DEEDS

Received _____

At ____ h ____ m ____M and recorded in

Plan Book _____, Page _____

Attest _____
Registrar

STATE OF MAINE
JIMMY C. COURBRON
No. PLS2532
PROFESSIONAL LAND SURVEYOR

DATE: DATE
PLS: PLS

NO.	DATE	REVISIONS
1	08/03/2023	ISSUED TO ATTORNEY FOR REVIEW
2	08/15/2023	ISSUED FOR PLANNING BOARD REVIEW

ADDRESS: 41 CAMPUS DRIVE, SUITE 301, NEW GLOUCESTER, ME 04260
PHONE: (207) 926-5111
WEB SITE: www.terradynconsultants.com

TERRADYN CONSULTANTS, LLC
Civil Engineering | Land Surveying | Geomatics
Stormwater Design | Land Planning | Environmental Permitting

PROJECT: Hemlock Woods
BLACKTHORNE LANE, GRAY, MAINE

SHEET TITLE: 1st Amended Subd vision Plan

FOR RECORD OWNER: TONY FERNANDEZ
PO BOX 989
GORHAM, ME 04038

DATE: 08/15/2023
SCALE: 1"= 100'
JOB NO: 22-82
SHEET: 1 OF 1

C:\2021Terradyn Consultants\Project Folders - Documents\2022 Jobs\22-82 Blackthorne Lane\2405Survey\22-82.dwg

Sheet Size: 24" X 36"

N/F
ALWIN H. & MARY SANDRA GROVER
4497/240

N/F
ROBERT S. & GALE M. BLANCHARD
4694/82

N/F
TIMOTHY C. & ELLEN G. SANBORN
4907/201

N/F
SUZANNE K. VINCENT
4898/232

N/F
TIMOTHY J. & DEBRA A. GRANT
6231/281

N/F
NEILS G. & GLORIA R. BAILEY
3392/167
4011/266
4692/1

N/F
PRISCILLA E. LIBBEY
6699/155

N/F
MARY M. TAYLOR
5324/140

N/F
ALWIN H. & MARY SANDRA GROVER
4497/240

LAND TO BE CONVEYED TO ABUTTER
20,335 sq. ft.
0.47 acres

WOODS LANE

ROUTE 115 - 49.50' WIDE ROW

SEPTIC EASEMENT

LOT-4 AREA= 53,343 sq. ft. 1.22 acres
LOT-5 AREA= 45645.31 sq. ft. 1.05 acres
LOT-6 AREA= 47,782.06 sq. ft. 1.10 acres
LOT-7 AREA= 44932.79 sq. ft. 1.03 acres
LOT-8 AREA= 44,386.46 sq. ft. 1.02 acres
LOT-9 AREA= 42,780.83 sq. ft. 0.98 acres
LOT-10 AREA= 41,881.40 sq. ft. 0.96 acres
LOT-11 AREA= 53,521 sq. ft. 1.23 acres
LOT-12 AREA= 48,509 sq. ft. 1.11 acres
LOT-13 AREA= 49,679 sq. ft. 1.23 acres
LOT-14 AREA= 54,429 sq. ft. 1.25 acres
LOT-1 AREA= 59,136 sq. ft. 1.36 acres
LOT-2 AREA= 59,554 sq. ft. 1.37 acres
LOT-3 AREA= 59,425 sq. ft. 1.36 acres

COMMON AREA
(UNDER CONSERVATION EASEMENT)
(206,979 sq. ft.
27.71 acres

3/4" hollow
remains of
Old Wood Post

3"X 8" granite monument

3/4" hollow
crimped top

1-1/2" hollow

5/8" rebar

3/4" solid

1/2" solid

40' BUFFER STRIP

5' BUFFER STRIP

50' R/W SOCONY VACUUM OIL COMPANY
20' R/W NORTHERN UTILITIES INC.

CURVE TABLE

CURVE	ARC LENGTH	DELTA	RADIUS	TANGENT	CHORD
C1	29.37	07°-19'-01"	230.00	14.71	29.35
C2	32.72	11°-10'-09"	230.00	16.39	32.69
C3	120.96	41°-24'-39"	170.00	63.28	118.40
C4	99.58	25°-36'-39"	260.00	50.61	98.77
C5	180.00	33°-03'-58"	312.00	92.73	177.54
C6	191.39	58°-07'-00"	190.00	104.11	183.20
C7	166.35	41°-24'-39"	230.00	86.93	162.75
C8	52.33	30°-30'-00"	170.00	26.74	52.10
C9	82.99	30°-30'-00"	260.00	42.58	82.68
C10	139.96	41°-24'-39"	170.00	73.36	135.90
C11	246.98	56°-30'-00"	250.00	134.98	237.11
C12	31.42	90°-00'-00"	20.00	20.00	28.28
C13	31.42	90°-00'-00"	20.00	20.00	28.28

BEARING TABLE

LINE	DISTANCE	BEARING
L1	40.00'	N 39°-23'-34" W
L2	40.00'	N 39°-23'-34" W
L3	60.00	S 50°-36'-26" W

AREA

LOTS = 16.16 acres		704,166 sq. ft.
ROAD = 3.81 acres		16,278 sq. ft.
TOTAL AREA TO BE DEVELOPED	= 19.97 acres	870,147 sq. ft.
LAND TO BE CONVEYED TO ABUTTER	= 0.47 acres	20,335 sq. ft.
COMMON AREA (Under Conservation Easement)	= 27.71 acres	1,206,979 sq. ft.
TOTAL AREA	= 48.15 acres	2,097,461 sq. ft.

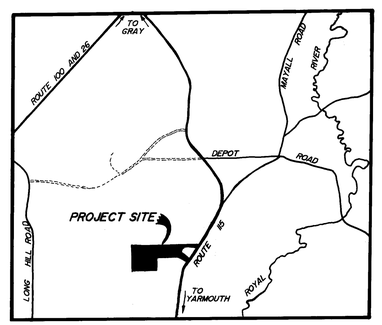
Approved by the Town of Gray
Planning Board: Dated 2-23-89

[redacted]

LEGEND

- MONUMENT TO BE SET (4" x 4" GRANITE)
- IRON PIN FOUND (1/2" hollow pipe, unless noted)
- IRON PIN TO BE SET (5/8" rebar)
- N/F NOW OR FORMERLY OF
- UTILITY POLE
- EDGE OF PAVEMENT
- EXISTING BUILDING
- STONE WALL
- HYDRANT
- EXISTING TREE LINE
- OWNER'S PROPERTY LINE
- ABUTTER'S PROPERTY LINE
- CONIFEROUS TREE
- CONCRETE MONUMENT FOUND
- PROPOSED SEPTIC EASEMENT BOUNDARY

1 INCH = 100 FEET
100 0 100 200 300



LOCATION MAP
N.T.S.

Old Wood Post

REFERENCE

(1) SUBDIVISION PLAN FOR JOHN D. AND BONNIE J. PALMITER BY JOHN D. PALMITER DATED OCTOBER 1984 AS RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 145, PAGE 70.

NOTES

(1) BEARINGS ARE REFERENCED TO MAGNETIC NORTH 1984.

(2) ROUTE 115 IS ASSUMED TO BE A 3 ROD ROAD.

(3) THIS SUBDIVISION COMPLIES WITH SECTION 402.12 PLANNED UNIT DEVELOPMENT.

(4) NO DRIVEWAY ACCESS WILL BE PERMITTED FROM THE HAMMERHEAD PORTION OF THE ROADWAY.

OWNER OF RECORD

HENRY R. & PATRICIA A. BUCHHOLZ
ALBERT R. & MABEL E. POHLMAN
EDMOND A. MARSHALL
GEORGENE S. MARSHALL
STEVEN A. BUCHHOLZ
~~4867/101~~
8096/79

State of Maine, Cumberland ss.
Register of Deeds
Received February 24, 1989
at 9 h 20 m. A.M. and recorded in
Plan Book [redacted]
Attest: [redacted]

This survey conforms to category I condition III as defined by the Standards of the Maine State Board of Registration for Land Surveyors dated 1985. Except as noted.

Exceptions:
(1) No Report
(2) No Description
(3)

DAVID E. TITCOMB R.L.S. 1273

CHECKED BY _____

[redacted]

-- STANDARD BOUNDARY SURVEY --

HEMLOCK WOODS

Woods Lane Gray, Maine

made for

Henry Buchholz

Stoney Ridge Road Cumberland, Maine

Job 87079 Book 362 File 4740 Disc 166

May 12, 1988

A. P. TITCOMB ASSOCIATES, INC.
LAND SURVEYORS / ENGINEERS
50 Gray Road, Falmouth, Maine

REV.2 REVISED 2/09/89
REV.1 REVISED 7/28/88

DM ROMA
CONSULTING ENGINEERS

September 21, 2023

Town of Gray Planning Board
c/o Kristen Muszynski, Town Planner
Henry Pennell Municipal Complex
24 Main St, Gray, ME 04039

Re: Cambell Acres – Amended Subdivision – Preliminary Major Subdivision Application
Planning Department and Town Engineer review comment response
McDonnell Brothers Custom Builders, LLC. – Owner/Applicant

Dear Ms. Muszynski:

On behalf of McDonnell Brothers Custom Builders, LLC., DM Roma Consulting Engineers has revised the project plan set for the proposed residential subdivision project located off Jenny Drive, proposing the development of a residential subdivision with three proposed lots. The revisions were prepared to address concerns and comments that we have received to date from the Town Staff, Town's Review Engineer, and abutters.

This letter is intended to clarify and highlight the changes that were made to the project design as shown on the revised plan set, as well as to provide a response to the comments received to date. The following is a list of comments and followed by our response:

Town Staff comments:

- The applicant needs to add a streetlight at the end of the dead end, per 401.13.15. C.4.
    - Based on discussion at the September Planning Board meeting, a waiver request to not require a streetlight for the project is being provided with this letter.

- The Lot 1 driveway location off the end of the road may impact plowing and also crosses the property of Lot 2, which would require an easement that is not currently noted on the plan. Having the driveway directly off the end of the road is inadvisable for plowing purposes.
    - Based on the revised project design, the project applicants and future homeowners' association will not be requesting the proposed subdivision road be accepted as a public road, and will not be requesting the proposed subdivision road be considered for public winter maintenance. As noted in the Planner's memo dated August 30, 2023, the proposed road section design is a modified from the minor rural street standard to include an 18' of pavement section with 1' gravel shoulders on each side (for a total road section width of 20'), which will not meet the standard for consideration as a rural public easement street.

The project design and plans have been revised to include labels identifying the proposed access and utility easement for the benefit of Lot 1, and includes the location of proposed snow storage.

- The plan is now showing the well exclusion zones and the proposed well and septic locations for each lot. We suggest that the exclusion zone should be shown as a combined area, rather than three separate 100' circles. Additionally, staff suggest that the applicant show the well location on the abutting Foster lot to assist in review of the impact of the Lot 1 and 2 septic system proposed locations. (Also see #8 regarding the hydrogeologic assessment.)
    - The project plans have been revised to show the well exclusion zone as advised. The plans also now include the approximate location of the existing residence and well on the abutting property owned by the Foster's. The hydrogeologic waiver request is no longer being requested and the applicant intends to provide HHE-200's as well as hydrogeologic assessment for the proposed project design.

- Prior to final approval, the applicant should submit details and profiles of the driveways to each lot to allow G-P to confirm that they meet the standards in the Street Ordinance, Chapter 400 Section 5.
    - The driveway design for Lot 2 and Lot 3 has been revised to provide a maximum 6% grade from the proposed subdivision road for a minimum of 30 feet. The revised plan and profile sheet now includes spot grades to verify the driveway meets the requirements of new driveways in accordance with the Chapter 400 Street Ordinance Section 5.4, Table 5.1.

- The road is proposed at a 12% grade in some sections, which is the maximum grade allowable for a minor rural street, as the road is less than 500' in length. Due to the steepness, the applicant was advised that a gravel road would likely experience wash-out issues. The applicant has since agreed to paving the road, with 18' of paving and 1' gravel shoulders on either side. The road standard, per 401.13.16-2 is 16' of roadway and 2' shoulders, all gravel. The applicant has advised that they intend for the homeowner's association to arrange for winter maintenance of the road and thus do not intend to build it to rural public easement street standards (which would make the road eligible for consideration of town winter maintenance). The fire chief has advised that he needs 20' width for fire equipment.
    - Planner's comment is correct, and the proposed road section will provide a minimum 20' section as noted in the response to the second comment above.

- Regarding the waivers: The applicant is requesting waivers from the requirements for the hydrogeologic and high-intensity soil waivers, as well as the requirement for concrete/granite property markers.
    - The waiver request letter included with this letter. As previously mentioned above the applicant is requesting an additional waiver for the requirement for a street light, and hydrogeologic waiver request is no longer being requested as the

applicant intends to provide HHE-200's as well as hydrogeologic assessment for the proposed project design.

- The subdivision plan notes that the buildings will be equipped with sprinklers, but retains the option to install cisterns instead, though the plan does not show a potential cistern site. (Note 16). Does the board want to request additional information from the applicant to review a potential cistern location as part of this approval process, or require that the fire protection decision be formalized at this stage, or before final approval?
    - The revised amended subdivision plan has been revised to require only fire sprinklers be installed and eliminated the option of alternately installing a fire cistern.

Town's Review Engineer comments:

- Add the proposed culvert at approx. station 3+75 to roadway profile.
    - The plan and profile sheet has been revised accordingly.
- Provide easement for underground utilities and driveway to Lot 1 over Lot 2.
    - The amended subdivision plan has been revised accordingly.
- Provide rip rap inlet and outlet apron for detention basin outlet pipe.
    - The project design has been revised accordingly, and is illustrated on the revised plan and profile sheet.
- Provide trash rack for 8" diameter pond outlet pipe. An 8" pipe will clog easily with leaves, etc. consider using a different outlet configuration.
    - The project design has been revised accordingly, and a note was added on the revised plan and profile sheet, as well as the in the detail on Detail sheet D-2.
- Provide 25-year flow calculation for roadway ditch flows. We recommend more than one check dam on each side for reducing the flow velocities for the section from station 0+00 to 1+50.
    - Flow calculation is included in the revised stormwater management report and out of the abundance of caution we have elected to construct the proposed road swales with rip rap armoring through the sections of road that are steep. The plan and profile sheet has been revised to illustrate the location of rip rap swale.
- Show rip rap outlet apron on the plan view for the 15" stormdrain at the detention pond.
    - The plan and profile sheet has been revised accordingly.
- Provide 50-year analysis for the roadway culvert at 3+75 +/-.
    - 50-year HydroCAD output for all proposed culverts provided in revised stormwater report.
- Due to the revised layout, modify subcatchments 2 and 22 in the stormwater calculations to reflect the proposed condition.
    - Revised stormwater watershed map and HydroCAD model accordingly.

Additionally, the Town Planner has provided the copies of various letters submitted to the Town from abutters, which we have reviewed. We feel our plan revisions and responses have taken into consideration the pertinent aspects of the concerns raised in the letters.

Enclosed with this submission is the revised supporting documentation and design plans for your review. Upon your review of the submission, please do not hesitate to contact me if you have any questions or require any additional information.

Sincerely,

DM ROMA CONSULTING ENGINEERS

[redacted]

J.P. Connolly
Senior Project Engineer

Cc: McDonnell Brothers Custom Builders, LLC.

DM ROMA
CONSULTING ENGINEERS

STORMWATER MANAGEMENT REPORT

CAMBELL ACRES AMENDED SUBDIVISION
JENNY DRIVE & LIEUTENANTS DRIVE
GRAY, MAINE

A. Narrative

McDonnell Brothers Custom Builders, LLC, the applicant, is proposing to develop a 7.12±-acre parcel off of Jenny Drive in Gray, Maine. The project site is identified as Lot 17-28-03 on the "Amended Subdivision Plan Cambell Acres", prepared for Kristin Stanley, prepared by Survey, Inc. dated December 2021 and revised thru 5-9-22, and recorded in the Cumberland County Registry of Deeds Plan Book 222 page 174 on May 11, 2022. The property is vacant and consists predominantly of natural woodland with a small field area that is located within a buffer area at the northeasterly corner of the property.

The project proposes to construct three (3) residential duplexes on three (3) separate proposed residential lots. The lots will be accessed by a private road with a design length of approximately 421' from the intersection of Jenny Drive to the end of the proposed subdivision road and will include a hammerhead turnaround at the end of the proposed dead-end road. The project proposes to serve the residential development with both private water (three proposed potable private wells to be installed) and with individual private septic systems servicing each lot. Proposed telephone/electric/communication/cable services are proposed to be installed above ground, by extending overhead service from an existing utility pole located near the proposed curb cut though the project site.

In general, the property drains southwesterly towards Jenny Drive and discharges from the site into a depressed natural area within the site or to the existing road drainage swale in Jenny Drive, both ultimately merging at a depression at the outlet of a road culvert at the intersection of Jenny Drive and Fran Circle. From that point, stormwater is conveyed into an unnamed tributary of Glantz Brook and ultimately into the Pleasant River.

B. Alterations to Land Cover

McDonnell Brothers Custom Builders, LLC, intends to construct the roadway, the duplexes as well as all associated improvements and stormwater infrastructure. The applicant will be responsible for creating approximately 19,472 square feet (0.45± acres) of impervious surface consisting of the proposed roadway, and driveways, an additional 6,715 square feet of proposed roof area associated with the three proposed duplexes and approximately 54,564 square feet (1.25± acres) of landscaped area totaling approximately 80,751 square feet (1.85± acres) of total developed area.

The Town of Gray's Subdivision Ordinance indicates that the project's stormwater design will be required to meet the Basic and Flooding Standards of the Chapter 500 Stormwater Management rules.

The site is moderately sloped (5-9%) with steeper slopes closer to Jenny Drive. Soils on the property were determined utilizing the Medium Intensity Soil Maps for Cumberland County, Maine published by the Natural Resources Conservation Service. The soils boundaries and hydrologic soils group (HSG) designations are indicated on the Watershed Maps within the design plan set and a Soils Map has been included as

Attachment 1 of this report. Attachment 2 of this report includes all test pit logs analyzed within the project site.

C. Methodology and Modeling Assumptions

The proposed stormwater management system has been designed utilizing Best Management Practices to maintain existing drainage patterns. The goal of the storm drainage system design is to provide attenuation of the peak rates of runoff leaving the site. The method utilized to predict the surface water runoff rates in this analysis is a computer program entitled HydroCAD, which is based on the same methods that were originally developed by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service, and utilized in the TR-20 modeling program. Peak rates of runoff are forecasted based upon land use, hydrologic soil conditions, vegetative cover, contributing watershed area, time of concentration, rainfall data, storage volumes of detention basins and the hydraulic capacity of structures. The computer model predicts the amount of runoff as a function of time, with the ability to include the attenuation effect due to dams, lakes, large wetlands, floodplains and constructed stormwater management basins. The input data for rainfalls with statistical recurrence frequencies of 2-, 10- and 25 years was obtained from the Northeast Regional Climate Center's extreme precipitation tables for the project site.

D. Basic Standards

The project is required by the MDEP and the Town to provide permanent and temporary Erosion Control Best Management Practices. These methods are incorporated into the project design and outlined in detail in the plan set.

E. Flooding Standard

The Town of Gray requires the project to detain, retain or result in the infiltration of stormwater from the 24-hour storms of the 2-year, 10-year and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

The project's stormwater design incorporates a detention to maintain these peak stormwater flows to pre-developed project conditions. The proposed project design has been modeled to evaluate and analyze the stormwater runoff characteristics of the site prior to construction of the project and upon completion of all proposed construction activities.

The first and only study point, Study Point 1 (SP-1) is located to the south of the project site near the outlet to an existing road culvert at the intersection of Jenny Drive and Fran Circle. This depression collects stormwater generated from both off-site and on-site tributary areas where the Jenny Drive Road swale converges with a natural drainage path, as well as the discharge from the existing road culvert. Stormwater is then conveyed to the south into an unnamed tributary of Glantz Brook and ultimately into the Pleasant River. Sub-basin watershed area for SP1 is made up of both proposed onsite development and offsite areas, and consists of developed land, undeveloped woodland, and undeveloped meadow areas.

The following table summarizes the analysis:

Table 1 – Peak Rates of Stormwater Runoff						
Study Point	2-Year (cfs)		10-Year (cfs)		25-Year (cfs)	
	Pre	Post	Pre	Post	Pre	Post
SP1	3.54	3.50	8.17	7.72	12.24	11.31

As illustrated in the table above, the proposed project's design including the integration of the proposed detention basin, reduces the peak rates of runoff at the study point.

The detention basin has been designed based on the MDEP guidelines and provides adequate flooding storage during the larger storm events. To demonstrate that the design of the detention basin has the required 1 foot of freeboard between the emergency spillway and the top of berm during the 25-year storm event assuming failure of the other discharge devices, a stormwater analysis was performed. The HydroCAD output has been provided in Attachment 3 of this report.

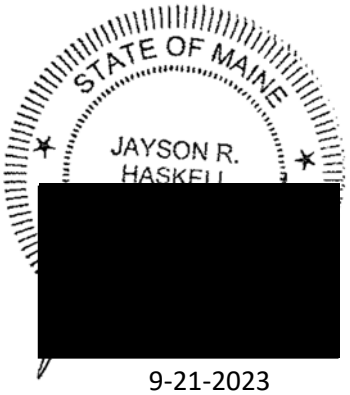
The watershed maps showing pre-development and post-development drainage patterns are included in the plan set and the computations performed with the HydroCAD software program are included as Attachment 4 of this report.

F. Maintenance of common facilities or property

The applicant will be responsible for the maintenance of the stormwater facilities until a homeowner's association is established. The Inspection, Maintenance and Housekeeping Plan for the project has been created and has been included in Attachment 5 of this report.

Prepared by:

DM ROMA CONSULTING ENGINEERS



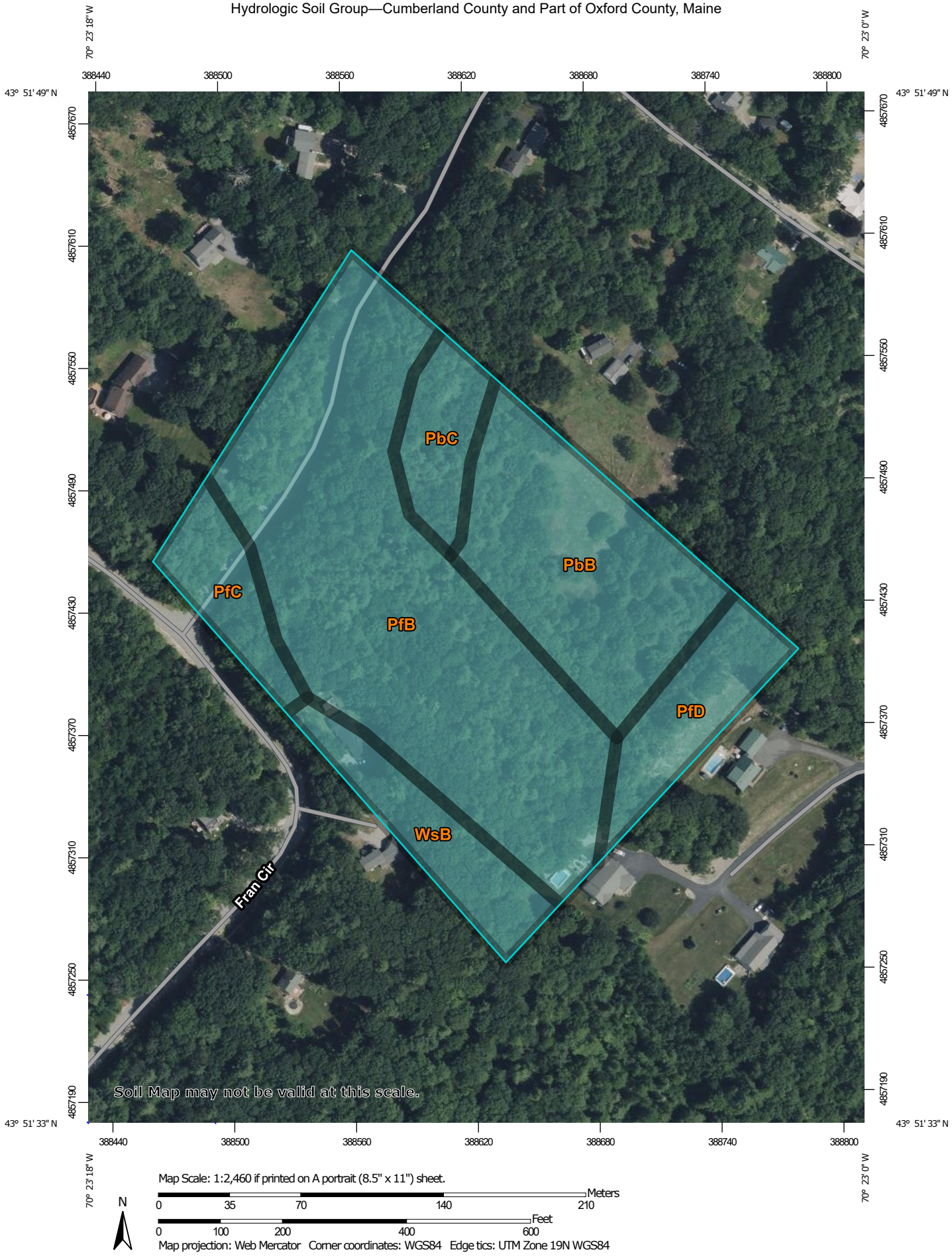
J.P. Connolly
Senior Project Engineer

Jayson R. Haskell P.E.
Southern Maine Regional Manager

9-21-2023

ATTACHMENT 1

MEDIUM INTENSITY SOILS MAP


70° 23' 18" W
70° 23' 0" W
388440
388500
388560
388620
388680
388740
388800
43° 51' 49" N
43° 51' 33" N
4857670
4857610
4857550
4857490
4857430
4857370
4857310
4857250
4857190
PbC
PbB
PfC
PfB
PfD
WsB
Fran Cir
Soil Map may not be valid at this scale.
Map Scale: 1:2,460 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 35 70 140 210
Feet
0 100 200 400 600
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

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 19, Aug 30, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 22, 2021—Oct 7, 2021

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
PbB	Paxton fine sandy loam, 3 to 8 percent slopes	C	2.9	21.9%
PbC	Paxton fine sandy loam, 8 to 15 percent slopes	C	0.8	6.0%
PfB	Paxton very stony fine sandy loam, 3 to 8 percent slopes	C	6.6	49.4%
PfC	Paxton very stony fine sandy loam, 8 to 15 percent slopes	C	0.8	6.0%
PfD	Paxton very stony fine sandy loam, 15 to 25 percent slopes	C	1.1	8.3%
WsB	Woodbridge very stony fine sandy loam, 0 to 8 percent slopes	C	1.1	8.4%
Totals for Area of Interest			**13.4**	**100.0%**

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

ATTACHMENT 2

TEST PIT LOGS

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
Campbell Shore Road Lots	Kristin Stanley	Gray

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-1 [X] Test Pit [ ] Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
SANDY LOAM		YELLOWISH BROWN	
SANDY LOAM w/ COBBLES		LIGHT OLIVE BROWN	
	FIRM	OLIVE BROWN	FEW, FINE, & FAINT
LIMIT OF EXCAVATION = 34"			

[■] hydric [ ] non-hydric

Slope %: 0-5

Limiting factor: 24"

[ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name:

Drainage Class: Hydrologic Group:

L.S.E. Soil Classification: 3 Profile C Soil Condition

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-2 [ ] [X] Test Pit [ ] Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
SANDY LOAM		YELLOWISH BROWN	
SANDY LOAM w/ COBBLES		LIGHT OLIVE BROWN	
	FIRM	OLIVE BROWN	FEW, FINE, & FAINT
LIMIT OF EXCAVATION = 34"			

[■] hydric [ ] non-hydric

Slope %: 0-3

Limiting factor: 34"

[ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name:

Drainage Class: Hydrologic Group:

L.S.E. Soil Classification: 3 Profile C Soil Condition

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: [X] Test Pit [ ] Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

[■] hydric [■] non-hydric

Slope %:

Limiting factor:

[■] ground water [■] restrictive layer [■] bedrock

C.S.S. Soil Series / phase name:

Drainage Class: Hydrologic Group:

L.S.E. Soil Classification:

Profile Soil Condition

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: [X] Test Pit [ ] Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

[■] hydric [■] non-hydric

Slope %:

Limiting factor:

[■] ground water [■] restrictive layer [■] bedrock

C.S.S. Soil Series / phase name:

Drainage Class: Hydrologic Group:

L.S.E. Soil Classification:

Profile Soil Condition

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:
	name printed/typed:	Lic.#:
L.S.E.	signature: [redacted]	Date: 12/9/21
	name printed/typed: Alexander A. Finamore	Lic.#: 391

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
Campbell Shore Road Lots	Kristin Stanley	Gray

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-3 | [X] Test Pit | [ ] Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
FINE SANDY LOAM		YELLOWISH BROWN	
SANDY LOAM w/ COBBLES		BROWN	
	FIRM	OLIVE BROWN	FEW, FINE, & FAINT
LIMIT OF EXCAVATION = 32"			

[■] hydric [ ] non-hydric | Slope %: 3-8 | Limiting factor: 20" | [ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-4 | [X] Test Pit | [ ] Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
FINE SANDY LOAM		YELLOWISH BROWN	
SANDY LOAM w/ COBBLES		LIGHT OLIVE BROWN	
	FIRM	OLIVE BROWN	FEW, FINE, & FAINT
LIMIT OF EXCAVATION = 44"			

[■] hydric [ ] non-hydric | Slope %: 0-3 | Limiting factor: 34" | [ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-5 | [X] Test Pit | [ ] Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
FINE SANDY LOAM		YELLOWISH BROWN	
SANDY LOAM w/ COBBLES		LIGHT OLIVE BROWN	
LIMIT OF EXCAVATION = 44"			

[■] hydric [ ] non-hydric | Slope %: 5-8 | Limiting factor: >48" | [ ] ground water [ ] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 2 (Profile) B (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: | [X] Test Pit | [ ] Boring

0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

[ ] hydric [ ] non-hydric | Slope % | Limiting factor | [ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: (Profile) (Soil Condition)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:
	name printed/typed:	Lic.#:
L.S.E.	signature: [redacted]	Date: 2/11/22
	name printed/typed: Alexander A. Finamore	Lic.#: 391

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
Campbell Shore Road Lots	McDonnell Brothers Custom Builders, LLC	Gray

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-6 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
SANDY LOAM w/ COBBLES		YELLOWISH BROWN	
		OLIVE	
	FIRM	OLIVE BROWN	FEW, FINE, & FAINT
LIMIT OF EXCAVATION = 34"			

[■] hydric [ ] non-hydric | Slope %: 0-5 | Limiting factor: 18" | [■] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-7 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
SANDY LOAM		YELLOWISH BROWN	
SANDY LOAM w/ COBBLES		LIGHT OLIVE BROWN	
	FIRM	OLIVE BROWN	FEW, FINE, & FAINT
LIMIT OF EXCAVATION = 34"			

[ ] hydric [■] non-hydric | Slope %: 0-3 | Limiting factor: 28" | [■] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-SW1 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
SANDY LOAM w/ COBBLES		YELLOWISH BROWN	
		OLVIE	
		OLIVE BROWN	FEW, FINE, & FAINT
	FIRM		
LIMIT OF EXCAVATION = 34"			

[■] hydric [ ] non-hydric | Slope %: 5-8 | Limiting factor: 13" | [■] ground water [ ] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) D (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

[ ] hydric [ ] non-hydric | Slope % | Limiting factor | [ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: (Profile) (Soil Condition)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:
	name printed/typed:	Lic.#:
L.S.E.	signature: [redacted]	Date: 7/27/23
	name printed/typed: Alexander A. Finamore	Lic.#: 391

ATTACHMENT 3

DETENTION BASIN SIZING CALCULATIONS

DETENTION BASIN - SPILLWAY RUN

Summary for Pond DB1:

[80] Warning: Exceeded Pond R8 by 1.13' @ 25.92 hrs (4.20 cfs 169,341 cf)

Inflow Area = 124,499 sf, 6.44% Impervious, Inflow Depth = 3.06" for 25-Year event
Inflow = 5.35 cfs @ 12.43 hrs, Volume= 31,723 cf
Outflow = 5.13 cfs @ 12.52 hrs, Volume= 26,821 cf, Atten= 4%, Lag= 5.3 min
Primary = 5.13 cfs @ 12.52 hrs, Volume= 26,821 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Peak Elev= 334.53' @ 12.52 hrs Surf.Area= 3,818 sf Storage= 6,822 cf

PEAK WS EL.= 334.53'
BERM EL.= 335.5
FREEBOARD:
335.5-334.54=0.97' ~ 1'

Plug-Flow detention time= 105.9 min calculated for 26,792 cf (84% of inflow)
Center-of-Mass det. time= 39.9 min (891.3 - 851.4)

Volume	Invert	Avail.Storage	Storage Description
#1	332.30'	8,703 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
332.30	2,352	203.8	0	0	2,352
334.00	3,450	234.4	4,902	4,902	3,482
335.00	4,163	252.4	3,801	8,703	4,221

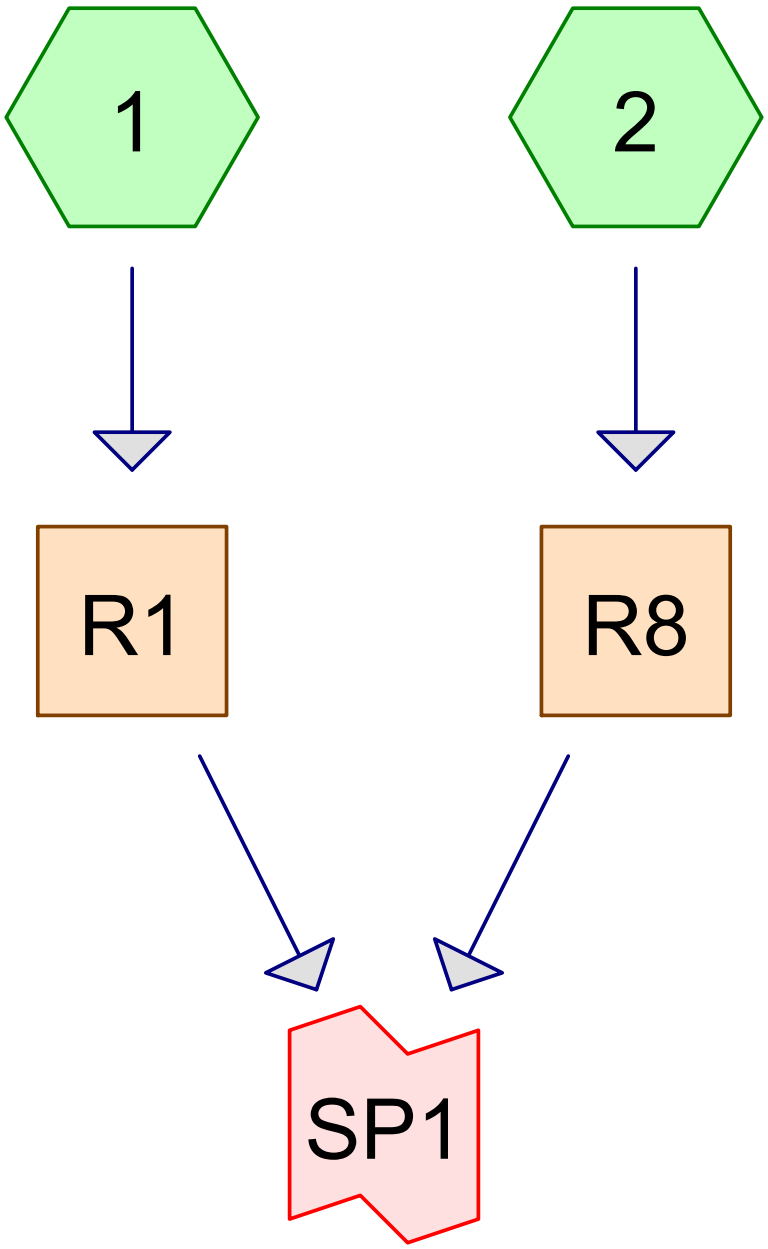
Device	Routing	Invert	Outlet Devices
#1	Primary	334.00'	**5.0' long x 12.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	332.30'	**8.0" Round Culvert X 0.00** L= 22.6' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 332.30' / 332.00' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=5.09 cfs @ 12.52 hrs HW=334.53' TW=332.53' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 5.09 cfs @ 1.94 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=332.30' TW=332.00' (Dynamic Tailwater)
↑—**2=Culvert** (Controls 0.00 cfs)

ATTACHMENT 4

HYDROCAD CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for 23015 - PRE
Prepared by DM Roma Consulting Engineers, Printed 9/21/2023
HydroCAD® 10.00-26 s/n 09237 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=62,577 sf 0.00% Impervious Runoff Depth=0.88"
Flow Length=763' Tc=21.4 min CN=72 Runoff=0.88 cfs 4,591 cf

Subcatchment 2: Runoff Area=260,052 sf 0.00% Impervious Runoff Depth=0.88"
Flow Length=761' Tc=37.6 min CN=72 Runoff=2.86 cfs 19,080 cf

Reach R1: Avg. Flow Depth=0.07' Max Vel=1.65 fps Inflow=0.88 cfs 4,591 cf
n=0.022 L=226.9' S=0.0528 '/' Capacity=1.62 cfs Outflow=0.88 cfs 4,591 cf

Reach R8: Avg. Flow Depth=0.35' Max Vel=3.52 fps Inflow=2.86 cfs 19,080 cf
n=0.035 L=257.2' S=0.0719 '/' Capacity=304.41 cfs Outflow=2.86 cfs 19,080 cf

Link SP1: Inflow=3.54 cfs 23,671 cf
Primary=3.54 cfs 23,671 cf

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=62,577 sf 0.00% Impervious Runoff Depth=1.90"
Flow Length=763' Tc=21.4 min CN=72 Runoff=2.05 cfs 9,919 cf

Subcatchment 2: Runoff Area=260,052 sf 0.00% Impervious Runoff Depth=1.90"
Flow Length=761' Tc=37.6 min CN=72 Runoff=6.62 cfs 41,219 cf

Reach R1: Avg. Flow Depth=0.10' Max Vel=2.02 fps Inflow=2.05 cfs 9,919 cf
n=0.022 L=226.9' S=0.0528 '/' Capacity=1.62 cfs Outflow=2.03 cfs 9,919 cf

Reach R8: Avg. Flow Depth=0.48' Max Vel=4.34 fps Inflow=6.62 cfs 41,219 cf
n=0.035 L=257.2' S=0.0719 '/' Capacity=304.41 cfs Outflow=6.62 cfs 41,219 cf

Link SP1: Inflow=8.17 cfs 51,138 cf
Primary=8.17 cfs 51,138 cf

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=62,577 sf 0.00% Impervious Runoff Depth=2.81"
Flow Length=763' Tc=21.4 min CN=72 Runoff=3.07 cfs 14,634 cf

Subcatchment 2: Runoff Area=260,052 sf 0.00% Impervious Runoff Depth=2.81"
Flow Length=761' Tc=37.6 min CN=72 Runoff=9.91 cfs 60,813 cf

Reach R1: Avg. Flow Depth=0.12' Max Vel=2.17 fps Inflow=3.07 cfs 14,634 cf
n=0.022 L=226.9' S=0.0528 '/' Capacity=1.62 cfs Outflow=3.05 cfs 14,634 cf

Reach R8: Avg. Flow Depth=0.55' Max Vel=4.80 fps Inflow=9.91 cfs 60,813 cf
n=0.035 L=257.2' S=0.0719 '/' Capacity=304.41 cfs Outflow=9.91 cfs 60,813 cf

Link SP1: Inflow=12.24 cfs 75,447 cf
Primary=12.24 cfs 75,447 cf

Summary for Subcatchment 1:

Runoff = 3.07 cfs @ 12.30 hrs, Volume= 14,634 cf, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.77"

Area (sf)	CN	Description
9,859	74	>75% Grass cover, Good, HSG C
52,718	72	Woods/grass comb., Good, HSG C
62,577	72	Weighted Average
62,577		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.2	113	0.0533	0.12		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.12"
0.7	149	0.0553	3.79		**Shallow Concentrated Flow, Seg B to C** Unpaved Kv= 16.1 fps
4.1	371	0.0922	1.52		**Shallow Concentrated Flow, Seg C to D** Woodland Kv= 5.0 fps
0.4	130	0.0423	5.44	169.64	**Channel Flow, Seg D to E** Area= 31.2 sf Perim= 63.5' r= 0.49' n= 0.035 Earth, dense weeds
21.4	763	Total			

Summary for Subcatchment 2:

Runoff = 9.91 cfs @ 12.53 hrs, Volume= 60,813 cf, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.77"

Area (sf)	CN	Description
18,347	74	>75% Grass cover, Good, HSG C
241,705	72	Woods/grass comb., Good, HSG C
260,052	72	Weighted Average
260,052		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.3	150	0.0167	0.08		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.12"
0.8	61	0.0734	1.35		**Shallow Concentrated Flow, Seg B to C** Woodland Kv= 5.0 fps
0.3	125	0.0582	6.30	238.91	**Channel Flow, Seg C to D** Area= 37.9 sf Perim= 78.5' r= 0.48' n= 0.035 Earth, dense weeds
1.0	84	0.0807	1.42		**Shallow Concentrated Flow, Seg D to E** Woodland Kv= 5.0 fps
0.3	86	0.0261	4.96	293.50	**Channel Flow, Seg E to F** Area= 59.2 sf Perim= 121.4' r= 0.49' n= 0.030 Earth, grassed & winding
2.9	255	0.0833	1.44		**Shallow Concentrated Flow, Seg F to G** Woodland Kv= 5.0 fps
37.6	761	Total			

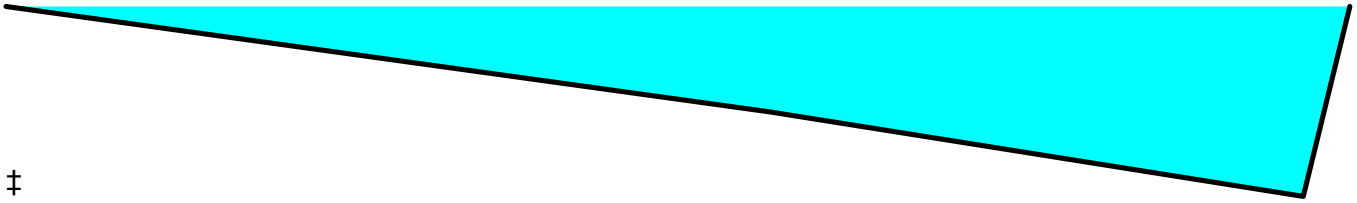
Summary for Reach R1:

Inflow Area = 62,577 sf, 0.00% Impervious, Inflow Depth = 2.81" for 25-Year event
Inflow = 3.07 cfs @ 12.30 hrs, Volume= 14,634 cf
Outflow = 3.05 cfs @ 12.33 hrs, Volume= 14,634 cf, Atten= 1%, Lag= 1.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.17 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 0.99 fps, Avg. Travel Time= 3.8 min

Peak Storage= 319 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 0.09' Flow Area= 0.8 sf, Capacity= 1.62 cfs

Custom cross-section, Length= 226.9' Slope= 0.0528 '/'
Constant n= 0.022 Earth, clean & straight
Inlet Invert= 323.97', Outlet Invert= 312.00'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	322.09	0.00
11.00	322.04	0.05
18.68	322.00	0.09
19.35	322.09	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
0.04	0.2	8.0	36	0.18
0.09	0.8	19.4	191	1.62

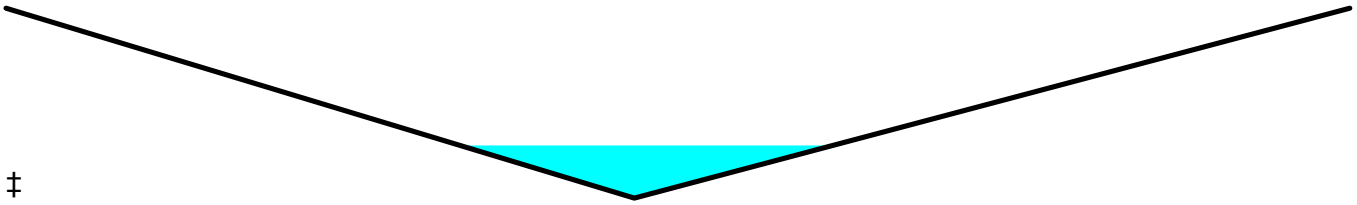
Summary for Reach R8:

Inflow Area = 260,052 sf, 0.00% Impervious, Inflow Depth = 2.81" for 25-Year event
Inflow = 9.91 cfs @ 12.53 hrs, Volume= 60,813 cf
Outflow = 9.91 cfs @ 12.54 hrs, Volume= 60,813 cf, Atten= 0%, Lag= 0.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.80 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 2.23 fps, Avg. Travel Time= 1.9 min

Peak Storage= 531 cf @ 12.54 hrs
Average Depth at Peak Storage= 0.55'
Bank-Full Depth= 2.00' Flow Area= 26.9 sf, Capacity= 304.41 cfs

Custom cross-section, Length= 257.2' Slope= 0.0719 '/'
Constant n= 0.035 Earth, dense weeds
Inlet Invert= 330.50', Outlet Invert= 312.00'



‡

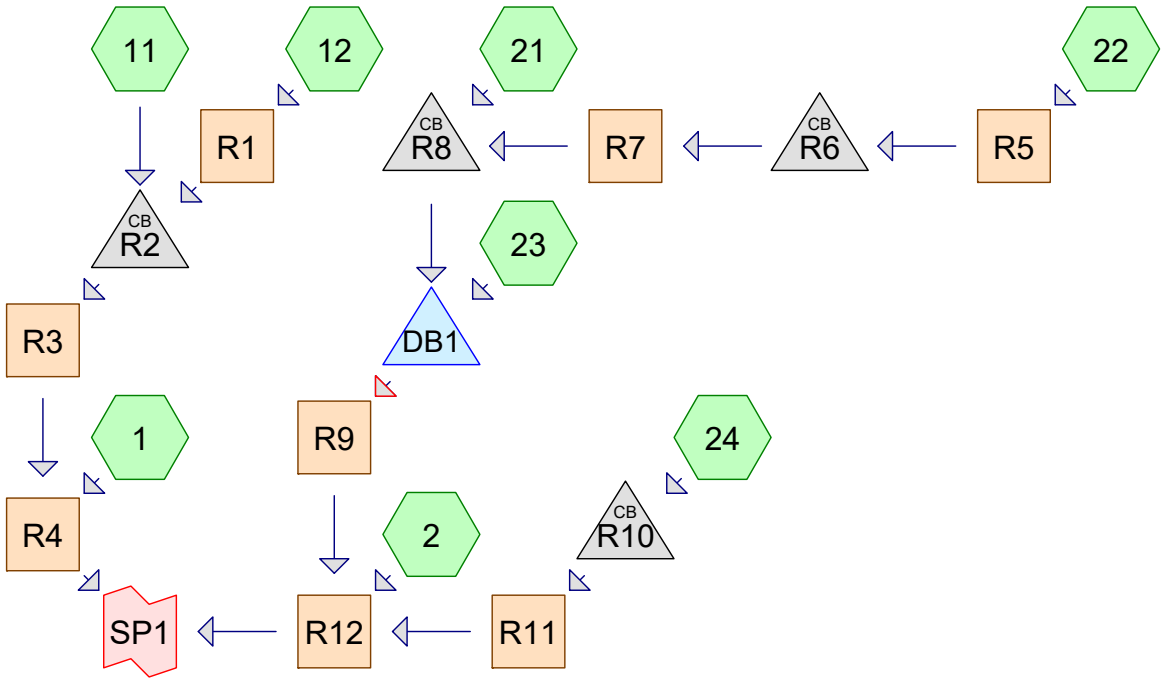
Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	334.00	0.00
12.59	332.00	2.00
26.93	334.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
2.00	26.9	27.2	6,926	304.41

Summary for Link SP1:

Inflow Area = 322,629 sf, 0.00% Impervious, Inflow Depth = 2.81" for 25-Year event
Inflow = 12.24 cfs @ 12.50 hrs, Volume= 75,447 cf
Primary = 12.24 cfs @ 12.50 hrs, Volume= 75,447 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs



Subcat Reach Pond Link

Routing Diagram for 23015 - POST
Prepared by DM Roma Consulting Engineers, Printed 9/21/2023
HydroCAD® 10.00-26 s/n 09237 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-72.00 hrs, dt=0.08 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=11,878 sf 12.99% Impervious Runoff Depth=1.10"
Flow Length=88' Slope=0.1704 '/' Tc=8.3 min CN=76 Runoff=0.29 cfs 1,086 cf

Subcatchment 2: Runoff Area=86,710 sf 3.88% Impervious Runoff Depth=0.99"
Flow Length=592' Tc=17.5 min UI Adjusted CN=74 Runoff=1.52 cfs 7,119 cf

Subcatchment 11: Runoff Area=49,505 sf 0.69% Impervious Runoff Depth=0.93"
Flow Length=705' Tc=21.2 min CN=73 Runoff=0.75 cfs 3,845 cf

Subcatchment 12: Runoff Area=47,115 sf 2.83% Impervious Runoff Depth=0.99"
Flow Length=644' Tc=30.4 min CN=74 Runoff=0.66 cfs 3,868 cf

Subcatchment 21: Runoff Area=48,109 sf 6.40% Impervious Runoff Depth=1.04"
Flow Length=606' Tc=35.7 min UI Adjusted CN=75 Runoff=0.66 cfs 4,170 cf

Subcatchment 22: Runoff Area=63,916 sf 5.14% Impervious Runoff Depth=0.99"
Flow Length=548' Tc=29.3 min UI Adjusted CN=74 Runoff=0.91 cfs 5,248 cf

Subcatchment 23: Runoff Area=12,474 sf 13.24% Impervious Runoff Depth=1.15"
Flow Length=87' Tc=9.8 min CN=77 Runoff=0.32 cfs 1,201 cf

Subcatchment 24: Runoff Area=3,257 sf 0.43% Impervious Runoff Depth=0.93"
Flow Length=150' Tc=19.3 min CN=73 Runoff=0.05 cfs 253 cf

Reach R1: Avg. Flow Depth=0.10' Max Vel=2.96 fps Inflow=0.66 cfs 3,868 cf
n=0.030 L=105.5' S=0.0900 '/' Capacity=464.49 cfs Outflow=0.66 cfs 3,868 cf

Reach R11: Avg. Flow Depth=0.09' Max Vel=0.42 fps Inflow=0.05 cfs 253 cf
n=0.035 L=34.4' S=0.0058 '/' Capacity=193.69 cfs Outflow=0.05 cfs 253 cf

Reach R12: Avg. Flow Depth=0.30' Max Vel=3.22 fps Inflow=2.00 cfs 17,979 cf
n=0.035 L=257.2' S=0.0719 '/' Capacity=304.41 cfs Outflow=2.00 cfs 17,979 cf

Reach R3: Avg. Flow Depth=0.53' Max Vel=1.31 fps Inflow=1.35 cfs 7,713 cf
n=0.035 L=34.4' S=0.0058 '/' Capacity=11.80 cfs Outflow=1.35 cfs 7,713 cf

Reach R4: Avg. Flow Depth=0.09' Max Vel=1.88 fps Inflow=1.50 cfs 8,799 cf
n=0.022 L=226.9' S=0.0528 '/' Capacity=1.62 cfs Outflow=1.50 cfs 8,799 cf

Reach R5: Avg. Flow Depth=0.15' Max Vel=2.51 fps Inflow=0.91 cfs 5,248 cf
n=0.030 L=91.7' S=0.0397 '/' Capacity=308.40 cfs Outflow=0.91 cfs 5,248 cf

Reach R7: Avg. Flow Depth=0.10' Max Vel=3.81 fps Inflow=0.91 cfs 5,248 cf
n=0.030 L=62.1' S=0.1403 '/' Capacity=579.71 cfs Outflow=0.91 cfs 5,248 cf

Reach R9: Avg. Flow Depth=0.29' Max Vel=1.83 fps Inflow=1.06 cfs 10,607 cf
n=0.035 L=61.8' S=0.0243 '/' Capacity=176.83 cfs Outflow=1.06 cfs 10,607 cf

Pond DB1: Peak Elev=333.14' Storage=2,201 cf Inflow=1.70 cfs 10,618 cf
Primary=0.00 cfs 0 cf Secondary=1.06 cfs 10,607 cf Outflow=1.06 cfs 10,607 cf

Pond R10: Peak Elev=349.56' Inflow=0.05 cfs 253 cf
15.0" Round Culvert n=0.013 L=40.5' S=0.0126 '/' Outflow=0.05 cfs 253 cf

Pond R2: Peak Elev=323.42' Inflow=1.35 cfs 7,713 cf
18.0" Round Culvert n=0.013 L=35.5' S=0.0048 '/' Outflow=1.35 cfs 7,713 cf

Pond R6: Peak Elev=346.81' Inflow=0.91 cfs 5,248 cf
15.0" Round Culvert n=0.013 L=57.7' S=0.0827 '/' Outflow=0.91 cfs 5,248 cf

Pond R8: Peak Elev=333.50' Inflow=1.56 cfs 9,418 cf
15.0" Round Culvert n=0.013 L=36.6' S=0.0139 '/' Outflow=1.56 cfs 9,418 cf

Link SP1: Inflow=3.50 cfs 26,778 cf
Primary=3.50 cfs 26,778 cf

Time span=0.00-72.00 hrs, dt=0.08 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=11,878 sf 12.99% Impervious Runoff Depth=2.22"
Flow Length=88' Slope=0.1704 '/' Tc=8.3 min CN=76 Runoff=0.61 cfs 2,195 cf

Subcatchment 2: Runoff Area=86,710 sf 3.88% Impervious Runoff Depth=2.06"
Flow Length=592' Tc=17.5 min UI Adjusted CN=74 Runoff=3.35 cfs 14,866 cf

Subcatchment 11: Runoff Area=49,505 sf 0.69% Impervious Runoff Depth=1.98"
Flow Length=705' Tc=21.2 min CN=73 Runoff=1.69 cfs 8,164 cf

Subcatchment 12: Runoff Area=47,115 sf 2.83% Impervious Runoff Depth=2.06"
Flow Length=644' Tc=30.4 min CN=74 Runoff=1.45 cfs 8,078 cf

Subcatchment 21: Runoff Area=48,109 sf 6.40% Impervious Runoff Depth=2.14"
Flow Length=606' Tc=35.7 min UI Adjusted CN=75 Runoff=1.43 cfs 8,567 cf

Subcatchment 22: Runoff Area=63,916 sf 5.14% Impervious Runoff Depth=2.06"
Flow Length=548' Tc=29.3 min UI Adjusted CN=74 Runoff=1.99 cfs 10,958 cf

Subcatchment 23: Runoff Area=12,474 sf 13.24% Impervious Runoff Depth=2.30"
Flow Length=87' Tc=9.8 min CN=77 Runoff=0.65 cfs 2,391 cf

Subcatchment 24: Runoff Area=3,257 sf 0.43% Impervious Runoff Depth=1.98"
Flow Length=150' Tc=19.3 min CN=73 Runoff=0.12 cfs 537 cf

Reach R1: Avg. Flow Depth=0.16' Max Vel=3.85 fps Inflow=1.45 cfs 8,078 cf
n=0.030 L=105.5' S=0.0900 '/' Capacity=464.49 cfs Outflow=1.44 cfs 8,078 cf

Reach R11: Avg. Flow Depth=0.12' Max Vel=0.51 fps Inflow=0.12 cfs 537 cf
n=0.035 L=34.4' S=0.0058 '/' Capacity=193.69 cfs Outflow=0.12 cfs 537 cf

Reach R12: Avg. Flow Depth=0.41' Max Vel=3.94 fps Inflow=4.54 cfs 37,308 cf
n=0.035 L=257.2' S=0.0719 '/' Capacity=304.41 cfs Outflow=4.49 cfs 37,308 cf

Reach R3: Avg. Flow Depth=0.72' Max Vel=1.59 fps Inflow=3.01 cfs 16,242 cf
n=0.035 L=34.4' S=0.0058 '/' Capacity=11.80 cfs Outflow=3.01 cfs 16,242 cf

Reach R4: Avg. Flow Depth=0.12' Max Vel=2.19 fps Inflow=3.33 cfs 18,437 cf
n=0.022 L=226.9' S=0.0528 '/' Capacity=1.62 cfs Outflow=3.31 cfs 18,437 cf

Reach R5: Avg. Flow Depth=0.24' Max Vel=3.23 fps Inflow=1.99 cfs 10,958 cf
n=0.030 L=91.7' S=0.0397 '/' Capacity=308.40 cfs Outflow=1.99 cfs 10,958 cf

Reach R7: Avg. Flow Depth=0.17' Max Vel=4.96 fps Inflow=1.99 cfs 10,958 cf
n=0.030 L=62.1' S=0.1403 '/' Capacity=579.71 cfs Outflow=1.99 cfs 10,958 cf

Reach R9: Avg. Flow Depth=0.39' Max Vel=2.21 fps Inflow=2.24 cfs 21,905 cf
n=0.035 L=61.8' S=0.0243 '/' Capacity=176.83 cfs Outflow=2.26 cfs 21,905 cf

Pond DB1: Peak Elev=334.11' Storage=5,272 cf Inflow=3.66 cfs 21,916 cf
Primary=0.44 cfs 416 cf Secondary=1.80 cfs 21,488 cf Outflow=2.24 cfs 21,905 cf

Pond R10: Peak Elev=349.62' Inflow=0.12 cfs 537 cf
15.0" Round Culvert n=0.013 L=40.5' S=0.0126 '/' Outflow=0.12 cfs 537 cf

Pond R2: Peak Elev=323.72' Inflow=3.01 cfs 16,242 cf
18.0" Round Culvert n=0.013 L=35.5' S=0.0048 '/' Outflow=3.01 cfs 16,242 cf

Pond R6: Peak Elev=347.06' Inflow=1.99 cfs 10,958 cf
15.0" Round Culvert n=0.013 L=57.7' S=0.0827 '/' Outflow=1.99 cfs 10,958 cf

Pond R8: Peak Elev=334.22' Inflow=3.38 cfs 19,525 cf
15.0" Round Culvert n=0.013 L=36.6' S=0.0139 '/' Outflow=3.38 cfs 19,525 cf

Link SP1: Inflow=7.72 cfs 55,745 cf
Primary=7.72 cfs 55,745 cf

Time span=0.00-72.00 hrs, dt=0.08 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=11,878 sf 12.99% Impervious Runoff Depth=3.18"
Flow Length=88' Slope=0.1704 '/' Tc=8.3 min CN=76 Runoff=0.88 cfs 3,150 cf

Subcatchment 2: Runoff Area=86,710 sf 3.88% Impervious Runoff Depth=2.99"
Flow Length=592' Tc=17.5 min UI Adjusted CN=74 Runoff=4.93 cfs 21,623 cf

Subcatchment 11: Runoff Area=49,505 sf 0.69% Impervious Runoff Depth=2.90"
Flow Length=705' Tc=21.2 min CN=73 Runoff=2.51 cfs 11,959 cf

Subcatchment 12: Runoff Area=47,115 sf 2.83% Impervious Runoff Depth=2.99"
Flow Length=644' Tc=30.4 min CN=74 Runoff=2.12 cfs 11,749 cf

Subcatchment 21: Runoff Area=48,109 sf 6.40% Impervious Runoff Depth=3.09"
Flow Length=606' Tc=35.7 min UI Adjusted CN=75 Runoff=2.08 cfs 12,376 cf

Subcatchment 22: Runoff Area=63,916 sf 5.14% Impervious Runoff Depth=2.99"
Flow Length=548' Tc=29.3 min UI Adjusted CN=74 Runoff=2.93 cfs 15,939 cf

Subcatchment 23: Runoff Area=12,474 sf 13.24% Impervious Runoff Depth=3.28"
Flow Length=87' Tc=9.8 min CN=77 Runoff=0.93 cfs 3,409 cf

Subcatchment 24: Runoff Area=3,257 sf 0.43% Impervious Runoff Depth=2.90"
Flow Length=150' Tc=19.3 min CN=73 Runoff=0.17 cfs 787 cf

Reach R1: Avg. Flow Depth=0.20' Max Vel=4.36 fps Inflow=2.12 cfs 11,749 cf
n=0.030 L=105.5' S=0.0900 '/' Capacity=464.49 cfs Outflow=2.12 cfs 11,749 cf

Reach R11: Avg. Flow Depth=0.14' Max Vel=0.56 fps Inflow=0.17 cfs 787 cf
n=0.035 L=34.4' S=0.0058 '/' Capacity=193.69 cfs Outflow=0.17 cfs 787 cf

Reach R12: Avg. Flow Depth=0.49' Max Vel=4.44 fps Inflow=7.25 cfs 54,121 cf
n=0.035 L=257.2' S=0.0719 '/' Capacity=304.41 cfs Outflow=7.26 cfs 54,121 cf

Reach R3: Avg. Flow Depth=0.83' Max Vel=1.76 fps Inflow=4.47 cfs 23,708 cf
n=0.035 L=34.4' S=0.0058 '/' Capacity=11.80 cfs Outflow=4.47 cfs 23,708 cf

Reach R4: Avg. Flow Depth=0.16' Max Vel=2.29 fps Inflow=4.91 cfs 26,858 cf
n=0.022 L=226.9' S=0.0528 '/' Capacity=1.62 cfs Outflow=4.87 cfs 26,858 cf

Reach R5: Avg. Flow Depth=0.29' Max Vel=3.64 fps Inflow=2.93 cfs 15,939 cf
n=0.030 L=91.7' S=0.0397 '/' Capacity=308.40 cfs Outflow=2.93 cfs 15,939 cf

Reach R7: Avg. Flow Depth=0.21' Max Vel=5.63 fps Inflow=2.93 cfs 15,939 cf
n=0.030 L=62.1' S=0.1403 '/' Capacity=579.71 cfs Outflow=2.93 cfs 15,939 cf

Reach R9: Avg. Flow Depth=0.51' Max Vel=2.63 fps Inflow=4.62 cfs 31,712 cf
n=0.035 L=61.8' S=0.0243 '/' Capacity=176.83 cfs Outflow=4.71 cfs 31,712 cf

Pond DB1: Peak Elev=334.35' Storage=6,146 cf Inflow=5.35 cfs 31,723 cf
Primary=2.68 cfs 4,352 cf Secondary=1.94 cfs 27,360 cf Outflow=4.62 cfs 31,712 cf

Pond R10: Peak Elev=349.66' Inflow=0.17 cfs 787 cf
15.0" Round Culvert n=0.013 L=40.5' S=0.0126 '/' Outflow=0.17 cfs 787 cf

Pond R2: Peak Elev=323.94' Inflow=4.47 cfs 23,708 cf
18.0" Round Culvert n=0.013 L=35.5' S=0.0048 '/' Outflow=4.47 cfs 23,708 cf

Pond R6: Peak Elev=347.24' Inflow=2.93 cfs 15,939 cf
15.0" Round Culvert n=0.013 L=57.7' S=0.0827 '/' Outflow=2.93 cfs 15,939 cf

Pond R8: Peak Elev=334.89' Inflow=4.95 cfs 28,315 cf
15.0" Round Culvert n=0.013 L=36.6' S=0.0139 '/' Outflow=4.95 cfs 28,315 cf

Link SP1: Inflow=11.31 cfs 80,979 cf
Primary=11.31 cfs 80,979 cf

Summary for Subcatchment 1:

Runoff = 0.88 cfs @ 12.12 hrs, Volume= 3,150 cf, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.77"

	Area (sf)	CN	Description
	3,356	74	>75% Grass cover, Good, HSG C
	6,842	72	Woods/grass comb., Good, HSG C
*	1,543	98	Paved road
*	137	96	Gravel surface
	11,878	76	Weighted Average
	10,335		87.01% Pervious Area
	1,543		12.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	88	0.1704	0.18		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.12"

Summary for Subcatchment 2:

Runoff = 4.93 cfs @ 12.25 hrs, Volume= 21,623 cf, Depth= 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.77"

	Area (sf)	CN	Adj	Description
*	0	74		>75% Grass cover, Existing, Good, HSG C
*	14,621	74		>75% Grass cover, Proposed, Good, HSG C
	63,991	72		Woods/grass comb., Good, HSG C
*	1,128	98		Paved road
*	4,732	96		Gravel surface
*	2,238	98		Unconnected roofs,
	86,710	75	74	Weighted Average, UI Adjusted
	83,344			96.12% Pervious Area
	3,366			3.88% Impervious Area
	2,238			66.49% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	91	0.0608	0.12		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.12"
0.3	165	0.0546	9.85	284.41	**Trap/Vee/Rect Channel Flow, Seg B to C** Bot.W=2.00' D=1.50' Z= 20.0 & 3.0 '/' Top.W=36.50' n= 0.030 Earth, grassed & winding
1.1	73	0.0477	1.09		**Shallow Concentrated Flow, Seg C to D** Woodland Kv= 5.0 fps
3.2	263	0.0769	1.39		**Shallow Concentrated Flow, Seg D to E** Woodland Kv= 5.0 fps

17.5 592 Total

Summary for Subcatchment 11:

Runoff = 2.51 cfs @ 12.30 hrs, Volume= 11,959 cf, Depth= 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.77"

	Area (sf)	CN	Description
*	9,881	74	>75% Grass cover, Existing, Good, HSG C
*	938	74	>75% Grass cover, Proposed, Good, HSG C
	38,307	72	Woods/grass comb., Good, HSG C
*	343	98	Paved road
*	36	96	Gravel surface
*	0	98	Unconnected roofs,
	49,505	73	Weighted Average
	49,162		99.31% Pervious Area
	343		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.2	113	0.0533	0.12		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.12"
0.7	149	0.0553	3.79		**Shallow Concentrated Flow, Seg B to C** Unpaved Kv= 16.1 fps
4.1	371	0.0922	1.52		**Shallow Concentrated Flow, Seg C to D** Woodland Kv= 5.0 fps
0.2	56	0.0404	5.31	165.79	**Channel Flow, Seg D to E** Area= 31.2 sf Perim= 63.5' r= 0.49' n= 0.035 Earth, dense weeds
0.0	16	0.1592	24.34	527.11	**Trap/Vee/Rect Channel Flow, Seg E to F** Bot.W=1.00' D=2.75' Z= 2.0 & 3.0 '/' Top.W=14.75' n= 0.030 Earth, grassed & winding
21.2	705	Total			

Summary for Subcatchment 12:

Runoff = 2.12 cfs @ 12.43 hrs, Volume= 11,749 cf, Depth= 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.77"

	Area (sf)	CN	Description
*	9,958	74	>75% Grass cover, Existing, Good, HSG C
*	9,114	74	>75% Grass cover, Proposed, Good, HSG C
	26,569	72	Woods/grass comb., Good, HSG C
*	1,332	98	Paved road
*	142	96	Gravel surface
*	0	98	Unconnected roofs,
	47,115	74	Weighted Average
	45,783		97.17% Pervious Area
	1,332		2.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0	150	0.0317	0.10		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.12"
0.7	28	0.0181	0.67		**Shallow Concentrated Flow, Seg B to C** Woodland Kv= 5.0 fps
0.6	154	0.0680	4.20		**Shallow Concentrated Flow, Seg C to D** Unpaved Kv= 16.1 fps
4.0	286	0.0568	1.19		**Shallow Concentrated Flow, Seg D to E** Woodland Kv= 5.0 fps
0.1	26	0.0383	3.15		**Shallow Concentrated Flow, Seg E to F** Unpaved Kv= 16.1 fps
30.4	644	Total			

Summary for Subcatchment 21:

Runoff = 2.08 cfs @ 12.50 hrs, Volume= 12,376 cf, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.77"

	Area (sf)	CN	Adj	Description
*	8,369	74		>75% Grass cover, Existing, Good, HSG C
*	7,334	74		>75% Grass cover, Proposed, Good, HSG C
	26,057	72		Woods/grass comb., Good, HSG C
*	840	98		Paved road
*	3,271	96		Gravel surface
*	2,238	98		Unconnected roofs,
	48,109	76	75	Weighted Average, UI Adjusted
	45,031			93.60% Pervious Area
	3,078			6.40% Impervious Area
	2,238			72.71% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.3	150	0.0167	0.08		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.12"
1.4	69	0.0253	0.80		**Shallow Concentrated Flow, Seg B to C** Woodland Kv= 5.0 fps
0.4	93	0.0590	3.91		**Shallow Concentrated Flow, Seg C to D** Unpaved Kv= 16.1 fps
1.0	91	0.0904	1.50		**Shallow Concentrated Flow, Seg D to E** Woodland Kv= 5.0 fps
0.5	104	0.0507	3.63		**Shallow Concentrated Flow, Seg E to F** Unpaved Kv= 16.1 fps
0.1	41	0.1017	5.13		**Shallow Concentrated Flow, Seg F to G** Unpaved Kv= 16.1 fps
0.0	14	0.2933	8.72		**Shallow Concentrated Flow, Seg G to H** Unpaved Kv= 16.1 fps
0.0	44	0.1399	23.72	578.97	**Trap/Vee/Rect Channel Flow, Seg H to I** Bot.W=2.00' D=2.75' Z= 2.0 & 3.0 '/' Top.W=15.75' n= 0.030 Earth, grassed & winding
35.7	606	Total			

Summary for Subcatchment 22:

Runoff = 2.93 cfs @ 12.42 hrs, Volume= 15,939 cf, Depth= 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.77"

	Area (sf)	CN	Adj	Description
*	0	74		>75% Grass cover, Existing, Good, HSG C
*	12,039	74		>75% Grass cover, Proposed, Good, HSG C
	45,522	72		Woods/grass comb., Good, HSG C
*	1,048	98		Paved road
*	3,069	96		Gravel surface
*	2,238	98		Unconnected roofs,
	63,916	75	74	Weighted Average, UI Adjusted
	60,630			94.86% Pervious Area
	3,286			5.14% Impervious Area
	2,238			68.11% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.8	150	0.0267	0.09		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.12"
0.1	61	0.0693	8.12	211.97	**Channel Flow, Seg B to C** Area= 26.1 sf Perim= 53.1' r= 0.49' n= 0.030 Earth, grassed & winding
1.3	90	0.0558	1.18		**Shallow Concentrated Flow, Seg C to D** Woodland Kv= 5.0 fps
0.1	29	0.0586	3.90		**Shallow Concentrated Flow, Seg D to E** Unpaved Kv= 16.1 fps
0.5	39	0.0773	1.39		**Shallow Concentrated Flow, Seg E to F** Woodland Kv= 5.0 fps
0.4	87	0.0430	3.34		**Shallow Concentrated Flow, Seg F to G** Unpaved Kv= 16.1 fps
0.1	92	0.0833	18.30	446.75	**Trap/Vee/Rect Channel Flow, Seg G to H** Bot.W=2.00' D=2.75' Z= 2.0 & 3.0 '/' Top.W=15.75' n= 0.030 Earth, grassed & winding
29.3	548	Total			

Summary for Subcatchment 23:

Runoff = 0.93 cfs @ 12.15 hrs, Volume= 3,409 cf, Depth= 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.77"

	Area (sf)	CN	Description
*	0	74	>75% Grass cover, Existing, Good, HSG C
*	9,192	74	>75% Grass cover, Proposed, Good, HSG C
	1,452	72	Woods/grass comb., Good, HSG C
*	1,651	98	Paved road
*	179	96	Gravel surface
*	0	98	Unconnected roofs,
	12,474	77	Weighted Average
	10,823		86.76% Pervious Area
	1,651		13.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	60	0.0835	0.12		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.12"
1.6	27	0.3330	0.27		**Sheet Flow, Seg B to C** Grass: Dense n= 0.240 P2= 3.12"
9.8	87	Total			

Summary for Subcatchment 24:

Runoff = 0.17 cfs @ 12.27 hrs, Volume= 787 cf, Depth= 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Type III 24-hr 25-Year Rainfall=5.77"

	Area (sf)	CN	Description
*	0	74	>75% Grass cover, Existing, Good, HSG C
*	1,326	74	>75% Grass cover, Proposed, Good, HSG C
	1,910	72	Woods/grass comb., Good, HSG C
*	14	98	Paved road
*	7	96	Gravel surface
*	0	98	Unconnected roofs,
	3,257	73	Weighted Average
	3,243		99.57% Pervious Area
	14		0.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	117	0.0511	0.12		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.12"
2.4	33	0.1970	0.23		**Sheet Flow, Seg B to C** Grass: Dense n= 0.240 P2= 3.12"
19.3	150	Total			

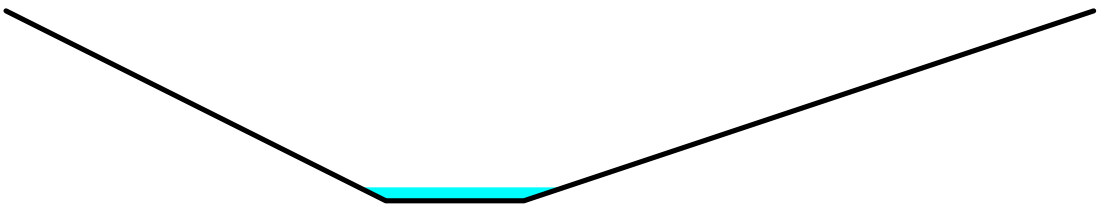
Summary for Reach R1:

Inflow Area = 47,115 sf, 2.83% Impervious, Inflow Depth = 2.99" for 25-Year event
Inflow = 2.12 cfs @ 12.43 hrs, Volume= 11,749 cf
Outflow = 2.12 cfs @ 12.44 hrs, Volume= 11,749 cf, Atten= 0%, Lag= 0.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Max. Velocity= 4.36 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.70 fps, Avg. Travel Time= 1.0 min

Peak Storage= 51 cf @ 12.44 hrs
Average Depth at Peak Storage= 0.20'
Bank-Full Depth= 2.75' Flow Area= 24.4 sf, Capacity= 464.49 cfs

2.00' x 2.75' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 2.0 3.0 '/' Top Width= 15.75'
Length= 105.5' Slope= 0.0900 '/'
Inlet Invert= 331.80', Outlet Invert= 322.30'



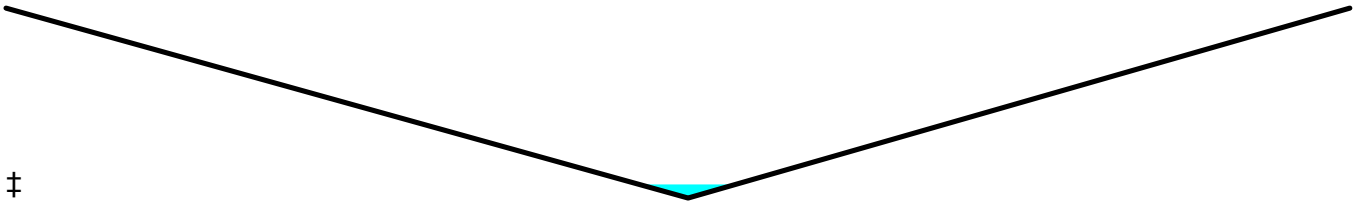
Summary for Reach R11:

Inflow Area = 3,257 sf, 0.43% Impervious, Inflow Depth = 2.90" for 25-Year event
Inflow = 0.17 cfs @ 12.27 hrs, Volume= 787 cf
Outflow = 0.17 cfs @ 12.29 hrs, Volume= 787 cf, Atten= 1%, Lag= 1.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Max. Velocity= 0.56 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 0.26 fps, Avg. Travel Time= 2.2 min

Peak Storage= 11 cf @ 12.29 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 2.00' Flow Area= 59.9 sf, Capacity= 193.69 cfs

Custom cross-section, Length= 34.4' Slope= 0.0058 '/'
Constant n= 0.035 Earth, dense weeds
Inlet Invert= 322.80', Outlet Invert= 322.60'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	346.00	0.00
30.41	344.00	2.00
59.92	346.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
2.00	59.9	60.1	2,061	193.69

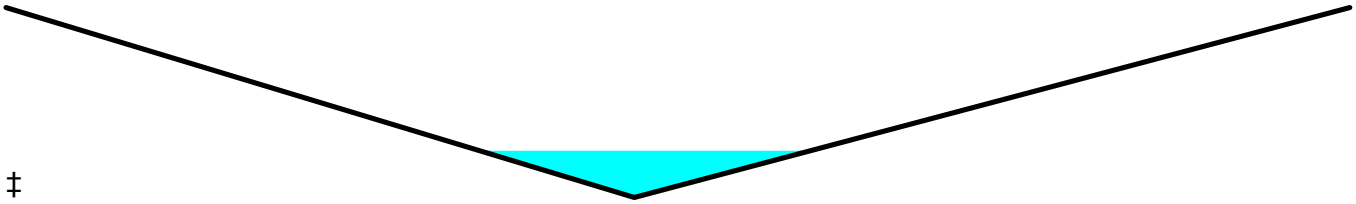
Summary for Reach R12:

Inflow Area = 214,466 sf, 5.31% Impervious, Inflow Depth = 3.03" for 25-Year event
Inflow = 7.25 cfs @ 12.56 hrs, Volume= 54,121 cf
Outflow = 7.26 cfs @ 12.57 hrs, Volume= 54,121 cf, Atten= 0%, Lag= 0.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Max. Velocity= 4.44 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 1.02 fps, Avg. Travel Time= 4.2 min

Peak Storage= 420 cf @ 12.57 hrs
Average Depth at Peak Storage= 0.49'
Bank-Full Depth= 2.00' Flow Area= 26.9 sf, Capacity= 304.41 cfs

Custom cross-section, Length= 257.2' Slope= 0.0719 '/'
Constant n= 0.035 Earth, dense weeds
Inlet Invert= 330.50', Outlet Invert= 312.00'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	334.00	0.00
12.59	332.00	2.00
26.93	334.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
2.00	26.9	27.2	6,926	304.41

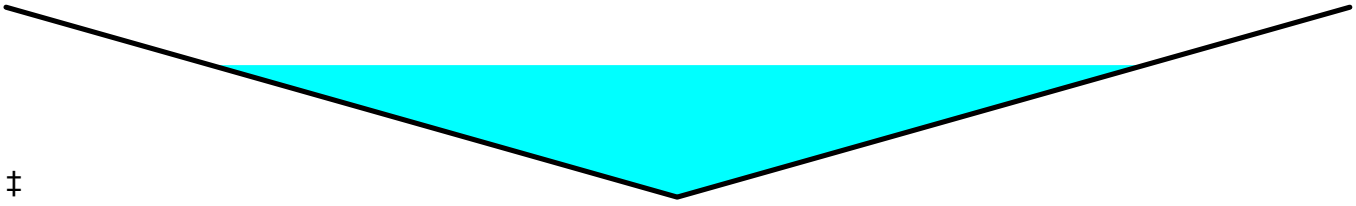
Summary for Reach R3:

Inflow Area = 96,620 sf, 1.73% Impervious, Inflow Depth = 2.94" for 25-Year event
Inflow = 4.47 cfs @ 12.35 hrs, Volume= 23,708 cf
Outflow = 4.47 cfs @ 12.36 hrs, Volume= 23,708 cf, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Max. Velocity= 1.76 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 0.79 fps, Avg. Travel Time= 0.7 min

Peak Storage= 87 cf @ 12.36 hrs
Average Depth at Peak Storage= 0.83'
Bank-Full Depth= 1.20' Flow Area= 5.2 sf, Capacity= 11.80 cfs

Custom cross-section, Length= 34.4' Slope= 0.0058 '/'
Constant n= 0.035 Earth, dense weeds
Inlet Invert= 322.80', Outlet Invert= 322.60'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	324.00	0.00
4.37	322.80	1.20
8.75	324.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
1.20	5.2	9.1	181	11.80

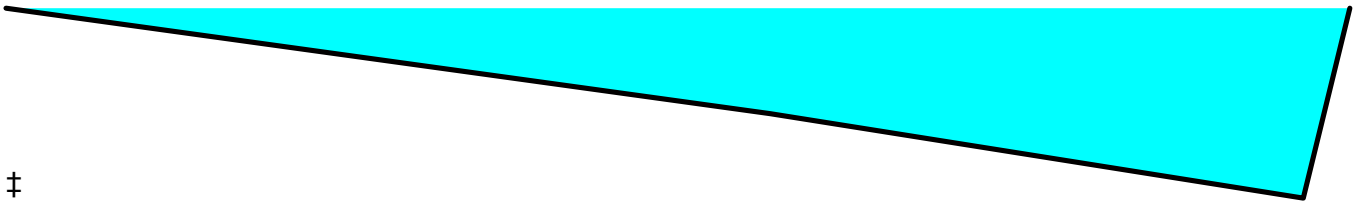
Summary for Reach R4:

Inflow Area = 108,498 sf, 2.97% Impervious, Inflow Depth = 2.97" for 25-Year event
Inflow = 4.91 cfs @ 12.34 hrs, Volume= 26,858 cf
Outflow = 4.87 cfs @ 12.37 hrs, Volume= 26,858 cf, Atten= 1%, Lag= 1.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Max. Velocity= 2.29 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 1.09 fps, Avg. Travel Time= 3.5 min

Peak Storage= 482 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 0.09' Flow Area= 0.8 sf, Capacity= 1.62 cfs

Custom cross-section, Length= 226.9' Slope= 0.0528 '/'
Constant n= 0.022 Earth, clean & straight
Inlet Invert= 323.97', Outlet Invert= 312.00'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	322.09	0.00
11.00	322.04	0.05
18.68	322.00	0.09
19.35	322.09	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
0.04	0.2	8.0	36	0.18
0.09	0.8	19.4	191	1.62

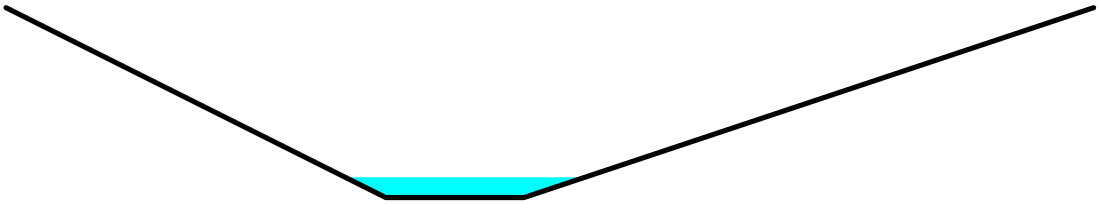
Summary for Reach R5:

Inflow Area = 63,916 sf, 5.14% Impervious, Inflow Depth = 2.99" for 25-Year event
Inflow = 2.93 cfs @ 12.42 hrs, Volume= 15,939 cf
Outflow = 2.93 cfs @ 12.42 hrs, Volume= 15,939 cf, Atten= 0%, Lag= 0.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Max. Velocity= 3.64 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.39 fps, Avg. Travel Time= 1.1 min

Peak Storage= 74 cf @ 12.42 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 2.75' Flow Area= 24.4 sf, Capacity= 308.40 cfs

2.00' x 2.75' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 2.0 3.0 '/' Top Width= 15.75'
Length= 91.7' Slope= 0.0397 '/'
Inlet Invert= 350.00', Outlet Invert= 346.36'



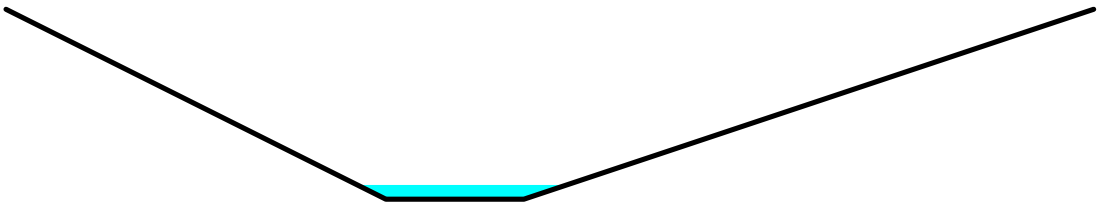
Summary for Reach R7:

Inflow Area = 63,916 sf, 5.14% Impervious, Inflow Depth = 2.99" for 25-Year event
Inflow = 2.93 cfs @ 12.42 hrs, Volume= 15,939 cf
Outflow = 2.93 cfs @ 12.42 hrs, Volume= 15,939 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Max. Velocity= 5.63 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.16 fps, Avg. Travel Time= 0.5 min

Peak Storage= 32 cf @ 12.42 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 2.75' Flow Area= 24.4 sf, Capacity= 579.71 cfs

2.00' x 2.75' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 2.0 3.0 '/' Top Width= 15.75'
Length= 62.1' Slope= 0.1403 '/'
Inlet Invert= 341.59', Outlet Invert= 332.88'



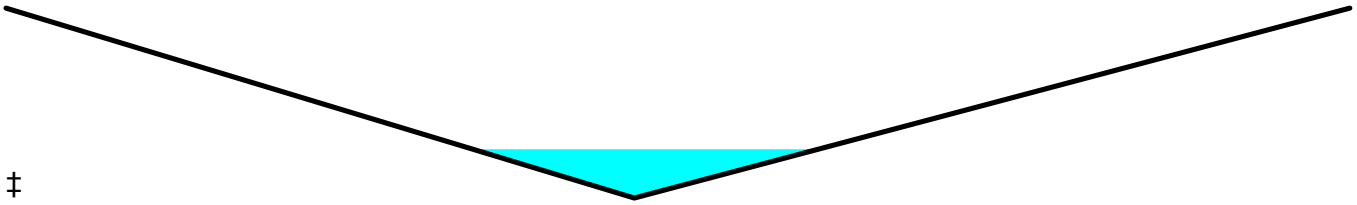
Summary for Reach R9:

Inflow Area = 124,499 sf, 6.44% Impervious, Inflow Depth = 3.06" for 25-Year event
Inflow = 4.62 cfs @ 12.61 hrs, Volume= 31,712 cf
Outflow = 4.71 cfs @ 12.60 hrs, Volume= 31,712 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Max. Velocity= 2.63 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 0.60 fps, Avg. Travel Time= 1.7 min

Peak Storage= 110 cf @ 12.60 hrs
Average Depth at Peak Storage= 0.51'
Bank-Full Depth= 2.00' Flow Area= 26.9 sf, Capacity= 176.83 cfs

Custom cross-section, Length= 61.8' Slope= 0.0243 '/'
Constant n= 0.035 Earth, dense weeds
Inlet Invert= 332.00', Outlet Invert= 330.50'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	334.00	0.00
12.59	332.00	2.00
26.93	334.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
2.00	26.9	27.2	1,664	176.83

Summary for Pond DB1:

Inflow Area = 124,499 sf, 6.44% Impervious, Inflow Depth = 3.06" for 25-Year event
Inflow = 5.35 cfs @ 12.43 hrs, Volume= 31,723 cf
Outflow = 4.62 cfs @ 12.61 hrs, Volume= 31,712 cf, Atten= 14%, Lag= 10.8 min
Primary = 2.68 cfs @ 12.61 hrs, Volume= 4,352 cf
Secondary = 1.94 cfs @ 12.61 hrs, Volume= 27,360 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Peak Elev= 334.35' @ 12.61 hrs Surf.Area= 3,691 sf Storage= 6,146 cf

Plug-Flow detention time= 39.8 min calculated for 31,676 cf (100% of inflow)
Center-of-Mass det. time= 40.8 min (892.2 - 851.4)

Volume	Invert	Avail.Storage	Storage Description
#1	332.30'	8,703 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
332.30	2,352	203.8	0	0	2,352
334.00	3,450	234.4	4,902	4,902	3,482
335.00	4,163	252.4	3,801	8,703	4,221

Device	Routing	Invert	Outlet Devices
#1	Primary	334.00'	**5.0' long x 12.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	332.30'	**8.0" Round Culvert** L= 22.6' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 332.30' / 332.00' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=2.64 cfs @ 12.61 hrs HW=334.34' TW=332.51' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 2.64 cfs @ 1.53 fps)

Secondary OutFlow Max=1.94 cfs @ 12.61 hrs HW=334.34' TW=332.51' (Dynamic Tailwater)
↑—**2=Culvert** (Inlet Controls 1.94 cfs @ 5.56 fps)

Summary for Pond R10:

Inflow Area = 3,257 sf, 0.43% Impervious, Inflow Depth = 2.90" for 25-Year event
Inflow = 0.17 cfs @ 12.27 hrs, Volume= 787 cf
Outflow = 0.17 cfs @ 12.27 hrs, Volume= 787 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 12.27 hrs, Volume= 787 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Peak Elev= 349.66' @ 12.27 hrs
Flood Elev= 348.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	349.45'	**15.0" Round Culvert** L= 40.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 349.45' / 348.94' S= 0.0126 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.17 cfs @ 12.27 hrs HW=349.66' TW=322.94' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.17 cfs @ 1.23 fps)

Summary for Pond R2:

Inflow Area = 96,620 sf, 1.73% Impervious, Inflow Depth = 2.94" for 25-Year event
Inflow = 4.47 cfs @ 12.35 hrs, Volume= 23,708 cf
Outflow = 4.47 cfs @ 12.35 hrs, Volume= 23,708 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.47 cfs @ 12.35 hrs, Volume= 23,708 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Peak Elev= 323.94' @ 12.39 hrs
Flood Elev= 325.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	322.47'	**18.0" Round Culvert** L= 35.5' Ke= 0.500 Inlet / Outlet Invert= 322.47' / 322.30' S= 0.0048 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.26 cfs @ 12.35 hrs HW=323.93' TW=323.63' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 4.26 cfs @ 3.09 fps)

Summary for Pond R6:

Inflow Area = 63,916 sf, 5.14% Impervious, Inflow Depth = 2.99" for 25-Year event
Inflow = 2.93 cfs @ 12.42 hrs, Volume= 15,939 cf
Outflow = 2.93 cfs @ 12.42 hrs, Volume= 15,939 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.93 cfs @ 12.42 hrs, Volume= 15,939 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Peak Elev= 347.24' @ 12.42 hrs
Flood Elev= 348.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	346.36'	**15.0" Round Culvert** L= 57.7' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 346.36' / 341.59' S= 0.0827 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.90 cfs @ 12.42 hrs HW=347.23' TW=341.80' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 2.90 cfs @ 3.18 fps)

Summary for Pond R8:

Inflow Area = 112,025 sf, 5.68% Impervious, Inflow Depth = 3.03" for 25-Year event
Inflow = 4.95 cfs @ 12.45 hrs, Volume= 28,315 cf
Outflow = 4.95 cfs @ 12.45 hrs, Volume= 28,315 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.95 cfs @ 12.45 hrs, Volume= 28,315 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Peak Elev= 334.89' @ 12.58 hrs
Flood Elev= 336.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	332.88'	**15.0" Round Culvert** L= 36.6' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 332.88' / 332.37' S= 0.0139 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.01 cfs @ 12.45 hrs HW=334.65' TW=334.19' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 4.01 cfs @ 3.27 fps)

Summary for Link SP1:

Inflow Area = 322,964 sf, 4.52% Impervious, Inflow Depth = 3.01" for 25-Year event
Inflow = 11.31 cfs @ 12.53 hrs, Volume= 80,979 cf
Primary = 11.31 cfs @ 12.53 hrs, Volume= 80,979 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs

Volume	Invert	Avail.Storage	Storage Description
#1	332.30'	8,703 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
332.30	2,352	203.8	0	0	2,352
334.00	3,450	234.4	4,902	4,902	3,482
335.00	4,163	252.4	3,801	8,703	4,221

Device	Routing	Invert	Outlet Devices
#1	Primary	334.00'	**5.0' long x 12.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	332.30'	**8.0" Round Culvert** L= 22.6' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 332.30' / 332.00' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=4.49 cfs @ 12.54 hrs HW=334.49' TW=332.58' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 4.49 cfs @ 1.85 fps)

Secondary OutFlow Max=2.02 cfs @ 12.54 hrs HW=334.49' TW=332.58' (Dynamic Tailwater)
↑—**2=Culvert** (Inlet Controls 2.02 cfs @ 5.78 fps)

Summary for Pond R10:

Inflow Area = 3,257 sf, 0.43% Impervious, Inflow Depth = 3.80" for 50-Year event
Inflow = 0.23 cfs @ 12.27 hrs, Volume= 1,031 cf
Outflow = 0.23 cfs @ 12.27 hrs, Volume= 1,031 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.23 cfs @ 12.27 hrs, Volume= 1,031 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Peak Elev= 349.70' @ 12.27 hrs
Flood Elev= 348.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	349.45'	**15.0" Round Culvert** L= 40.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 349.45' / 348.94' S= 0.0126 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.22 cfs @ 12.27 hrs HW=349.69' TW=322.96' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.22 cfs @ 1.32 fps)

Summary for Pond R2:

Inflow Area = 96,620 sf, 1.73% Impervious, Inflow Depth = 3.85" for 50-Year event
Inflow = 5.86 cfs @ 12.35 hrs, Volume= 30,991 cf
Outflow = 5.86 cfs @ 12.35 hrs, Volume= 30,991 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.86 cfs @ 12.35 hrs, Volume= 30,991 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Peak Elev= 324.18' @ 12.38 hrs
Flood Elev= 325.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	322.47'	**18.0" Round Culvert** L= 35.5' Ke= 0.500 Inlet / Outlet Invert= 322.47' / 322.30' S= 0.0048 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.64 cfs @ 12.35 hrs HW=324.16' TW=323.72' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 5.64 cfs @ 3.19 fps)

Summary for Pond R6:

Inflow Area = 63,916 sf, 5.14% Impervious, Inflow Depth = 3.90" for 50-Year event
Inflow = 3.83 cfs @ 12.42 hrs, Volume= 20,788 cf
Outflow = 3.83 cfs @ 12.42 hrs, Volume= 20,788 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.83 cfs @ 12.42 hrs, Volume= 20,788 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Peak Elev= 347.41' @ 12.42 hrs
Flood Elev= 348.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	346.36'	**15.0" Round Culvert** L= 57.7' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 346.36' / 341.59' S= 0.0827 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.80 cfs @ 12.42 hrs HW=347.40' TW=341.83' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 3.80 cfs @ 3.48 fps)

Summary for Pond R8:

Inflow Area = 112,025 sf, 5.68% Impervious, Inflow Depth = 3.95" for 50-Year event
Inflow = 6.45 cfs @ 12.45 hrs, Volume= 36,860 cf
Outflow = 6.45 cfs @ 12.45 hrs, Volume= 36,860 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.45 cfs @ 12.45 hrs, Volume= 36,860 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs
Peak Elev= 335.58' @ 12.50 hrs
Flood Elev= 336.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	332.88'	**15.0" Round Culvert** L= 36.6' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 332.88' / 332.37' S= 0.0139 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=6.00 cfs @ 12.45 hrs HW=335.47' TW=334.44' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 6.00 cfs @ 4.89 fps)

Summary for Link SP1:

Inflow Area = 322,964 sf, 4.52% Impervious, Inflow Depth = 3.92" for 50-Year event
Inflow = 16.59 cfs @ 12.46 hrs, Volume= 105,534 cf
Primary = 16.59 cfs @ 12.46 hrs, Volume= 105,534 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.08 hrs

ATTACHMENT 5

INSPECTION, MAINTENANCE & HOUSEKEEPING PLAN

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=62,577 sf 0.00% Impervious Runoff Depth=3.69"
Flow Length=763' Tc=21.4 min CN=72 Runoff=4.06 cfs 19,259 cf

Subcatchment 2: Runoff Area=260,052 sf 0.00% Impervious Runoff Depth=3.69"
Flow Length=761' Tc=37.6 min CN=72 Runoff=13.11 cfs 80,033 cf

Reach R1: Avg. Flow Depth=0.14' Max Vel=2.25 fps Inflow=4.06 cfs 19,259 cf
n=0.022 L=226.9' S=0.0528 '/' Capacity=1.62 cfs Outflow=4.04 cfs 19,259 cf

Reach R8: Avg. Flow Depth=0.61' Max Vel=5.15 fps Inflow=13.11 cfs 80,033 cf
n=0.035 L=257.2' S=0.0719 '/' Capacity=304.41 cfs Outflow=13.10 cfs 80,033 cf

Link SP1: Inflow=16.19 cfs 99,292 cf
Primary=16.19 cfs 99,292 cf

Summary for Subcatchment 1:

Runoff = 4.06 cfs @ 12.30 hrs, Volume= 19,259 cf, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.84"

Area (sf)	CN	Description
9,859	74	>75% Grass cover, Good, HSG C
52,718	72	Woods/grass comb., Good, HSG C
62,577	72	Weighted Average
62,577		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.2	113	0.0533	0.12		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.12"
0.7	149	0.0553	3.79		**Shallow Concentrated Flow, Seg B to C** Unpaved Kv= 16.1 fps
4.1	371	0.0922	1.52		**Shallow Concentrated Flow, Seg C to D** Woodland Kv= 5.0 fps
0.4	130	0.0423	5.44	169.64	**Channel Flow, Seg D to E** Area= 31.2 sf Perim= 63.5' r= 0.49' n= 0.035 Earth, dense weeds
21.4	763	Total			

Summary for Subcatchment 2:

Runoff = 13.11 cfs @ 12.52 hrs, Volume= 80,033 cf, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.84"

Area (sf)	CN	Description
18,347	74	>75% Grass cover, Good, HSG C
241,705	72	Woods/grass comb., Good, HSG C
260,052	72	Weighted Average
260,052		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.3	150	0.0167	0.08		**Sheet Flow, Seg A to B** Woods: Light underbrush n= 0.400 P2= 3.12"
0.8	61	0.0734	1.35		**Shallow Concentrated Flow, Seg B to C** Woodland Kv= 5.0 fps
0.3	125	0.0582	6.30	238.91	**Channel Flow, Seg C to D** Area= 37.9 sf Perim= 78.5' r= 0.48' n= 0.035 Earth, dense weeds
1.0	84	0.0807	1.42		**Shallow Concentrated Flow, Seg D to E** Woodland Kv= 5.0 fps
0.3	86	0.0261	4.96	293.50	**Channel Flow, Seg E to F** Area= 59.2 sf Perim= 121.4' r= 0.49' n= 0.030 Earth, grassed & winding
2.9	255	0.0833	1.44		**Shallow Concentrated Flow, Seg F to G** Woodland Kv= 5.0 fps
37.6	761	Total			

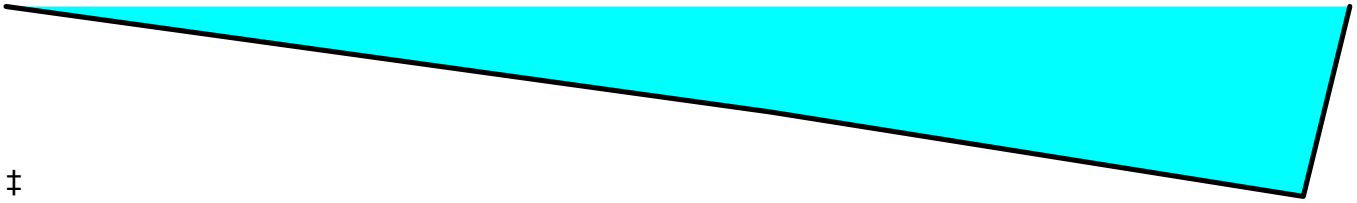
Summary for Reach R1:

Inflow Area = 62,577 sf, 0.00% Impervious, Inflow Depth = 3.69" for 50-Year event
Inflow = 4.06 cfs @ 12.30 hrs, Volume= 19,259 cf
Outflow = 4.04 cfs @ 12.32 hrs, Volume= 19,259 cf, Atten= 1%, Lag= 1.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.25 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 1.04 fps, Avg. Travel Time= 3.6 min

Peak Storage= 408 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 0.09' Flow Area= 0.8 sf, Capacity= 1.62 cfs

Custom cross-section, Length= 226.9' Slope= 0.0528 '/'
Constant n= 0.022 Earth, clean & straight
Inlet Invert= 323.97', Outlet Invert= 312.00'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	322.09	0.00
11.00	322.04	0.05
18.68	322.00	0.09
19.35	322.09	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
0.04	0.2	8.0	36	0.18
0.09	0.8	19.4	191	1.62

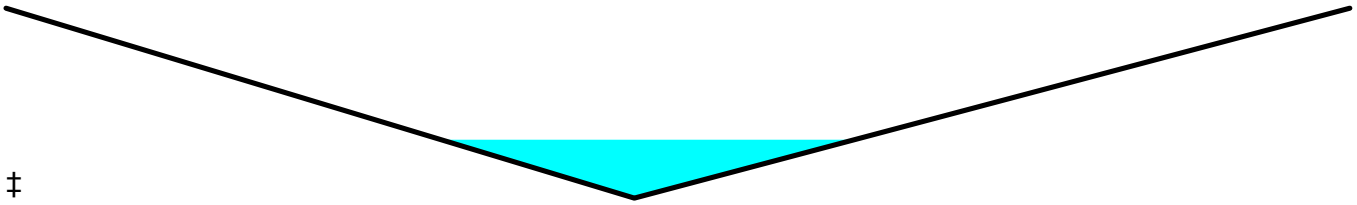
Summary for Reach R8:

Inflow Area = 260,052 sf, 0.00% Impervious, Inflow Depth = 3.69" for 50-Year event
Inflow = 13.11 cfs @ 12.52 hrs, Volume= 80,033 cf
Outflow = 13.10 cfs @ 12.54 hrs, Volume= 80,033 cf, Atten= 0%, Lag= 0.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.15 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.36 fps, Avg. Travel Time= 1.8 min

Peak Storage= 654 cf @ 12.54 hrs
Average Depth at Peak Storage= 0.61'
Bank-Full Depth= 2.00' Flow Area= 26.9 sf, Capacity= 304.41 cfs

Custom cross-section, Length= 257.2' Slope= 0.0719 '/'
Constant n= 0.035 Earth, dense weeds
Inlet Invert= 330.50', Outlet Invert= 312.00'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	334.00	0.00
12.59	332.00	2.00
26.93	334.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
2.00	26.9	27.2	6,926	304.41

Summary for Link SP1:

Inflow Area = 322,629 sf, 0.00% Impervious, Inflow Depth = 3.69" for 50-Year event
Inflow = 16.19 cfs @ 12.49 hrs, Volume= 99,292 cf
Primary = 16.19 cfs @ 12.49 hrs, Volume= 99,292 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

DM ROMA
CONSULTING ENGINEERS

INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN

(Prepared by Jayson Haskell, PE #13002)

CAMBELL ACRES AMENDED SUBDIVISION
LEIUTENANTS DRIVE (OFF JENNY DRIVE)
GRAY, MAINE

Responsible Party

Owner: McDonnell Brothers Custom Builders, LLC.
391 Roosevelt Trail
Windham, Maine 04062

The owner/applicant is responsible for the maintenance of all stormwater management structures and related site components and the keeping of a maintenance log book with service records until a homeowner's association is established. Once the association is established, maintenance will be the responsibility of the homeowners. Records of all inspections and maintenance work performed must be kept on file with the owner and retained for a minimum of five years. The maintenance log will be made available to the Town and Maine Department of Environmental Protection (MDEP) upon request. At a minimum, the maintenance of stormwater management systems will be performed on the prescribed schedule.

The procedures outlined in this plan are provided as a general overview of the anticipated practices to be utilized on this site. In some instances, additional measures may be required due to unexpected conditions. *The Maine Erosion and Sedimentation Control BMP* and *Stormwater Management for Maine: Best Management Practices* Manuals published by the MDEP should be referenced for additional information.

During Construction

1. **Inspection and Corrective Action:** It is the contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. Inspection shall occur on all disturbed and impervious areas, erosion control measures, material storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as 24 hours before and after a storm event generating more than 0.5 inch of rainfall over a 24-hour period and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct the inspections.

2. **Maintenance:** Erosion controls shall be maintained in effective operating condition until areas are permanently stabilized. If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If BMPs need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven calendar days and prior to any rainfall event.

3. **Construction vehicles and equipment:** Construction vehicles and equipment shall not be driven or stored within the stormwater basins. To ensure the basins function as designed perpetually, prohibiting vehicles and equipment from these areas will limit the risk of inhibiting the function of the basins due to compaction.

4. **Documentation:** A report summarizing the inspections and any corrective action taken must be maintained on site. The log must include the name(s) and qualifications of the person making the inspections; the date(s) of the inspections; and the major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicle access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to MDEP and Town staff, and a copy must be provided upon request. The owner shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

Housekeeping

1. **Spill prevention:** Controls must be used to prevent pollutants from construction and waste materials on site to enter stormwater, which includes storage practices to minimize exposure of the materials to stormwater. The site contractor or operator must develop, and implement as necessary, appropriate spill prevention, containment, and response planning measures.

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. Any project proposing infiltration of stormwater must provide adequate pre-treatment of stormwater prior to discharge of stormwater to the infiltration area, or provide for treatment within the infiltration area, in order to prevent the accumulation of fines, reduction in infiltration rate, and consequent flooding and destabilization.

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, but other water additives may be considered as needed. A stabilized construction entrance (SCE) should be included to minimize tracking of mud and sediment. If off-site tracking occurs, public roads should be swept immediately and no less than once a week and prior to significant storm events. Operations during dry months, that experience fugitive dust problems, should wet down unpaved access roads once a week or more frequently as needed with a water additive to suppress fugitive sediment and dust.

4. **Debris and other materials:** Minimize the exposure of construction debris, building and landscaping materials, trash, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials to precipitation and stormwater runoff. These materials must be prevented from becoming a pollutant source.

5. **Excavation de-watering:** Excavation 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 removed from the ponded area, either through gravity or pumping, 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:** Approval from the Town does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with Section 6 above. Specifically, the Town'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.

Post Construction

1. **Inspection and Corrective Action:** All stormwater measures, must be maintained by the owner in effective operating condition. A qualified inspector hired by the owner shall at least annually inspect the stormwater management facilities. This person should have knowledge of erosion and stormwater control including the standards and conditions of the site's approvals. The following areas, facilities, and measures must be inspected, and identified deficiencies must be corrected. Areas, facilities, and measures other than those listed below may also require inspection on a specific site.

   A. **Vegetated Areas:** 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 is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

   B. **Ditches, Swales, and Open Channels:** Inspect ditches, swales, and other open channels in the spring, late fall, and after heavy rains to remove any obstructions to flow, remove accumulated sediments and debris, control vegetative growth that could obstruct flow, and 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. Repair any slumping side slopes as soon as practicable. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or side slopes.

   C. **Storm Drains:** Inspect storm drains in the spring, 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 storm drain's outlet.

D. **Detention Basin:** The detention basin is not intended to function as snow storage areas. Inspector to verify that winter plowing operations are not dumping or pushing snow into the basins. The basins shall also not be used for vehicle or heavy equipment storage.

   The basin shall be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain storage capacity. Any bare areas or erosion rills shall be repaired with new loam then seeded and mulched. The basin should also be inspected annually for destabilization of side slopes, embankment settling and other signs of structural failure. Inspect culvert outlet as indicated in Section 1C and the emergency spillway inspected as indicated in Section 1E.

E. **Emergency Spillway:** Spillways should be inspected semi-annually and following major storm events for the first year and every six months thereafter to remove any obstructions to flow. Any woody vegetation growing through riprap lining must be removed. Replace riprap on areas where any underlying filter fabric is showing through the stone or where stones have been dislodged.

F. **Regular Maintenance:** Clear accumulations of winter sand along roadway and parking areas once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along pavement shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader.

G. **Documentation:** Keep a log (report) summarizing inspections, maintenance, and any corrective actions taken. The log must include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal. The log must be made accessible to Town staff upon request. The permittee shall retain a copy of the log for a period of at least five years from the completion of permanent stabilization. Attached is a sample log.

Duration of Maintenance

Perform maintenance as described.

INSPECTION AND MAINTENANCE LOG – GENERAL INSPECTION

CAMBELL ACRES AMENDED SUBDIVISION
LEIUTENANTS DRIVE (OFF JENNY DRIVE)
GRAY, MAINE

The following stormwater management and erosion control items shall be inspected and maintained as prescribed in the Maintenance Plan with recommended frequencies as identified below. The owner is responsible for keeping this maintenance log on file for a minimum of five years and shall provide a copy to the Town upon request. Inspections are to be performed by a qualified third-party inspector and all corrective actions shall be performed by personnel familiar with stormwater management systems and erosion controls.

Maintenance Item	Maintenance Event	Date Performed	Responsible Personnel	Comments
Vegetated Areas	Inspect slopes and embankments early in Spring.			
Ditches, swales and other open channels	Inspect after major rainfall event.			
	Inspect for erosion or slumping and repair			
	Mowed at least annually			
Storm Drains	Inspect semiannually and after major rainfall.			
	Repair erosion at inlet or outlet of pipe.			
	Repair displaced riprap.			
	Clean accumulated sediment in culverts when >20% full.			
Regular Maintenance	Clear accumulation of winter sand in paved areas annually.			

INSPECTION AND MAINTENANCE LOG – DETENTION BASIN

CAMBELL ACRES AMENDED SUBDIVISION
LEIUTENANTS DRIVE (OFF JENNY DRIVE)
GRAY, MAINE

The following stormwater management and erosion control items shall be inspected and maintained as prescribed in the Maintenance Plan with recommended frequencies as identified below. The owner is responsible for keeping this maintenance log on file for a minimum of five years and shall provide a copy to the Town upon request. Inspections are to be performed by a qualified third-party inspector and all corrective actions shall be performed by personnel familiar with stormwater management systems and erosion controls.

Maintenance Item	Maintenance Event	Date Performed	Responsible Personnel	Comments
Detention Basin	Check after each rainfall event to ensure that pond drains dry			
	Mow grass at least annually to control growth of woody vegetation			
	Inspect semi-annually for erosion or sediment accumulation and repair as necessary.			
	Inspector to verify basin not utilized for vehicle or heavy equipment storage.			
Emergency Spillway	Inspect and remove obstructions as necessary.			
	Remove woody vegetation.			
	Replace riprap as necessary.			

WAIVER REQUESTS

The applicant would like the Planning Board to consider granting waivers to the following requirements:

- High Intensity Soil Survey
- Street light requirement
- Stone or Concrete monuments at all property corners

The applicant is requesting the Planning Board consider granting a waiver from the requirement of having a high-intensity soil survey performed for the project site. Soil test pits conducted on the project site confirm that the medium intensity soil mapping is accurate in the vicinity of the test pits. Additionally, a geologist has been retained to provide septic designs (HHE-200) and hydrogeologic assessment for the project. We expect to have the HHE-200s prior to submission for Final Subdivision approval.

The applicant is requesting the Planning Board consider granting a waiver from the requirement to install and maintain a streetlight at the end of the proposed subdivision road. The proposed subdivision is relatively short in length and will not be maintained or accepted as a public road by the Town, and will not adversely affect the safety condition at the end of the proposed subdivision road. Additionally, we heard from the neighboring community that they are unanimously opposed to the addition of a street light.

The applicant is requesting the Planning Board consider granting a waiver from the requirement that all property corners be monumented with stone or concrete bounds. Many of the proposed property corners are located within stonewalls. Setting property pins (capped iron rebar typically) in a stonewall is difficult to do with accuracy. Setting stone or concrete pre-cast bounds would be even more difficult and would likely require a portion of the stonewall wall to be removed in the vicinity of the property corner. As illustrated on the amended subdivision plan, proposed property corners located in existing stonewalls are being proposed as pins, while at all other locations stone or concrete bounds shall be installed.











FRONT ELEVATION



RIGHT ELEVATION



REAR ELEVATION



LEFT ELEVATION

ANDREWS
HOMES BY DESIGN
44 Frost Farm rd. Bridgton ME. 04009 207-890-6075 andrews.hbd@gmail.com

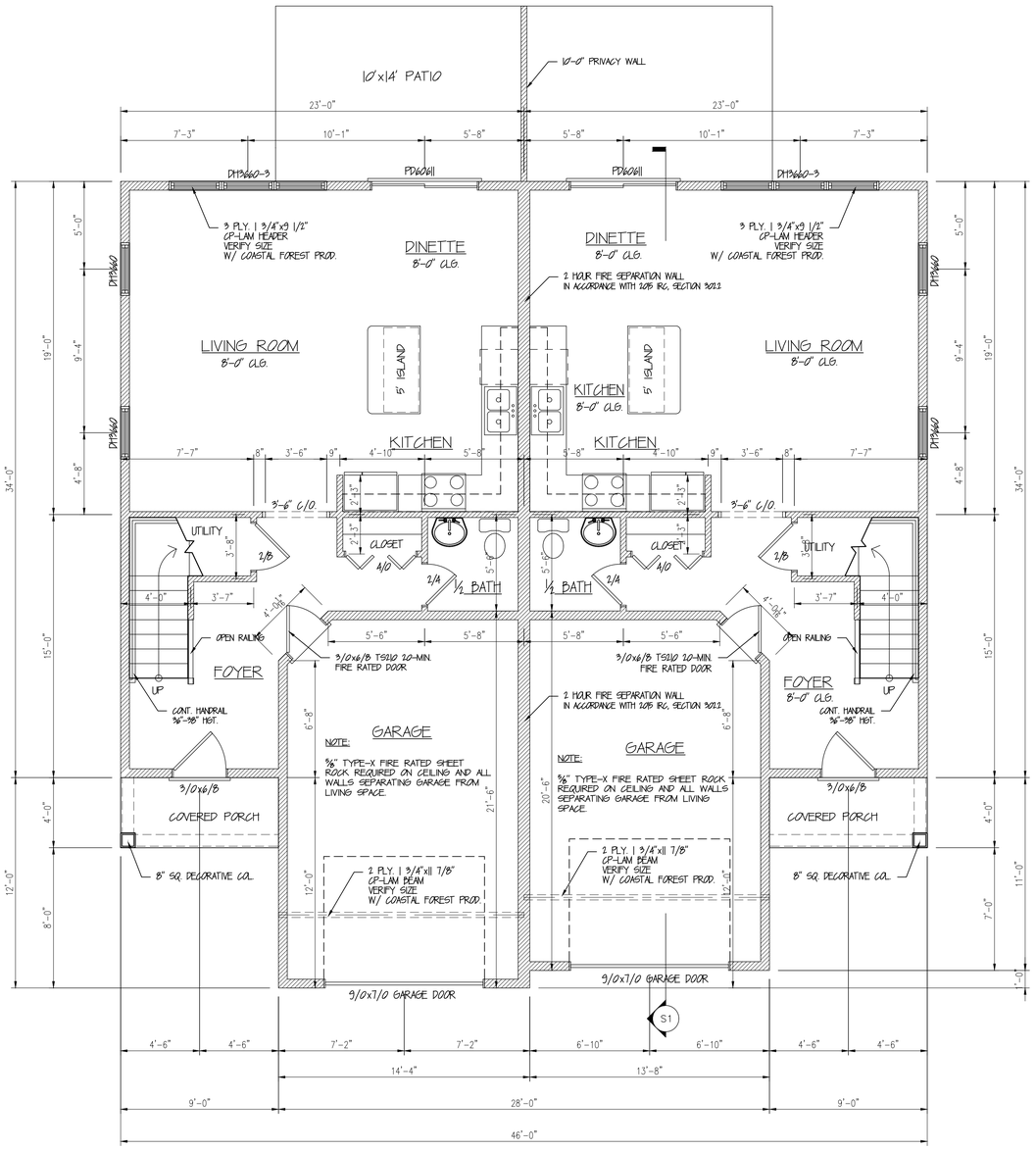
ELEVATIONS
MCDONNELL BROS.
MULTI-FAMILY UNIT

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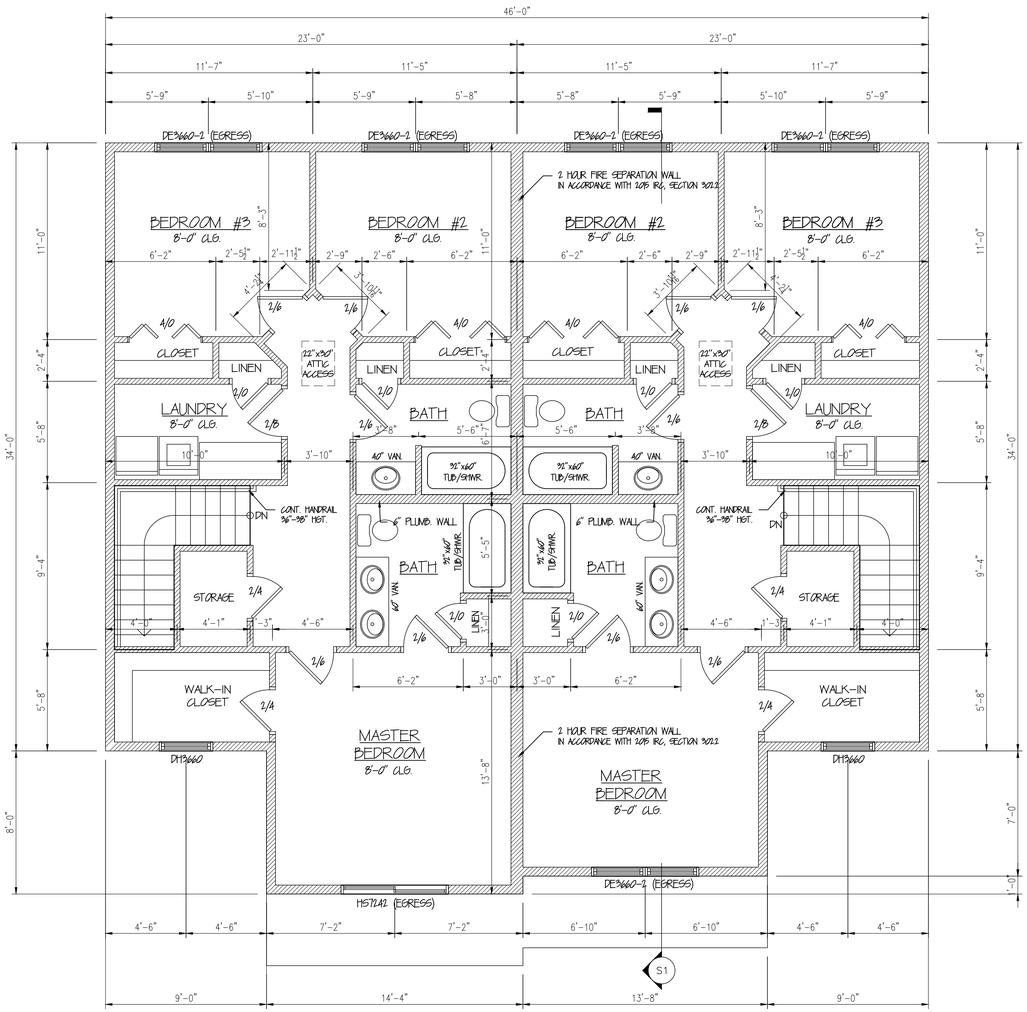
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Drawn By: MTA
Project: M113018
Sheet Number:
-of-



FIRST FLOOR PLAN
653 SQFT. PER UNIT



SECOND FLOOR PLAN
894 SQFT. PER UNIT

NOTE:

SMOKE ALARMS SHALL BE INTERCONNECTED & INSTALLED IN THE FOLLOWING LOCATIONS:

1. EACH SLEEPING AREA
2. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM.
3. ON EACH ADDITIONAL STORY OF THE DWELLING INCLUDING BASEMENT.
4. FIRE SEPARATION PER TOWN OR LOCAL CODE WHEN REQUIRED.

• DENOTES EGRESS WINDOW

CONSTRUCTION NOTE:

CONTRACTOR TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE STARTING NEW CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. OR LOCAL CODES.

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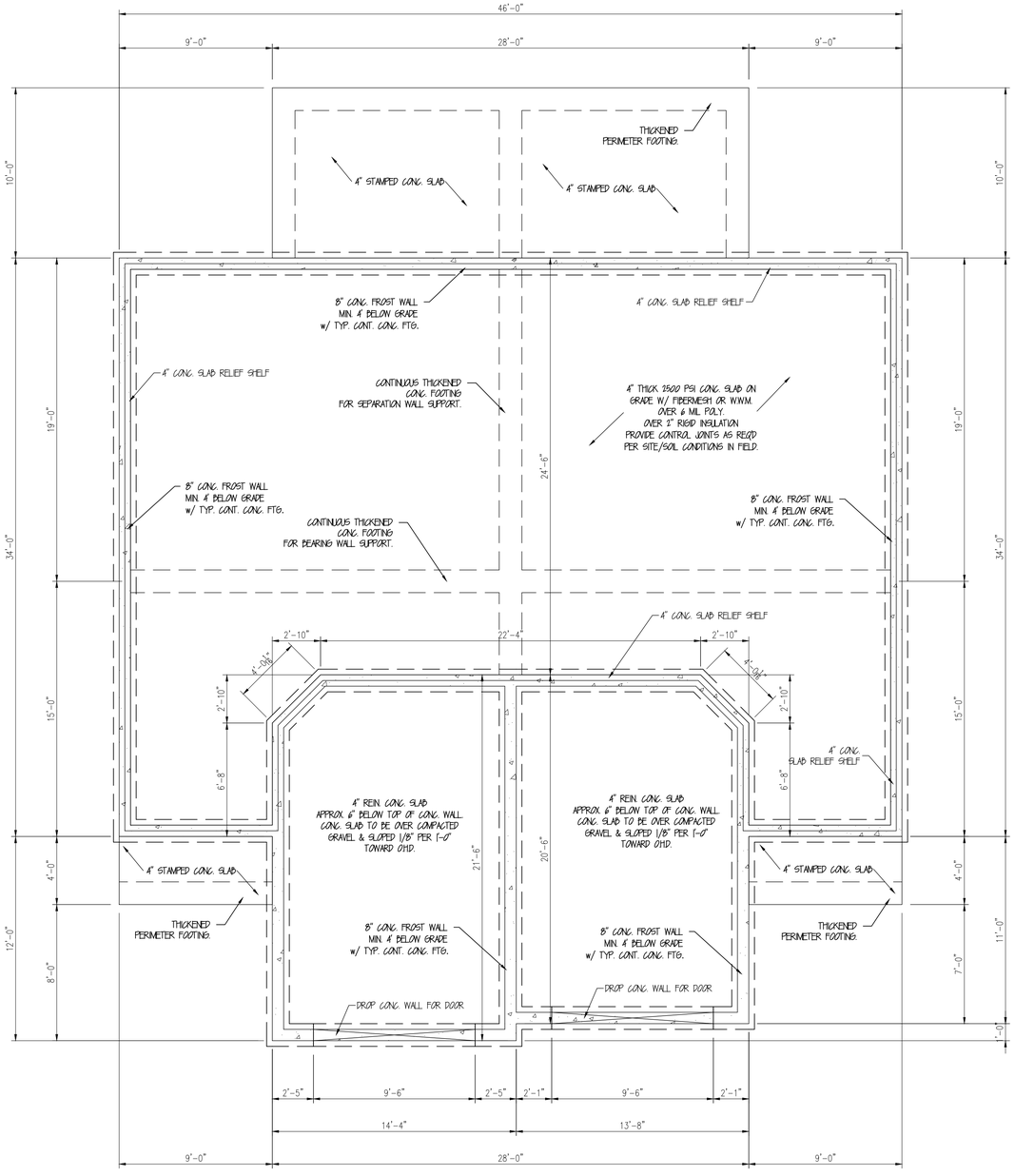
FLOOR PLANS
MCDONNELL BROS.
MULTI-FAMILY UNIT

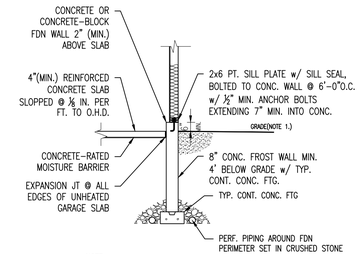
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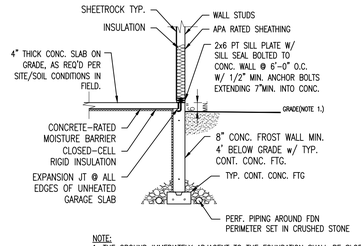


NOTE:

1. THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF 1/2" VERTICAL TO 12" HORIZONTAL FOR A MINIMUM DISTANCE OF 8'-0". THIS CONDITION SHALL EXIST AFTER SETTLEMENT OF BACKFILL HAS OCCURRED.

2. WHEN CONNECTED TO A RESIDENTIAL USE, THE GARAGE FLR SHALL BE AT LEAST 4" LOWER THAN THE ENTRANCE TO THE RESIDENCE. THE 4" SHALL BE POURED IN PLACE WITH CONCRETE

TYPICAL GARAGE SLAB / FDN WALL DETAIL
1/4" = 1'-0"



NOTE:

1. THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF 1/2" VERTICAL TO 12" HORIZONTAL FOR A MINIMUM DISTANCE OF 8'-0". THIS CONDITION SHALL EXIST AFTER SETTLEMENT OF BACKFILL HAS OCCURRED.

TYPICAL RADIANT-HEAT/SLAB DETAIL
1/4" = 1'-0"

M FOUNDATION NOTES:

1. 4" DIA. CONTINUOUS PERF. PERIMETER DRAIN WITH HOLES ORIENTED DOWN. SLOPED TO DAYLIGHT OR TO STORM SEWER OR DRYWELL.
2. ALL LALLY COLUMNS THIS SHEET ASSUMED TO BE TYP.
3. ALL INTERIOR FOOTINGS TO BE DESIGNED PER SOIL CONDITIONS. CONTRACTOR TO VERIFY.
4. DECK SUPPORTS ASSUMED TO BE 10" DIA. SONOTUBES. SOIL CONDITIONS TO DETERMINE FOOTING DESIGN. CONTRACTOR TO VERIFY.
5. FOR PLUMBING LOCATION/LAYOUT, SEE GROUND FLOOR PLAN.
6. CONTRACTOR TO VERIFY CONDITIONS IN FIELD AND STEP FND./FTGS AS REQUIRED PER GRADE. AND SOIL CONDITIONS
7. BASEMENT FINISHES PER OWNER/CONT. (TO BE DETERMINED)
8. CONTRACTOR TO VERIFY GRADE IN FIELD BEFORE CONSTRUCTION OF TYPICAL FOUNDATION WALLS OR DAYLIGHT BASEMENT. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. AND LOCAL ODES.

FOUNDATION PLAN

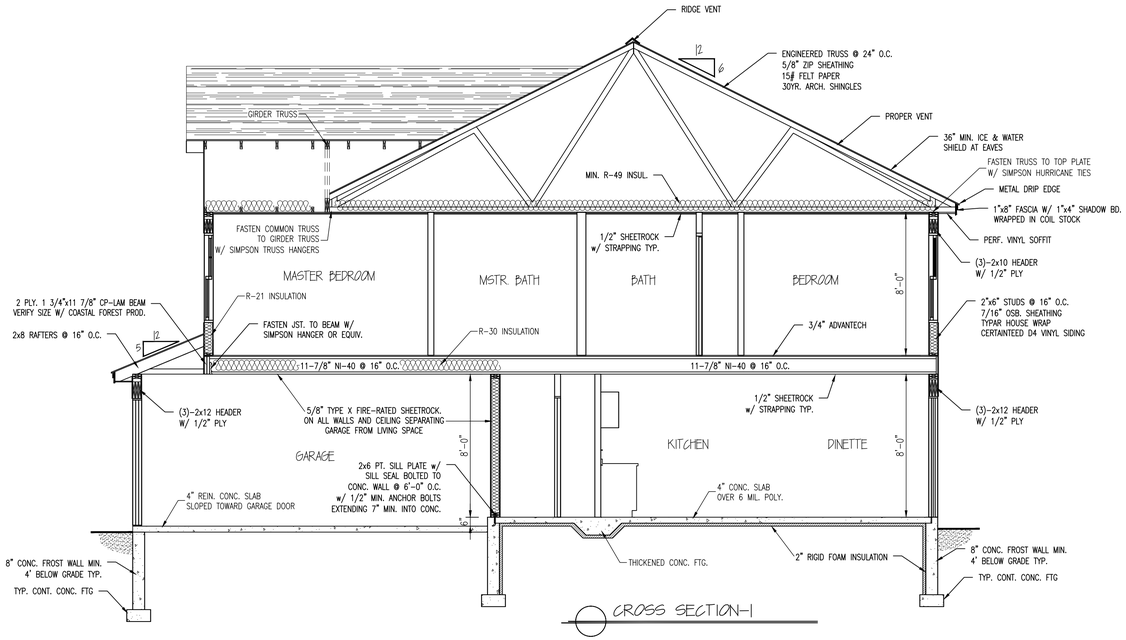
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FOUNDATION PLAN
MCDONNELL BROS.
MULTI-FAMILY UNIT

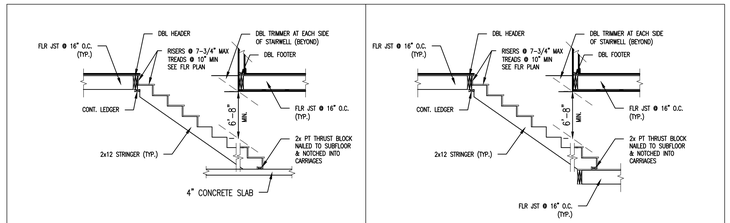
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CROSS SECTION-1



NOTE:

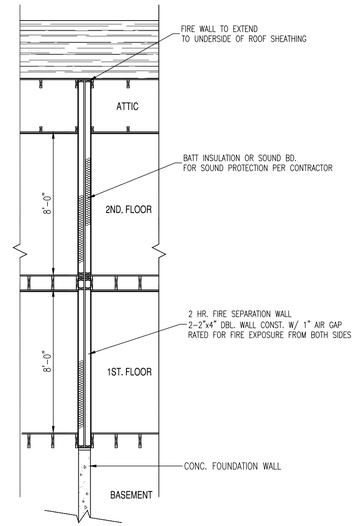
1. SUBSTITUTE RAFTER, CL JSTS & STUD WALL SIZES WITH PLAN CALL OUT

TYPICAL STAIR FRAMING
N.T.S.

NOTE:

1. SUBSTITUTE RAFTER, CL JSTS & STUD WALL SIZES WITH PLAN CALL OUT

TYPICAL STAIR FRAMING
N.T.S.



FIRE -RESISTANT CONSTRUCTION

SECTION 302.2

COMMON WALLS SEPARATING TOWNHOUSES SHALL BE ASSIGNED A FIRE RESISTANCE RATING ACCORDANCE WITH SECTION R302.2, ITEM 1,2 OR 3.
THE COMMON WALL SHARED BY TWO TOWNHOUSES SHALL BE CONSTRUCTED WITHOUT PLUMBING OR MECHANICAL EQUIPMENT, DUCTS OR VENTS IN THE CAVITY OF THE COMMON WALL. THE WALL SHALL BE RATED FOR FIRE EXPOSURE FROM BOTH SIDES AND SHALL EXTEND TO AND BE TIGHT AGAINST EXTERIOR WALLS AND THE UNDERSIDE OF THE ROOF SHEATHING.

A. WHERE A FIRE SPRINKLER IN ACCORDANCE WITH NFPA 13D IS PROVIDED THE COMMON WALL SHALL NOT BE LESS THAN A 2-HOUR FIRE RESISTANCE RATED WALL ASSEMBLY TESTED IN ACCORDANCE WITH ASTM E 119 OR UL 263

B. WHERE A FIRE SPRINKLER IS NOT PROVIDED THE COMMON WALL SHALL NOT BE LESS THAN A 2-HOUR FIRE RESISTANCE RATED WALL ASSEMBLY TESTED IN ACCORDANCE WITH ASTM E 119 OR UL 263 AND MEETING THE REQUIREMENTS OF NFPA 221 AS A FIRE WALL

C. WHERE A FIRE SPRINKLER IN ACCORDANCE WITH SECTION NFPA 13R IS PROVIDED THE COMMON WALL SHALL BE NOT LESS THAN A 1-HOUR FIRE RESISTANCE RATED WALL ASSEMBLY TESTED IN ACCORDANCE WITH ASTM E 119 OR UL 263.

FIRE -RESISTANT CONSTRUCTION

FIRE SEPARATION WALLS SHALL COMPLY WITH SECTION 709 OF THE 2009 IBC. MIN. FIRE RESISTANCE RATING OF 1HR. IN ACCORDANCE WITH ASTME E 119 OR UL 263 W/ EXPOSURE FROM BOTH SIDES

WALL SHALL BE CONTINUOUS FROM FOUNDATION TO THE UNDERSIDE OF ROOF SHEATHING PER SECTION R302.2.1 OF THE 2015 IRC.

ANDREWS
HOMES BY DESIGN
44 Frost Farm rd. Bridgton ME. 04009 207-890-6075 andrews.hbd@gmail.com

SECTION DETAILS
MCDONNELL BROS.
MULTI-FAMILY UNIT

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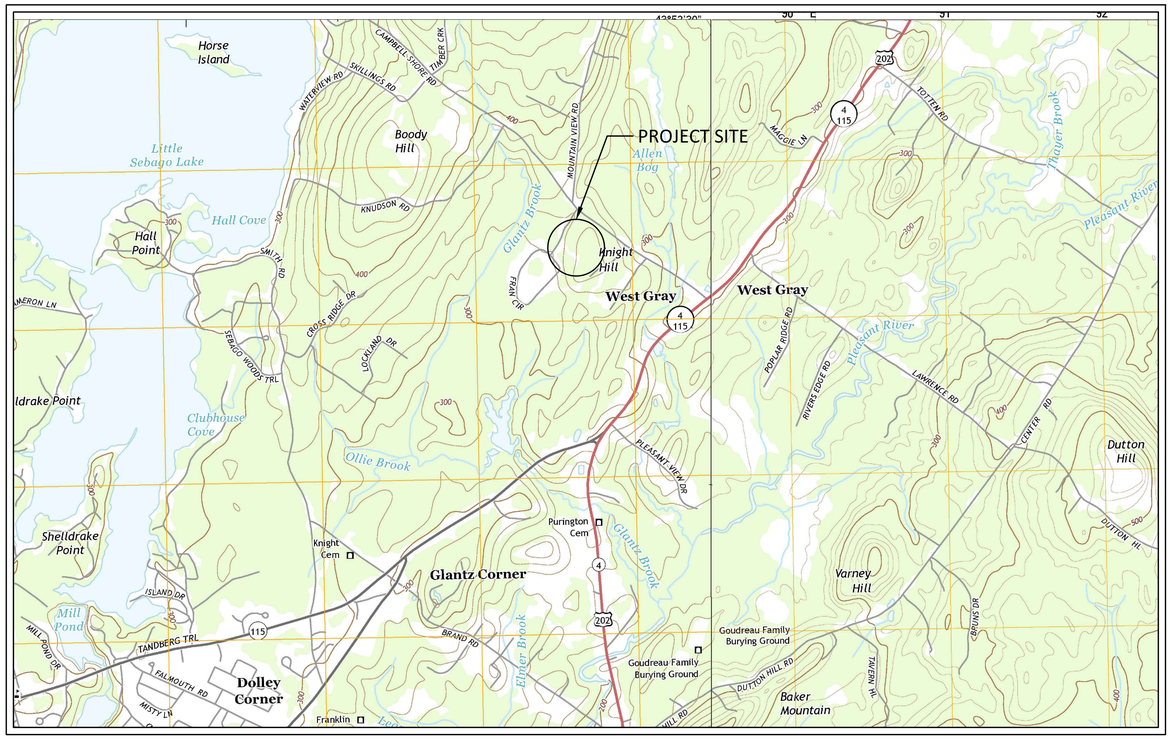
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CAMBELL ACRES SECOND AMENDED SUBDIVISION

JENNY DRIVE - LIEUTENANTS DRIVE
GRAY, MAINE

CONSULTANTS

CIVIL ENGINEER	DM ROMA CONSULTING ENGINEERS
LAND SURVEYOR	SURVEY, INC.
SITE EVALUATOR	MAINELY SOILS, LLC



PROJECT VICINITY MAP

ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION
SEPTEMBER 21, 2023

PREPARED BY:

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

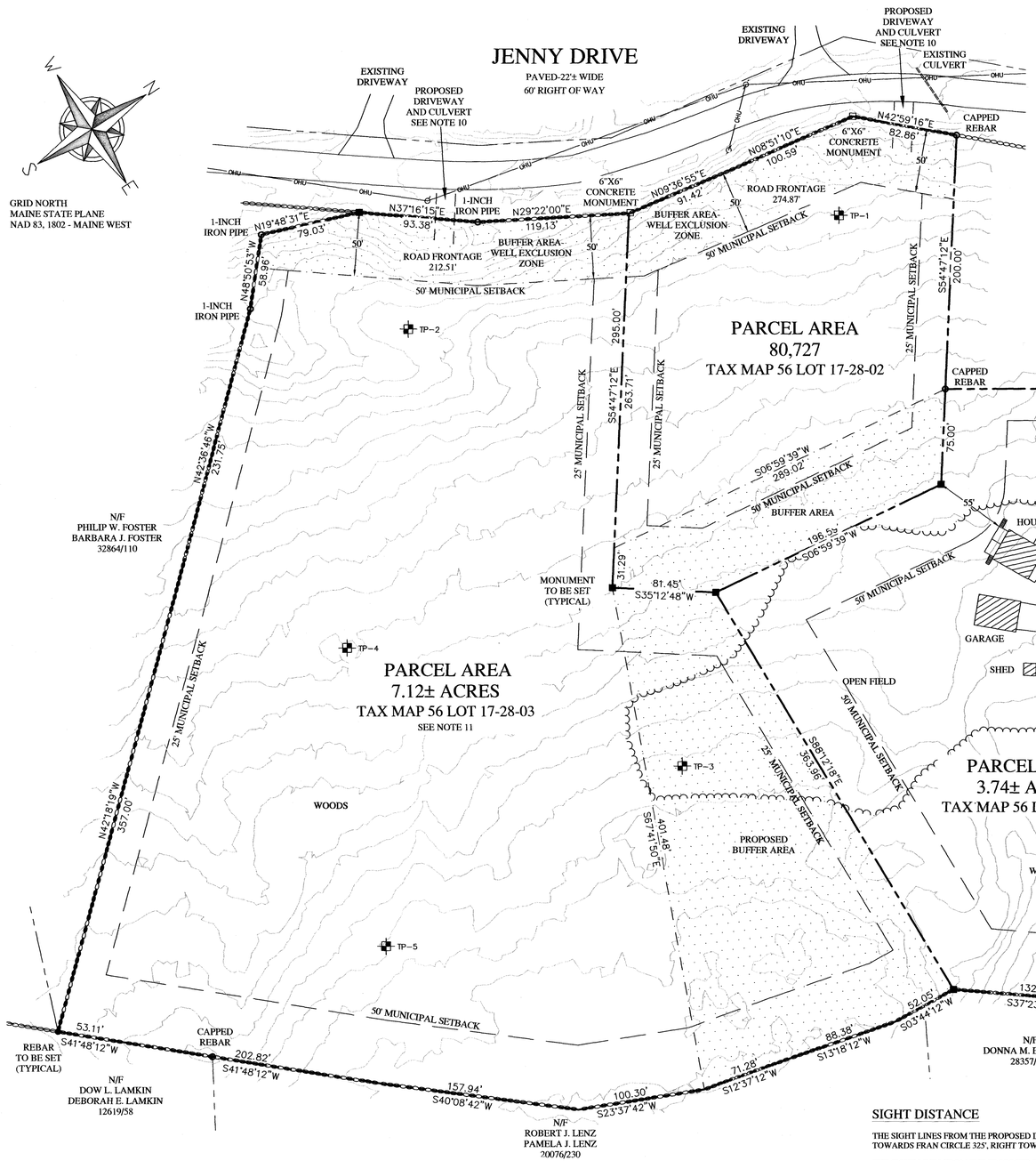
APPLICANT:

McDONNELL BROTHERS CUSTOM BUILDERS, LLC.
391 ROOSEVELT TRAIL
WINDHAM, MAINE 04062

CAMBELL ACRES SECOND AMENDED SUBDIVISION

DRAWING SHEET INDEX

PAGE NO.	DESCRIPTION
1	TITLE SHEET
2	AMENDED SUBDIVISION PLAN CAMBELL ACRES
3	SECOND AMENDED SUBDIVISION PLAN
4	ROADWAY PLAN AND PROFILE: LIEUTENANTS DRIVE
5	DETAILS
6	DETAILS



State of Maine, Cumberland SS.
Registry of Deeds
Received May 11, 20 22
at 11 h 34 m A M and recorded in
Plan Book 222 Page 174
Attest: _____ Register

ZONING:

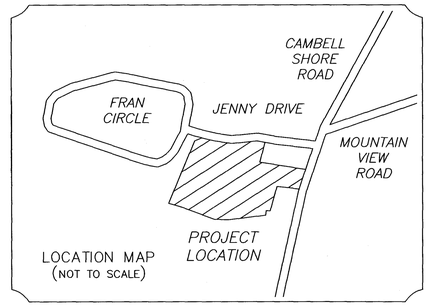
THE PARCEL IS LOCATED WITHIN THE RURAL RESIDENTIAL AND AGRICULTURAL DISTRICT WITH THE FOLLOWING CURRENT DIMENSIONAL REQUIREMENTS:

MINIMUM LOT AREA	80,000 SF
MINIMUM STREET FRONTAGE	200'
MAXIMUM LOT COVERAGE	10%
MINIMUM LOT LINE SETBACK FRONT	50'
MINIMUM LOT LINE SETBACK SIDE	25'
MINIMUM LOT LINE SETBACK REAR	50'
MAXIMUM BUILDING HEIGHT	35'

REFERENCE IS MADE TO THE ZONING ORDINANCE FOR THE TOWN OF GRAY FOR ADDITIONAL INFORMATION.

FLOOD NOTE

THAT THIS LOT DOES NOT, BY SCALING METHODS, FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR THE TOWN OF GRAY, MAINE COMMUNITY PANEL NO. 230048-0015A WITH AN EFFECTIVE DATE OF JANUARY 6, 1982.



NET RESIDENTIAL AREA CALCULATION

Zone	RRA
Total Area (in square feet)	390874
4D.2.a. Slopes 25% or steeper	17189
D.2.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	82993
D.2.c. All land areas within the 100-year floodplain FEMA FIRM Maps regardless of any other classification.	0
D.2.d. Land situated below the normal high water mark of any water body	0
D.2.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.	0
D.2.f. All lands that have been determined to be a liquidation harvesting.	0
D.2.g. Unusable areas larger than 1,500 sf such as significant rock outcroppings, etc.	0
D.2.h. Land area consisting of unreclaimed gravel pits	0
D.2.i. Poorly drained soils unless located in a Forested Wetland that are to remain undeveloped and not located in a 100-year floodplain	0
D.2.j. Very poorly drained soils.	0
Subtotal of D.2 series	
100182	
D.3.a. Somewhat poorly drained soils	0
D.3.b. Land designated as Resource Protection District that remain undeveloped	0
D.3.c. Forested Wetlands that remain undeveloped not located in a 100-year floodplain	0
D.3.d.i. Significant Wildlife habitat as mapped by MDIF&W	0
D.3.d.ii. Significant Wildlife habitats determined by the applicant in consultation with the MDIF&W	0
D.3.d.iii. Endangered botanical resources as mapped by Maine Natural Areas Program	0
D.3.d.iv. Endangered botanical resources as determined by applicant consultation with the Maine Department of Conservation	0
Subtotal of D.3 series:	
0	
50% of D.3 series:	
0	
Total Deductions from D.2 & D.3 series:	
100182	
Subtotal of Remaining Area:	
290692	
D.5 Roads & ROWs deduction: 10% of remaining area or actual area of ROW (whichever is greater)	0
Net Residential Area	290692
Minimum Land Area per Dwelling Unit	80000
Net Residential Density	3.63365

The Planning Board, at its meeting held on April 14, 2022, also voted 3-0 to waive the following subdivision requirements:

- 401.13.6 open space
- 401.13.6 f homeowner's association
- 401.13.8 financial and technical capacity
- 401.13.12 stormwater management
- 401.13.18 C.3.c field verification of soils

PLAN REFERENCES:

(1) PLAN OF PROPERTY IN GRAY MAINE MADE FOR VERA G. JORDAN DATED MAY 23, 1973 REVISED JUNE 7, 1973 BY HI AND EC JORDAN.

(2) CAMPBELL ACRES GRAY, MAINE FINAL SUBDIVISION PLAN K. NORTON & J. GENDRON SOUTH PORTLAND, MAINE DATED OCTOBER 1974 BY LAND USE CONSULTANTS, INC RECORDED IN PLAN BOOK 104 PAGE 27 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

(3) CAMPBELL SUBDIVISION GRAY MAINE RECORDED IN PLAN BOOK 115 PAGE 4 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

(4) SUBDIVISION PLAN OF CAMPBELL ACRES GRAY, MAINE FOR KERRY NORTON AND EDSON SOBEY DATED OCT. 5, 1977 BY JACK BERMAN, INC. RECORDED IN PLAN BOOK 119 PAGE 65 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

(5) STANDARD BOUNDARY SURVEY ON CAMPBELL SHORE ROAD GRAY, MAINE FOR SUZANNE TANBERG DATED OCTOBER 1994 BY WAYNE T. WOOD AND CO. RECORDED IN PLAN BOOK 195 PAGE 403 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

(6) RESUBDIVISION PLAN OF LOT 1 CAMPBELL ACRES SUBDIVISION FOR FRANCIS L. AND VERNA L. MACKELL FRAN CIRCLE AND JENNY DRIVE DATED JANUARY 8, 1988 BY JOHN D. PALMITER RECORDED IN PLAN BOOK 170 PAGE 58 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

(7) BOUNDARY SURVEY CAMPBELL SHORE ROAD GRAY, MAINE FOR: KRISTIN STANLEY DATED OCTOBER 2021 BY SURVEY INC.

(8) THE THREE LOTS SHOWN ON THIS PLAN ARE A SUBDIVISION OF LOT #1 ON A 1974 PLAN RECORDED IN PLAN BOOK 104, PAGE 27 CCRD. ON 9-10-98, THE GRAY PLANNING BOARD APPROVED AN AMENDMENT THAT SPLIT OFF A PORTION OF LOT #1 TO CARL AND ANGELA HIGGINS. THIS 1998 PLAN WAS NEVER SIGNED OR RECORDED; IT IS ON FILE AT GRAY TOWN HALL. ADDITIONAL DETAILS ARE IN THE PLANNING BOARD NOTICE OF DECISION FOR THIS 2022 AMENDED PLAN, ALSO AT GRAY TOWN HALL.

SIGHT DISTANCE

THE SIGHT LINES FROM THE PROPOSED DRIVEWAY ON LOT 17-28-03 ARE: LEFT TOWARDS FRAN CIRCLE 325', RIGHT TOWARDS CURVE ON JENNY DRIVE 350'

THE SIGHT LINES FROM THE PROPOSED DRIVEWAY ON LOT 17-28-02 ARE: LEFT TOWARDS CURVE ON JENNY DRIVE 290', RIGHT TOWARDS CAMPBELL SHORE ROAD 325'
THE SPEED LIMIT ON JENNY DRIVE IS ASSUMED TO BE 25 MPH.

CERTIFICATION:

I CERTIFY THAT THIS SURVEY CONFORMS TO THE STANDARDS OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS AND IS CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

WILLIAM C. SHIPPEN P.L.S. 2118

STATE OF MAINE WILLIAM C. SHIPPEN 2118 PROFESSIONAL LAND SURVEYOR

SURVEY NOTES:

(1) THE OWNERS OF RECORD ARE KRISTIN A. STANLEY AND PHILIP M. STANLEY AS DESCRIBED IN A DEED RECORDED IN BOOK 38846 PAGE 201 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

(2) THE PARCEL IS SHOWN AS LOT 17-28-00 ON THE TOWN OF GRAY ASSESSORS MAP 56.

(3) BEARINGS ARE GRID NORTH, MAINE STATE PLANE 1802 WEST ZONE.

(4) VERTICAL DATUM- NAVD 88

(5) LIMITS OF THE OPEN FIELD WERE TAKEN FROM GOOGLE EARTH IMAGERY.

(6) TEST PIT INFORMATION WAS PROVIDED BY MAINELY SOILS DURHAM, MAINE. TEST PITS 1 AND 2 ARE FOR PROPOSED SEPTIC SYSTEMS. TEST PITS 3,4 AND 5 ARE FOR THE WETLAND AND SOIL ASSESSMENT.

(7) CONTOURS SHOWN ARE TAKEN FROM THE NOAA DIGITAL COAST: DATA ACCESS VIEWER.

(8) BUFFER AREAS ARE SUBJECT TO LIMITED CUTTING OF TREES AND VEGETATION. NO BUILDINGS ARE TO BE LOCATED WITHIN THE BUFFER AREAS.

(9) THERE SHALL BE NO CONSTRUCTION WITHIN THE 50' FORESTED BUFFERS BETWEEN THE LOTS AND ALONG THE ROAD FRONTAGE, OTHER THAN THE NECESSARY CLEARING FOR THE APPROVED DRIVEWAYS. FORESTED BUFFERS AS SHOWN ON SAID PLAN SHALL BE KEPT IN A NATURAL VEGETATIVE STATE WITH ONLY DEAD DISEASED TREES OR TREES THAT POSE A SAFETY HAZARD THAT MAY BE REMOVED IN KEEPING WITH THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION REGULATIONS, CHAPTER 500.

(10) DRIVEWAYS WILL ADHERE TO THE DRIVEWAY STANDARDS OUTLINED IN 401.13.16-17 AND THE TOWN OF GRAY STREET ORDINANCE, CHAPTER 400 SECTION 5. ENGINEERING MAY BE REQUIRED. THE TWO DRIVEWAY LOCATIONS SHOWN ON THIS PLAN ARE FIXED. ANY OTHER LOCATION FOR THE TWO DRIVEWAYS OR ANY ADDITIONAL DRIVEWAYS MUST BE APPROVED BY THE GRAY PLANNING BOARD.

(11) FURTHER SUBDIVISION OF THIS LOT MAY NOT BE MADE WITHOUT THE EXPRESS APPROVAL OF THE PLANNING BOARD OF THE TOWN OF GRAY. NO ADDITIONAL CURB CUTS ARE ALLOWED WITHOUT EXPRESS APPROVAL OF THE PLANNING BOARD OF THE TOWN OF GRAY.

(12) SPRINKLER INSTALLATION IS REQUIRED FOR ANY DWELLING UNIT INSTALLED ON LOTS 56-17-28-02 AND 56-17-28-03. SPRINKLERS ARE NOT REQUIRED FOR THE EXISTING SINGLE-FAMILY HOME ON LOT 56-17-28-00.

(13) THESE TWO NEW LOTS WILL BE SERVED BY INDIVIDUAL DRILLED WELLS AND ON-SITE SEPTIC SYSTEMS.

NOTE

THE PURPOSE OF THIS AMENDED SUBDIVISION PLAN IS TO DIVIDE LOT 1 AS SHOWN ON A PLAN ENTITLED "CAMPBELL ACRES" RECORDED IN PLAN BOOK 104 PAGE 27 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS. THE PROJECT SHALL BE CONSTRUCTED, OPERATED AND MAINTAINED IN ACCORDANCE WITH THE PLANS, TEXTUAL SUBMISSIONS AND TESTIMONY PRESENTED TO THE PLANNING BOARD BY THE APPLICANT.

APPROVED BY THE TOWN OF GRAY, MAINE PLANNING BOARD

[redacted]

April 14, 2022 DATE

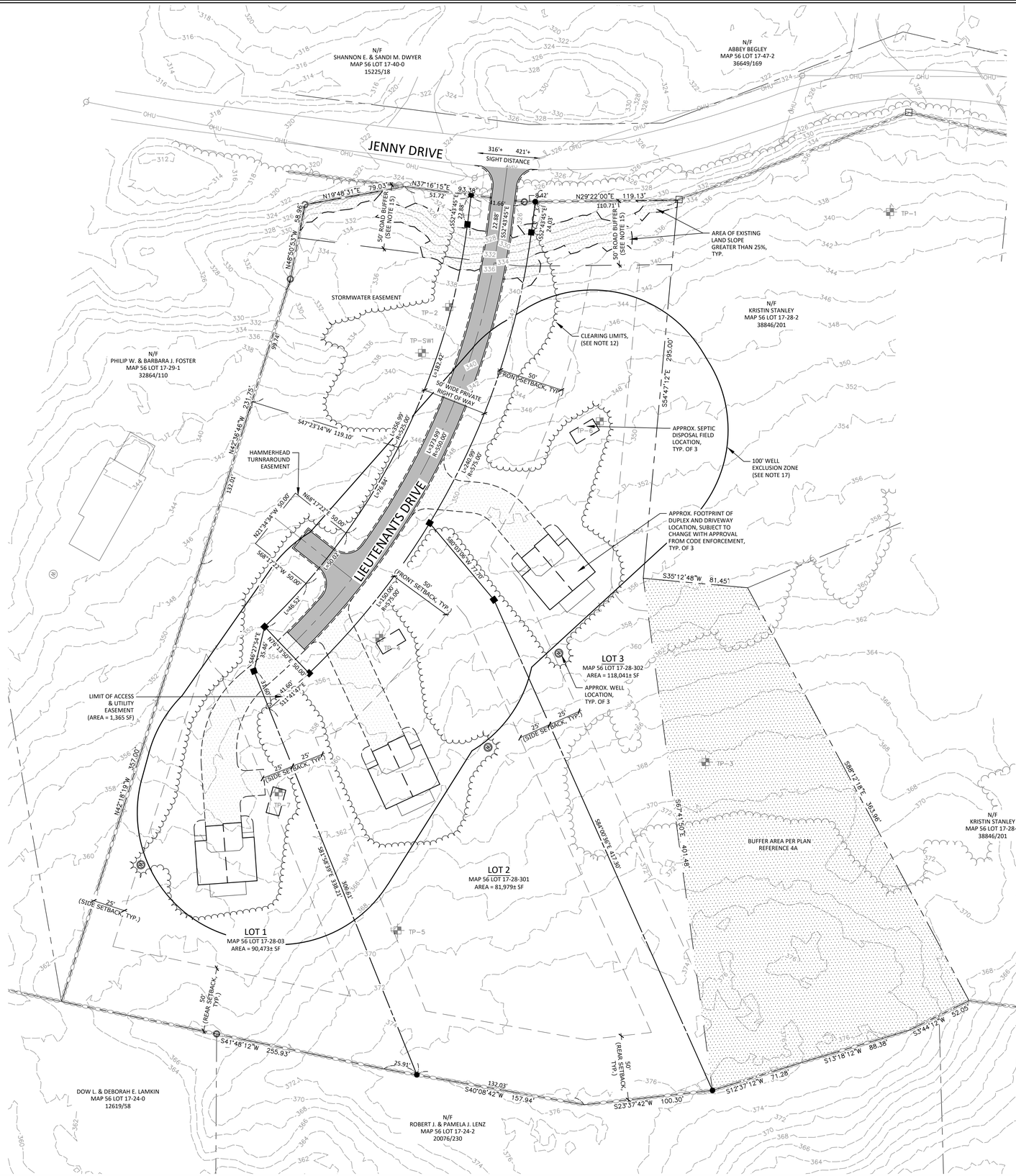
AMENDED SUBDIVISION PLAN CAMBELL ACRES

CAMBELL SHORE ROAD
GRAY, MAINE

FOR: **KRISTIN STANLEY**
PO BOX 1161
GRAY, MAINE 04039
(CLIENT)

SURVEY BY: **SURVEY, INC.**
P.O. BOX 210
WINDHAM, ME 04062
(207) 892-2556
INFO@SURVEYINCORPORATED.COM

DWN: WCS CHK: DRR
DATE: DECEMBER 2021 JOB NO. 21-270-2
REV: 3-10-22 MISC CHANGES AS REQUESTED BY TOWN
REV: 3-16-22 MISC CHANGES AS REQUESTED BY TOWN
REV: 4-4-22 MISC CHANGES AS REQUESTED BY TOWN
REV: 5-4-22 PLANNING BOARD CONDITIONS OF APPROVAL
REV: 5-9-22 MISC CHANGES AS REQUESTED BY TOWN



GENERAL NOTES:

1. THE OWNER OF RECORD OF THE PROPERTY IS McDONNELL BROTHERS CUSTOM BUILDERS, LLC. BY DEED RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 40059 PAGE 250.
2. TOTAL AREA OF THE PARCEL IS APPROXIMATELY 7.12 ACRES.
3. PARCEL TAX MAP REFERENCE: TOWN OF GRAY ASSESSORS MAP 56, LOT 17-28-03.
4. PLAN REFERENCES:
   - 4.A. AMENDED SUBDIVISION PLAN CAMBELL ACRES, PREPARED FOR KRISTIN STANLEY, PREPARED BY SURVEY, INC. DATED DECEMBER 2021 AND REVISED THRU 5-9-22, AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS PLAN BOOK 222 PAGE 174 ON MAY 11, 2022.
   - 4.B. CAMBELL ACRES, GRAY, MAINE FINAL SUBDIVISION PLAN, PREPARED FOR K. NORTON & J. GENDRON, PREPARED BY LAND USE CONSULTANTS, INC. DATED OCTOBER 1974 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS PLAN BOOK 104 PAGE 27 ON DEC. 6, 1974.
5. HORIZONTAL DATUM: MAINE STATE PLANE, WEST ZONE, NAD83, U.S. FEET.
6. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
7. BOUNDARY SHOWN HEREON IS BASED ON PLAN REFERENCE 4.A.
8. TOPOGRAPHIC CONTOURS SHOWN HEREON ARE BASED ON PLAN REFERENCE 4.A.
9. THE PROPERTY IS LOCATED IN THE RURAL RESIDENTIAL AND AGRICULTURE DISTRICT.
10. SPACE AND BULK REQUIREMENTS: RRA DISTRICT

	CONVENTIONAL SUBDIVISION
MIN LOT AREA:	80,000 SF
MIN AREA PER DWELLING UNIT:	40,000 SF
MIN STREET FRONTAGE:	200 FT
MIN FRONT YARD SETBACK:	50 FT
MIN SIDE YARD SETBACK:	25 FT
MIN REAR YARD SETBACK:	50 FT
MAX LOT COVERAGE:	10%
MAX LOT BUILDING COVERAGE:	N/A
MAX BUILDING HEIGHT:	35 FT

11. SOIL EVALUATION TEST PITS PERFORMED ON DECEMBER 19, 2021, FEBRUARY 11, 2022 AND JULY 27, 2023 BY MAINELY SOILS, LLC.
12. PROPOSED CLEARING NECESSARY FOR THE CONSTRUCTION OF THE SUBDIVISION ROAD AND ALL LOT DEVELOPMENT IS LIMITED TO CLEARING LIMITS SHOWN ON THIS PLAN.
13. ALL LOTS IN THIS SUBDIVISION ARE REQUIRED TO PROVIDE ROOF DRIP EDGES FOR ALL PROPOSED DUPLEXES.
14. ANY FUTURE DEVELOPMENT OR CHANGES TO THIS SUBDIVISION PLAN WILL REQUIRE PLANNING BOARD APPROVAL AND WILL BE CONSIDERED AS AN AMENDMENT TO A MAJOR SUBDIVISION. THE PLANNING BOARD MAY REQUIRE ADDITIONAL PLANS & STUDIES PER 401.7.3-5 THAT WERE WAIVED OR NOT REQUIRED AS PART OF THIS SUBDIVISION APPROVAL.
15. THE 50' FOREST SCENIC BUFFER ALONG JENNY DRIVE IS TO REMAIN IN IT'S CURRENT VEGETATIVE CONDITION EXCEPT FOR CLEARING REQUIRED FOR ACCESS DRIVE CONSTRUCTION AND THE REMOVAL OF ANY DEAD OR DISEASED TREES.
16. PROPOSED BUILDINGS ON ALL PROPOSED LOTS ARE INTENDED TO BE CONSTRUCTED WITH FIRE SPRINKLERS MEETING NFPA STANDARDS.
17. ALL LOTS IN THE SUBDIVISION SHALL BE SERVED BY PRIVATE ON-SITE POTABLE WELLS, AND PRIVATE SUBSURFACE WASTEWATER DISPOSAL SYSTEMS AND UNDERGROUND ELECTRICAL, TELEPHONE AND CABLE SERVICES. PRIVATE ON-SITE POTABLE WELLS SHALL NOT BE CONSTRUCTED WITHIN 100 FEET OF THE TRAVELED WAY OF ANY STREET, IF LOCATED DOWNHILL FROM THE STREET, OR WITHIN 50 FEET OF THE TRAVELED WAY OF ANY STREET, IF LOCATED UPHILL OF THE STREET. WATER SUPPLIES SHALL MEET PRIMARY DRINKING WATER STANDARDS CONTAINED IN THE STAT OF MAINE RULES RELATING TO DRINKING WATER. WELL EXCLUSION ZONE SHOWN HEREON BASED ON APPROXIMATE SEPTIC DISPOSAL FIELD LOCATION AND TO BE VERIFIED BASED ON FINAL SEPTIC DESIGN.
18. ALL DRIVEWAY AND LOT DEVELOPMENT WORK SHALL PROVIDE FOR EROSION & SEDIMENTATION CONTROL BMPS IN ACCORDANCE WITH THE
19. ALL ROADS IN THIS SUBDIVISION SHALL REMAIN PRIVATE ROADS AND ARE TO BE MAINTAINED BY THE DEVELOPER OR THE LOT OWNERS. ALL ROADS IN THE SUBDIVISION AS PROPOSED DO NOT MEET THE TOWN'S STANDARD FOR PUBLIC ROAD MAINTENANCE SHALL NOT BE ACCEPTED AS A PUBLIC ROAD OR MAINTAINED BY THE TOWN. SEE NOTE 14 ABOVE.

NET RESIDENTIAL DENSITY CALCULATIONS:

GROSS LAND AREA:	310,342± S.F.
100% DEDUCTIONS:	
a. STEEP SLOPES (25% OR GREATER)	6,291 S.F.
b. INACCESSIBLE LAND	0 S.F.
c. 100-YEAR FLOODPLAIN	0 S.F.
d. WATERBODIES	0 S.F.
e. NON-FORESTED OR IMPACTED WETLANDS	0 S.F.
f. LIQUIDATION HARVESTING	0 S.F.
g. SIGNIFICANT ROCK OUTCROP	0 S.F.
h. GRAVEL PIT	0 S.F.
i. POORLY DRAINED SOILS	0 S.F.
j. VERY POORLY DRAINED SOILS	0 S.F.
SUBTOTAL 100% DEDUCTION:	6,291 S.F.
50% DEDUCTIONS:	
a. SOMEWHAT POORLY DRAINED SOILS	0 S.F.
b. RESOURCE PROTECTION (UNDEVELOPED)	0 S.F.
c. FORESTED WETLANDS (UNDEVELOPED)	0 S.F.
d. SIGNIFICANT HABITAT	0 S.F.
SUBTOTAL 50% DEDUCTIONS:	0 S.F.
ACTUAL DEDUCTION:	0 S.F.
NET AREA SUBTOTAL:	304,050 S.F.
DEDUCT 10% FOR ROADS & RIGHT OF WAYS:	30,405 S.F.
TOTAL NET AREA:	273,645 S.F.
REQUIRED MIN. LOT AREA:	80,000 S.F.
MAXIMUM ALLOWABLE LOTS:	3.42
NUMBER OF LOTS PROPOSED:	3
REQUIRED MIN. AREA PER DWELLING:	40,000 SF
MAXIMUM ALLOWABLE DWELLING:	6.84
NUMBER OF LOTS PROPOSED:	6

APPROVED - TOWN OF GRAY PLANNING BOARD:

CHAIRPERSON _____ DATE _____

LEGEND

EXISTING	PROPOSED
PROPERTY LINE/R.O.W.	
ABUTTER PROPERTY LINE	
SETBACK	
EASEMENT LINE	
GRANITE MONUMENT	■
IRON PIN/DRILL HOLE	●
CENTERLINE	
BUILDING	
EDGE OF PAVEMENT/CURB	
EDGE OF GRAVEL	
200 CONTOUR LINE	201
CULVERT/STORMDRAIN	
UTILITY POLE	
OHU OVERHEAD UTILITIES	
STONEWALL	

JAYSON R. HASKELL
No. 12032
STATE OF MAINE
REGISTERED PROFESSIONAL LAND SURVEYOR
9-21-2023

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

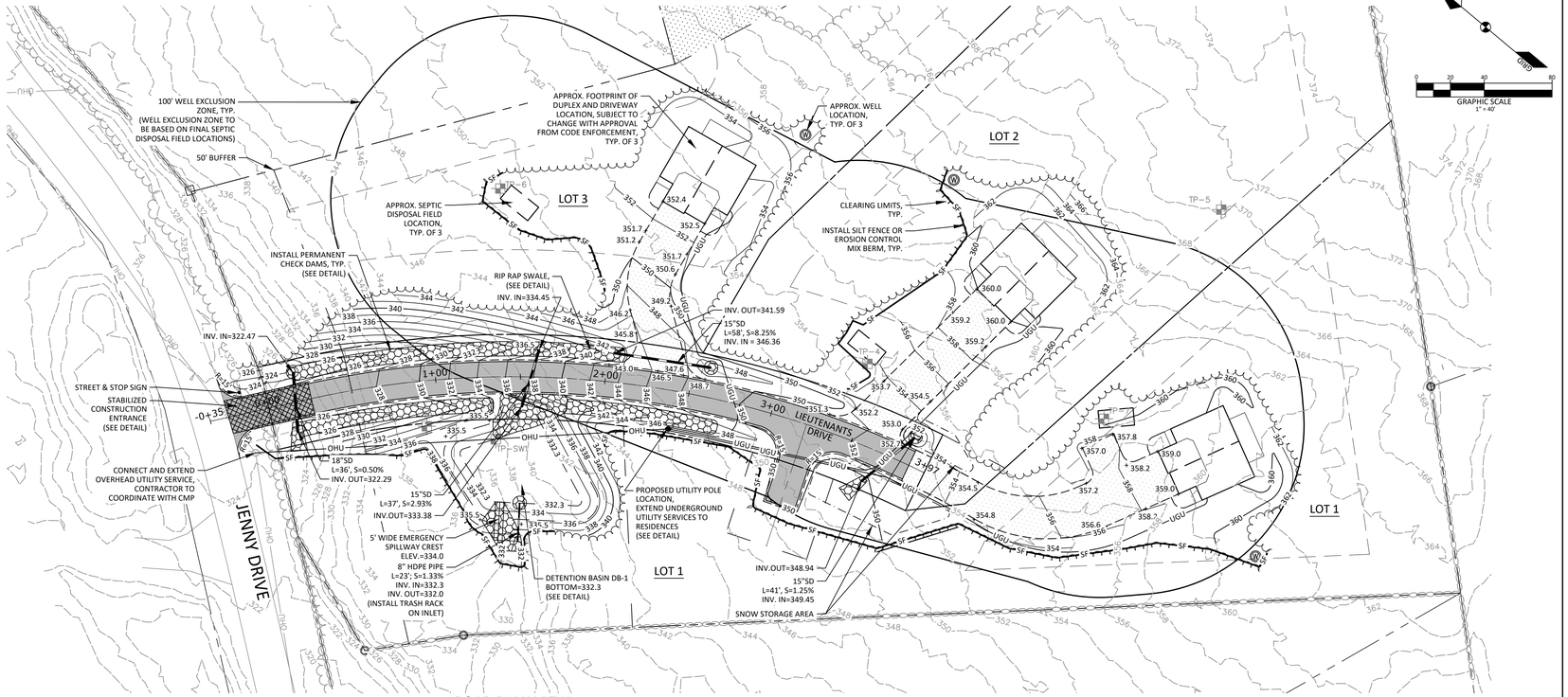
REV	DATE	BY	DESCRIPTION
A	6-19-23	JPC	ISSUED FOR TOWN SKETCH PLAN REVIEW
B	7-13-23	JPC	REVISED ROAD ALIGNMENT
C	8-4-23	JPC	ISSUED FOR TOWN PERMIT REVIEW
D	8-22-23	JPC	REVISED PER TOWN COMMENTS
E	9-21-23	JPC	REVISED PER TOWN COMMENTS

SECOND AMENDED SUBDIVISION PLAN

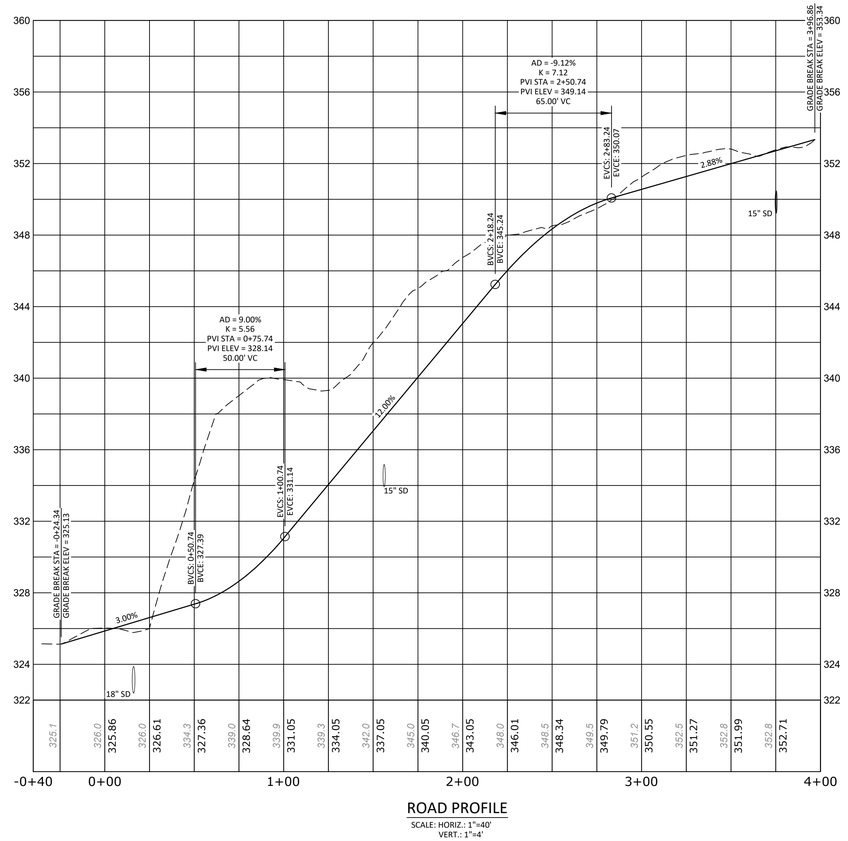
CAMBELL ACRES SUBDIVISION
CAMBELL SHORE ROAD/JENNY DRIVE/LIEUTENANTS DRIVE
GRAY, MAINE

FOR RECORD OWNER:
McDONNELL BROTHERS CUSTOM BUILDERS, LLC.
391 ROOSEVELT TRAIL
WINDHAM, MAINE, 04062

23015	JOB NUMBER:
1" = 40'	SCALE:
9-21-2023	DATE:
SHEET 3 OF 6	
SASB-1	



ROAD PLAN VIEW
SCALE: 1"=40'



ROAD PROFILE
SCALE: HORIZ.: 1"=40'
VERT.: 1"=4'

LEGEND

EXISTING	PROPOSED
PROPERTY LINE/R.O.W.	
ABUTTER PROPERTY LINE	
SETBACK	
EASEMENT LINE	
CENTERLINE	
BUILDING	
EDGE OF PAVEMENT/CURB	
EDGE OF GRAVEL	
STONEWALL	
SIGN	
CONTOUR LINE	200 — 201
TREELINE	
TEST PIT	
CULVERT/STORMDRAIN	
WELL	W
UTILITY POLE	
OVERHEAD UTILITIES	OHU
UNDERGROUND UTILITIES	UGU
TRANSFORMER PAD	T
RIPRAP	
SILT FENCE	SF

JAYSON R. HASKELL
STATE OF MAINE
23
[redacted]

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 593-5055

REV	DATE	BY	DESCRIPTION
A	8-4-23	JPC	ISSUED FOR TOWN PERMIT REVIEW
B	8-10-23	JPC	REVISED PER TOWN COMMENTS
C	8-22-23	JPC	REVISED LOT 1 AND LOT 3 LAYOUT
D	9-21-23	JPC	REVISED PER TOWN COMMENTS

ROADWAY PLAN & PROFILE: LIEUTENANTS DRIVE

CAMBELL ACRES SUBDIVISION
CAMBELL SHORE ROAD/JENNY DRIVE/LIEUTENANTS DRIVE
GRAY, MAINE
FOR:
McDONNELL BROTHERS CUSTOM BUILDERS, LLC.
391 ROOSEVELT TRAIL
WINDHAM, MAINE, 04062

23015	JOB NUMBER:
1" = 40'	SCALE:
9-21-2023	DATE:
SHEET 4 OF 6	
PP-1	

EROSION AND SEDIMENTATION CONTROL NOTES:

EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS TO OCCUR DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY.

IN ORDER TO EFFECTIVELY PREVENT AND CONTROL EROSION RELATED TO SOIL DISTURBANCE, THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPS) SHALL BE EMPLOYED:

1. POLLUTION PREVENTION

MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION. MINIMIZE THE DISTURBANCE OF STEEP SLOPES. CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOW RATES AND VOLUME, TO MINIMIZE EROSION AT OUTLETS. THE DISCHARGE MAY NOT RESULT IN EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, STREAM CHANNELS OR STREAM BANKS, UPLAND, OR COASTAL OR FRESHWATER WETLANDS OFF THE PROJECT SITE.

WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.

2. TEMPORARY SOIL STABILIZATION BMPS

TEMPORARY MULCHING SHALL BE APPLIED IMMEDIATELY TO ANY AREAS THAT HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED. ANY DISTURBED SOIL WITHIN 75' OF A STREAM, WATER BODY OR WETLAND MUST RECEIVE TEMPORARY MULCH WITHIN 48 HOURS FOLLOWING DISTURBANCE AND BEFORE ANY STORM EVENT. ALL OTHER AREAS SHALL RECEIVE TEMPORARY MULCH WITHIN 7 DAYS OF DISTURBANCE. AREAS WHICH CANNOT BE SEEDED DURING THE GROWING SEASON SHALL BE MULCHED FOR OVER-WINTER PROTECTION. THE FOLLOWING ARE ACCEPTABLE TEMPORARY MULCHING METHODS:

HAY OR STRAW MULCHES NEED TO BE AIR-DRIED, FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS. APPLICATION RATE MUST BE 2 BALES (70-90 POUNDS) PER 1000 SQ FT OR 1.5 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 75-90% OF THE GROUND SURFACE. HAY OR STRAW CAN BE DRIVEN INTO THE GROUND WITH TRACKED EQUIPMENT IF SLOPES ARE LESS THAN 3%, OR CAN BE ANCHORED WITH JUTE, WOOD FIBER OR PLASTIC NETTING ON STEEPER SLOPES.

EROSION CONTROL MIX MUST CONSIST PRIMARILY OF ORGANIC MATERIAL AND WILL INCLUDE ANY OF THE FOLLOWING: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK OR OTHER ACCEPTABLE PRODUCTS BASED ON A SIMILAR RAW SOURCE. WOOD OR BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE. EROSION CONTROL MIX CAN BE USED AS A STAND-ALONE REINFORCEMENT ON SLOPES OF 2 HORIZONTAL TO 1 VERTICAL OR LESS AND DRAINING IN SHEET FLOW. IT CAN BE PLACED WITH A HYDRAULIC BUCKET, WITH A PNEUMATIC BLOWER OR BY HAND, AND MUST PROVIDE 100% SOIL COVERAGE.

EROSION CONTROL MIX SHALL MEET THE FOLLOWING SPECIFICATIONS:
- -ORGANIC MATTER CONTENT SHALL BE BETWEEN 50-100%, DRY WEIGHT BASIS.
- -MINERAL PORTION OF THE MIX SHOULD BE NATURALLY INCLUDED IN THE MIX WITH NO LARGER ROCKS (>4")
- -ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED
- -LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX
- -IN STUMP GRINDING, THE MINERAL SOIL ORIGINATES FROM THE ROOT BALL AND SHOULD NOT BE REMOVED BEFORE GRINDING
- -THE MIX SHOULD BE FREE OF REFUSE, MATERIAL TOXIC TO PLANT GROWTH OR UNSUITABLE MATERIAL (BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS

WHEN USED AS MULCH, THE THICKNESS OF THE EROSION CONTROL MIX IS BASED UPON THE FOLLOWING:

LENGTH OF SLOPE	3:1 SLOPE OR LESS	BETWEEN 2:1 AND 3:1 SLOPE
LESS THAN 20 FT	2.0 IN.	4.0 IN.
BETWEEN 20 - 60 FT	3.0 IN.	5.0 IN.
BETWEEN 60 - 100 FT	4.0 IN.	6.0 IN.

CHEMICAL MULCHES AND SOIL BINDERS MAY BE USED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL CONSULT WITH THE MANUFACTURER TO DETERMINE ADEQUATE APPLICATION RATES AND METHODS.

TEMPORARY MULCH SHALL BE INSPECTED FOLLOWING ANY SIGNIFICANT RAINFALL EVENT (GREATER THAN 0.5 INCH RAINFALL, TYP.). IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. EROSION CONTROL MATS AND MULCH ANCHORING MUST BE INSPECTED AFTER RAINFALL EVENTS FOR DISLOCATION OR FAILURE, AND REPAIRED IMMEDIATELY. INSPECTIONS SHALL TAKE PLACE UNTIL 95% OF THE SOIL SURFACE IS COVERED WITH PERMANENT VEGETATION. WHERE MULCH IS USED WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE, AND REPAIR AS NEEDED.

TEMPORARY VEGETATION SHALL BE ESTABLISHED ON SOILS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 30 DAYS. IF TEMPORARY VEGETATION CANNOT BE ESTABLISHED PRIOR TO OCTOBER 15, TEMPORARY MULCH SHALL BE APPLIED THROUGH THE WINTER AND TEMPORARY VEGETATION SHALL BE PLANTED AT THE BEGINNING OF THE GROWING SEASON THE FOLLOWING YEAR. TO PREPARE THE SEEDBED, THE CONTRACTOR SHALL APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OF 10-10-10 (N-P205-K20) OR EQUIVALENT AND LIMESTONE AT A RATE OF 3 TONS PER ACRE, IF NECESSARY. LOOSEN SOIL TO A DEPTH OF 2 INCHES IN AREAS THAT HAVE BEEN COMPACTED BY CONSTRUCTION ACTIVITIES. GRASS SEED SHALL BE SELECTED BASED UPON THE TIME OF YEAR THE PLANTING WILL TAKE PLACE AS SUMMARIZED IN THE FOLLOWING TABLE:

SEED	LB. PER ACRE	RECOMMENDED SEEDING DATES
WINTER RYE	112	8/15 - 10/1
OATS	80	4/1 - 7/1 8/15 - 9/15
ANNUAL RYEGRASS	40	4/1 - 7/1

TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED TO MAINTAIN AT LEAST 95% VEGETATIVE COVER OF SOIL SURFACE. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES SHALL BE USED IN THE INTERIM SUCH AS TEMPORARY MULCH, FILTER BARRIERS, ETC.

3. SEDIMENT BARRIER BMPS

PRIOR TO CONSTRUCTION TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED AT THE DOWNGRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA . SEDIMENT BARRIERS INCLUDE ANY OF THE FOLLOWING:

FILTER BARRIER FENCE, ALSO CALLED SILT FENCE, SHALL BE INSTALLED WHERE SHOWN ON THE PLANS AND IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. THE FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL PROVIDE A MINIMUM OF 6 MONTHS USABLE CONSTRUCTION LIFE INCLUDING PROTECTION AGAINST ULTRA-VIOLET LIGHT. THE HEIGHT OF THE FENCE SHALL NOT EXCEED 36 INCHES INSTALLED AND POST SPACING SHALL NOT EXCEED 6 FEET. JOINTS IN THE FENCE SHALL BE AVOIDED TO THE EXTENT POSSIBLE, AND IF NECESSARY SHALL BE SPLICED TOGETHER AT A SUPPORT POST WITH A MINIMUM 6 INCH OVERLAP. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 6 INCHES WIDE AND 6 INCHES DEEP, AND THE BOTTOM 6-8 INCHES OF FABRIC SHALL BE "TOED-IN" TO THE TRENCH AND COMPACTED. THE TRENCH SHOULD BE UPHILL OF THE FABRIC PRIOR TO BURIAL.

EROSION CONTROL MIX BERMS ARE LINEAR BARRIERS COMPOSED OF EROSION CONTROL MIX AS SPECIFIED ABOVE. THE BERM MUST BE A MINIMUM OF 12 INCHES TALL AND 24 INCHES WIDE AT THE BASE IF UPHILL SLOPES ARE LESS THAN 5%. STEEPER SLOPES OR SLOPES GREATER THAN 20 FEET LONG MAY REQUIRE A LARGER WIDTH BERM. EROSION CONTROL MIX BERMS SHALL BE PROHIBITED AT THE BASE OF A LONG OR STEEP SLOPE (8% OR GREATER) WITHOUT THE ADDITIONAL SUPPORT OF A FILTER FENCE INSTALLED ON THE DOWNHILL SIDE OF THE BERM.

SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER SHOULD BE PREVENTED FROM RUNNING ONTO THE STOCKPILE. SEDIMENT BARRIERS SHALL BE INSPECTED AFTER ANY SIGNIFICANT RAINFALL EVENT (GREATER THAN 0.5 INCH RAINFALL) AND REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE BARRIERS. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR EDGES OF THE BARRIER, OR IF LARGE VOLUMES OF WATER ARE IMPOUNDED BEHIND THE BARRIER, IT MAY BE NECESSARY TO REPLACE THE BARRIER WITH A TEMPORARY STONE CHECK DAM. SEDIMENT SHALL BE REMOVED ONCE IT REACHES HALF THE BARRIER HEIGHT. AFTER THE BARRIER IS REMOVED, ANY REMAINING SILT SHALL EITHER BE REMOVED OR GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

TEMPORARY EROSION CONTROL MEASURES ARE REMOVED ONCE THE SITE IS PERMANENTLY STABILIZED AND CONSTRUCTION ACTIVITY HAS BEEN COMPLETED.

4. STORM DRAIN INLET PROTECTION

STORM DRAIN INLETS THAT ARE MADE OPERATIONAL BEFORE THEIR DRAINAGE AREA IS STABILIZED SHALL BE PROTECTED WITH A FILTER UNTIL THE DRAINAGE AREA IS EITHER PAVED OR STABILIZED WITH 95% VEGETATIVE GROWTH. THE FOLLOWING ARE ACCEPTABLE BMPS ASSOCIATED WITH STORM DRAIN INLET PROTECTION:

MANUFACTURED SEDIMENT FILTERS ARE THE PREFERRED METHOD FOR PROTECTING CATCH BASIN INLETS IN PAVED OR GRAVEL ROADWAYS. THE FILTERS TYPICALLY CONSIST OF A FABRIC OR OTHER PERVIOUS MATERIAL THAT IS PLACED ABOVE OR BELOW THE GRATE THAT TRAPS SEDIMENT ON THE SURFACE AND ALLOWS WATER TO FLOW THROUGH THE GRATE. CONSIDERATIONS SUCH AS WEATHER CONDITIONS, SLOPES, TRIBUTARY WATERSHED AREA AND EXPECTED SEDIMENT ACCUMULATION SHOULD BE FACTORED INTO MAKING A DECISION ON ANY PARTICULAR PRODUCT, AND THE MANUFACTURER'S RECOMMENDATIONS ON INSTALLATION AND MAINTENANCE SHALL BE STRICTLY ADHERED TO.

5. STABILIZED CONSTRUCTION ENTRANCE/EXIT

TO REDUCE THE TRACKING OF SEDIMENT ONTO ROADWAYS, A STABILIZED CONSTRUCTION EXIT SHALL BE INSTALLED AT ALL POINTS OF EGRESS WHERE VEHICLES MAY TRAVEL FROM THE PROJECT SITE TO A PUBLIC ROAD OR OTHER PAVED AREA. THE STONE PAD SHALL CONSIST OF A MINIMUM 6-INCH DEPTH OF 2-3 INCH CRUSHED STONE, AND SHALL BE PLACED ON A GEOTEXTILE FABRIC. THE PAD SHALL EXTEND AT LEAST 50 FEET INTO THE PROJECT SITE AND BE A MINIMUM OF 10 FEET WIDE. THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, AND THE CONTRACTOR SHALL SWEEP PAVEMENT AT EXITS THAT HAVE EXPERIENCED ANY MUD-TRACKING PRIOR TO THE NEXT STORM EVENT. MAINTAIN THE PAD UNTIL ALL DISTURBED AREAS ARE STABILIZED.

6. DUST CONTROL

THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST ON THE PROJECT SITE AND ON ADJACENT ROADWAYS. EXPOSED SOIL SURFACES SHALL BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST. GRAVEL SURFACES SHALL EITHER BE TREATED WITH AN APPLICATION OF CALCIUM CHLORIDE OR COVERED WITH CRUSHED STONE IF DUST CONTROL BECOMES DIFFICULT WITH NORMAL WATER APPLICATIONS.

7. LAND GRADING AND SLOPE PREPARATION

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 NEXT PHASE. ANY EXPOSED AREA THAT WILL NOT BE FINISH GRADED WITHIN 7 DAYS SHALL BE TREATED WITH MULCH OR PLANTED WITH TEMPORARY VEGETATION. PROVISIONS SHALL BE MADE TO SAFELY CONVEY SURFACE RUNOFF TO STORM DRAINS, PROTECTED OUTLETS OR TO STABLE WATER COURSES TO ENSURE THAT SURFACE RUNOFF WILL NOT DAMAGE SLOPES OR OTHER GRADED AREAS. CUT AND FILL SLOPES THAT ARE TO BE STABILIZED WITH GRASS SHALL NOT BE STEEPER THAN 2:1. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIALS. AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL. 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. ALL FILLS SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS. FILL MATERIAL SHALL BE FREE OF STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL FILLS. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED APPROPRIATELY. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

8. TOPSOIL

IF POSSIBLE, TOPSOIL SHALL BE STOCKPILED ON THE PROJECT SITE AND REUSED. HIGH QUALITY TOPSOIL SHALL BE FRIABLE AND LOAMY (LOAM, SANDY LOAM, SILT LOAM, SANDY CLAY LOAM, CLAY LOAM), AND SHALL BE FREE OF DEBRIS, TRASH, STUMPS, ROCKS, ROOTS AND NOXIOUS WEEDS. AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, AND IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENED BY SCARIFYING TO A DEPTH OF AT LEAST 2 INCHES TO ENSURE BONDING WITH SUBSOIL. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 4 INCHES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS. IT IS NECESSARY TO COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL, BUT UNDUE COMPACTION IS TO BE AVOIDED.

9. PERMANENT SOIL STABILIZATION

IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIPRAP, OR ROAD SUB-BASE. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS; AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS; PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS; AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.

SEEDED AREAS: TO PREPARE THE SEEDBED, APPLY 10-20-20 FERTILIZER AT A RATE OF 800 POUNDS PER ACRE AND GROUND LIMESTONE AT A RATE OF 3 TONS PER ACRE. WORK THE FERTILIZER AND LIMESTONE INTO THE TOPSOIL TO A DEPTH OF 4 INCHES AND REMOVE ANY STONES, ROOTS OR OTHER VISIBLE DEBRIS. SELECT A SEED MIXTURE THAT IS APPROPRIATE FOR THE SOIL TYPE AND MOISTURE CONTENT AS FOUND AT THE SITE, AND FOR THE AMOUNT OF SUN EXPOSURE AND FOR LEVEL OF USE. REFER TO THE USDA SOIL CONSERVATION SERVICE OR THE LOCAL SOIL AND WATER CONSERVATION DISTRICT FOR APPROPRIATE SEED MIXTURES. APPLY SEED UNIFORMLY IN ACCORDANCE WITH SUPPLIER RECOMMENDATIONS AND IMMEDIATELY COVER WITH MULCH AS DESCRIBED IN THE TEMPORARY MULCHING SECTION OF THIS PLAN.

HYDROSEEDING SHALL BE DONE IN ACCORDANCE WITH SUPPLIERS RECOMMENDATIONS. FOR SEEDED AREAS TO BE PERMANENTLY STABILIZED, 90% OF THE DISTURBED SOIL SHALL BE COVERED WITH MATURE HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

SOD STRIPS SHALL BE LAID AT RIGHT ANGLES TO DIRECTION OF SLOPE OR FLOW OF WATER STARTING AT LOWEST ELEVATION. JOINTS SHALL BE STAGGERED, AND ALL STRIPS SHALL BE ROLLED OR TAMPED INTO PLACE. ON SLOPES, SOD SHALL BE ANCHORED WITH STAPLES, WIRE OR PINS. IRRIGATE SODDED AREA IMMEDIATELY AFTER INSTALLATION. FOR SODDED AREAS TO BE PERMANENTLY STABILIZED, THE ROOTS OF THE SOD MUST BE COMPLETELY BOUND INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.

PERMANENT MULCH IS A LONG TERM COVER THAT PROVIDES A GOOD BUFFER AROUND DISTURBED AREAS. THE EROSION CONTROL MIX SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND MAY INCLUDE SHREDDED BARK, STUMP GRINDINGS OR COMPOSTED BARK. WOOD CHIPS, GROUND CONSTRUCTION DEBRIS, REPROCESSED WOOD PRODUCTS OR BARK CHIPS ARE NOT ACCEPTABLE. THE EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4 INCHES IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS AND MATERIAL TOXIC TO PLANT GROWTH.

RIPRAP STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNEVEN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. THE DEPTH OF STONE SHALL BE A MINIMUM OF 2.2 TIMES THE MAXIMUM STONE DIAMETER. A GRAVEL OR GEOTEXTILE FILTER BLANKET SHALL BE PLACED BETWEEN THE RIPRAP AND UNDERLYING SOIL SURFACE. GRAVEL FILTER BLANKETS SHALL MEET MDOT TYPE-C UNDERDRAIN MATERIAL SPECIFICATIONS AND BE AT LEAST 6 INCHES THICK. GEOTEXTILE FILTER BLANKETS SHALL BE SPECIFIED BASED ON SITE CONDITIONS. RIPRAP SLOPES SHALL BE TOED INTO THE BASE OF THE EMBANKMENT BY EXCAVATING A TRENCH AT THE BOTTOM OF THE SLOPE AND INSTALLING A STABLE BASE OF RIPRAP TO GRADE.

DITCHES, CHANNELS AND SWALES ARE CONSIDERED PERMANENTLY STABILIZED WHEN THE CHANNEL HAS 90% COVER OF HEALTHY VEGETATION WITH A WELL GRADED RIPRAP LINING, EROSION CONTROL BLANKET, OR WITH ANOTHER NON-EROSIVE LINING SUCH AS CONCRETE OR ASPHALT PAVEMENT. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE CHANNEL LINING, UNDERCUTTING OF THE BANKS, OR DOWNCUTTING OF THE CHANNEL.

10. STORMWATER CHANNELS

EACH CHANNEL SHOULD BE CONSTRUCTED IN SECTIONS SO THAT THE SECTION'S GRADING, SHAPING, AND INSTALLATION OF THE PERMANENT LINING CAN BE COMPLETED THE SAME DAY. IF A CHANNEL'S FINAL GRADING OR LINING INSTALLATION MUST BE DELAYED, THEN DIVERSION BERMS MUST BE USED TO DIVERT STORMWATER AWAY FROM THE CHANNEL. PROPERLY-SPACED CHECK DAMS MUST BE INSTALLED IN THE CHANNEL TO SLOW THE WATER VELOCITY, AND A TEMPORARY LINING INSTALLED ALONG THE CHANNEL TO PREVENT SCOURING.

WINTER EROSION AND SEDIMENTATION CONTROL NOTES:

THE WINTER CONSTRUCTION PERIOD TYPICALLY BEGINS IN EARLY NOVEMBER AND ENDS IN MID APRIL. IF A CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE OR RIPRAP BY NOVEMBER 15 THEN THE SITE NEEDS TO BE PROTECTED WITH OVER-WINTER STABILIZATION. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS TO OCCUR DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. AN AREA SHALL BE CONSIDERED DENUDED UNTIL THE SUBBASE GRAVEL IS INSTALLED IN THE ROADWAY AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOAMED, SEEDED AND MULCHED. A COVER OF EROSION CONTROL MIX IS THE PREFERRED TEMPORARY MULCH DURING WINTER CONDITIONS.

1. NATURAL RESOURCE PROTECTION

ANY AREAS WITHIN 75 FEET FROM ANY REGULATED NATURAL RESOURCES SHALL BE MULCHED BY DECEMBER 1 AND ANCHORED WITH PLASTIC NETTING OR PROTECTED WITH AN EROSION CONTROL COVER. DURING WINTER CONSTRUCTION, A DOUBLE ROW OF SEDIMENT BARRIERS (FOR EXAMPLE, SILT FENCE BACKED WITH HAY BALES OR EROSION CONTROL MIX) WILL BE PLACED BETWEEN ANY REGULATED NATURAL RESOURCE AND THE DISTURBED AREA. PROJECTS CROSSING THE REGULATED NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE. EXISTING PROJECTS NOT STABILIZED BY DECEMBER 1 SHALL BE PROTECTED WITH THE SECOND LINE OF SEDIMENT BARRIER TO ENSURE FUNCTIONALITY DURING THE SPRING THAW AND RAINS.

2. SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES OR SILT FENCES.

3. MULCHING

ALL AREAS SHALL BE CONSIDERED TO BE DENUDED UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE (TWICE THE NORMAL ACCEPTED RATE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCHES THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. SNOW MUST BE REMOVED DOWN TO A ONE-INCH DEPTH PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA WILL BE PROPERTY 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 OR ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WITH THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 1ST, MULCH AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

4. SOIL STOCKPILING

STOCKPILES OF SOIL OR SUBSOIL WILL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A FOUR-INCH LAYER OF EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STACKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL (0.5 INCH RAINFALL OR GREATER) OR SNOWFALL. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER SHOULD BE PREVENTED FROM RUNNING ONTO THE STOCKPILE. ANY SOIL STOCKPILE WILL NOT BE PLACED WITHIN 100 FEET FROM ANY REGULATED NATURAL RESOURCE.

5. SEEDING

BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1 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 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF DORMANT SEEDING IS USED, ALL DISTURBED AREAS SHALL RECEIVE 4 INCHES OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS PER 1,000 S.F. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 90%) IN THE SPRING SHALL BE REVEGETATED.

6. OVER-WINTER STABILIZATION OF DITCHES AND CHANNELS

ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED BY NOVEMBER 1. ALL GRASS-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY SEPTEMBER 1. IF A GRASS-LINED DITCH OR CHANNEL IS STABILIZED BY SEPTEMBER 1, THEN EITHER A SOD LINING SHALL BE INSTALLED PRIOR TO OCTOBER 1 OR THE DITCH MUST BE LINED WITH STONE RIPRAP BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE PRIOR TO NOVEMBER 1.

7. OVER-WINTER STABILIZATION OF DISTURBED SLOPES

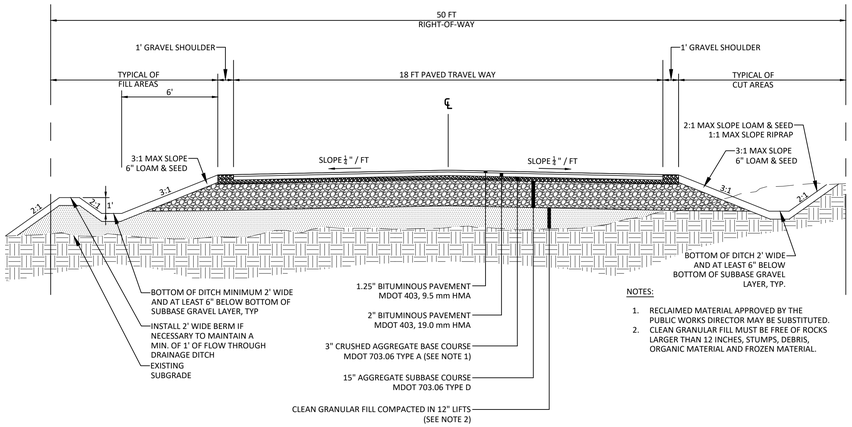
ALL STONE-COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15. ALL SLOPES TO BE VEGETATED MUST BE SEEDED AND MULCHED BY SEPTEMBER 1. ALL AREAS HAVING A GRADE STEEPER THAN 8% SHALL BE CONSIDERED A SLOPE. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1, THEN THE SLOPE SHALL EITHER BE STABILIZED WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS BY OCTOBER 1, SOD BY OCTOBER 1, EROSION CONTROL MIX BY NOVEMBER 1 OR STONE RIPRAP BY NOVEMBER 15. SEE APPLICABLE SECTIONS UNDER EROSION AND SEDIMENTATION CONTROL NOTES FOR PROPER INSTALLATION METHODS.

8. OVER-WINTER STABILIZATION OF DISTURBED SOILS

BY SEPTEMBER 15, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% MUST BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN THE AREA SHALL EITHER BE STABILIZED WITH TEMPORARY VEGETATION BY OCTOBER 1, SOD BY OCTOBER 1, OR MULCH BY NOVEMBER 15. SEE APPLICABLE SECTIONS UNDER EROSION AND SEDIMENTATION CONTROL NOTES FOR PROPER INSTALLATION METHODS.

9. MAINTENANCE

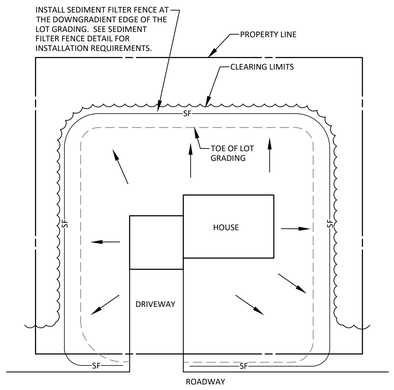
MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AFTER EACH RAINFALL, SNOW STORM, PERIOD OF THAWING AND RUNOFF AND AT LAST ONCE A WEEK, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION. FOLLOWING THE TEMPORARY AND/OR FINAL SEEDING AND MULCHING, TH



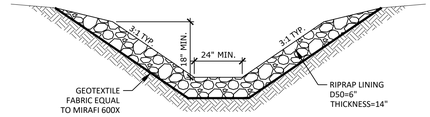
NOTES:

1. RECLAIMED MATERIAL APPROVED BY THE PUBLIC WORKS DIRECTOR MAY BE SUBSTITUTED.
2. CLEAN GRANULAR FILL MUST BE FREE OF ROCKS LARGER THAN 12 INCHES, STUMPS, DEBRIS, ORGANIC MATERIAL AND FROZEN MATERIAL.

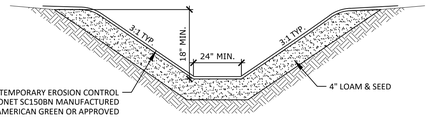
TYPICAL ROADWAY SECTION
MODIFIED MINOR RURAL STREET STANDARD



TYPICAL HOUSE LOT
EROSION CONTROL DETAIL
NOT TO SCALE

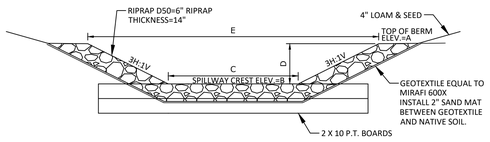


RIPRAP SWALE
NOT TO SCALE



INSTALL TEMPORARY EROSION CONTROL BLANKET, BIONET SC150BN MANUFACTURED BY NORTH AMERICAN GREEN OR APPROVED EQUIVALENT WITHIN LIMITS OF DRAINAGE SWALE. CONTRACTOR TO STAPLE EROSION CONTROL BLANKET PER MANUFACTURER'S SPECIFICATIONS.

DRAINAGE SWALE
NOT TO SCALE



SPILLWAY DATA					
POND ID	A	B	C	D	E
DB-1	335.50	334.00	5'	1.50'	14.00'

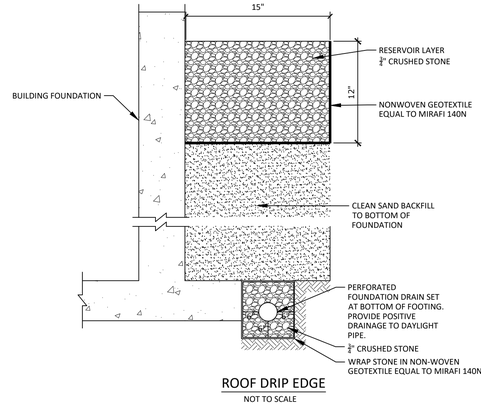
RIPRAPPED SPILLWAY CROSS-SECTION
NOT TO SCALE

NOTES:

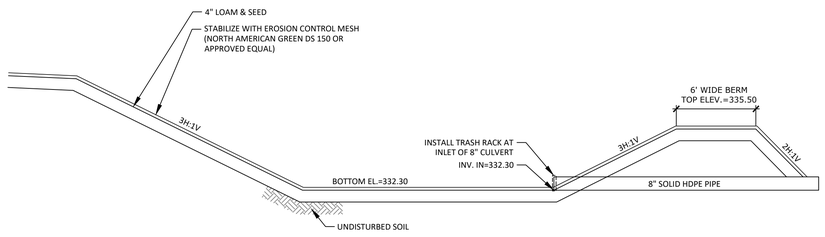
1. RIPRAP INLET AND OUTLET TO BE INSTALLED AT THE TIME OF CULVERT INSTALLATION.

RIPRAP APRON DATA					
PIPE DIA.	W1	W2	La	D	T
12" & SMALLER	3'	7'	6'	6"	14"
15"	4'	9'	8'	6"	14"
18"	5'	10	11'	6"	14"

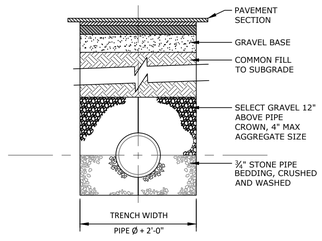
RIPRAP APRON AT PIPE
NOT TO SCALE



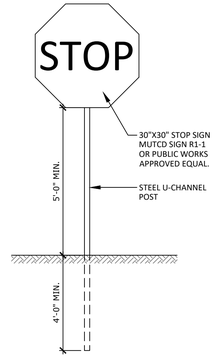
ROOF DRIP EDGE
NOT TO SCALE



DETENTION BASIN SECTION
NOT TO SCALE



TYPICAL TRENCH SECTION
NOT TO SCALE



STOP SIGN INSTALLATION
NOT TO SCALE

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 593-5055

STATE OF MAINE
JAYSON R. HASKELL
23

REV	DATE	BY	DESCRIPTION
A	8-4-23	JPC	ISSUED FOR TOWN PERMIT REVIEW
B	8-22-23	JPC	REVISED PER TOWN COMMENTS
C	9-21-23	JPC	REVISED PER TOWN COMMENTS

DETAILS

CAMBELL ACRES SUBDIVISION
CAMBELL SHORE ROAD/JENNY DRIVE/LIEUTENANTS DRIVE
GRAY, MAINE

FOR:
McDONNELL BROTHERS CUSTOM BUILDERS, LLC.
391 ROOSEVELT TRAIL
WINDHAM, MAINE, 04062

23015
JOB NUMBER:

AS NOTED
SCALE:

9-21-2023
DATE:

SHEET 6 OF 6

D-2



LEGEND

EXISTING		PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER PROPERTY LINE	
	SETBACK	
	EASEMENT LINE	
	GRANITE MONUMENT	
	IRON PIN/DRILL HOLE	
	CENTERLINE	
	BUILDING	
	EDGE OF PAVEMENT/CURB	
	EDGE OF GRAVEL	
	SIGN	
200 201	CONTOUR LINE	200 201
	TREELINE	
TP	TEST PIT	
	CATCHBASIN	
	DRAINAGE MANHOLE	
	CULVERT/STORMDRAIN	
	UNDERDRAIN	UD
W	WATER MAIN	
WV	WATER VALVE	
	HYDRANT	
	AIR RELEASE	
W	WELL	W
	UTILITY POLE	
	LIGHT POLE	
OHU	OVERHEAD UTILITIES	OHU
	TRANSFORMER PAD	T
	RIPRAP	
	SILT FENCE	SF

WATERSHED MAP LEGEND

- 1 — WATERSHED NO.
- SP1 — REACH/STUDY POINT
- P1 — POND
- WATERSHED BOUNDARY
- A — B — TIME OF CONCENTRATION
- REACH PATH
- SOIL BOUNDARY

STATE OF MAINE
JAYSON R. HASKELL
[redacted]

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

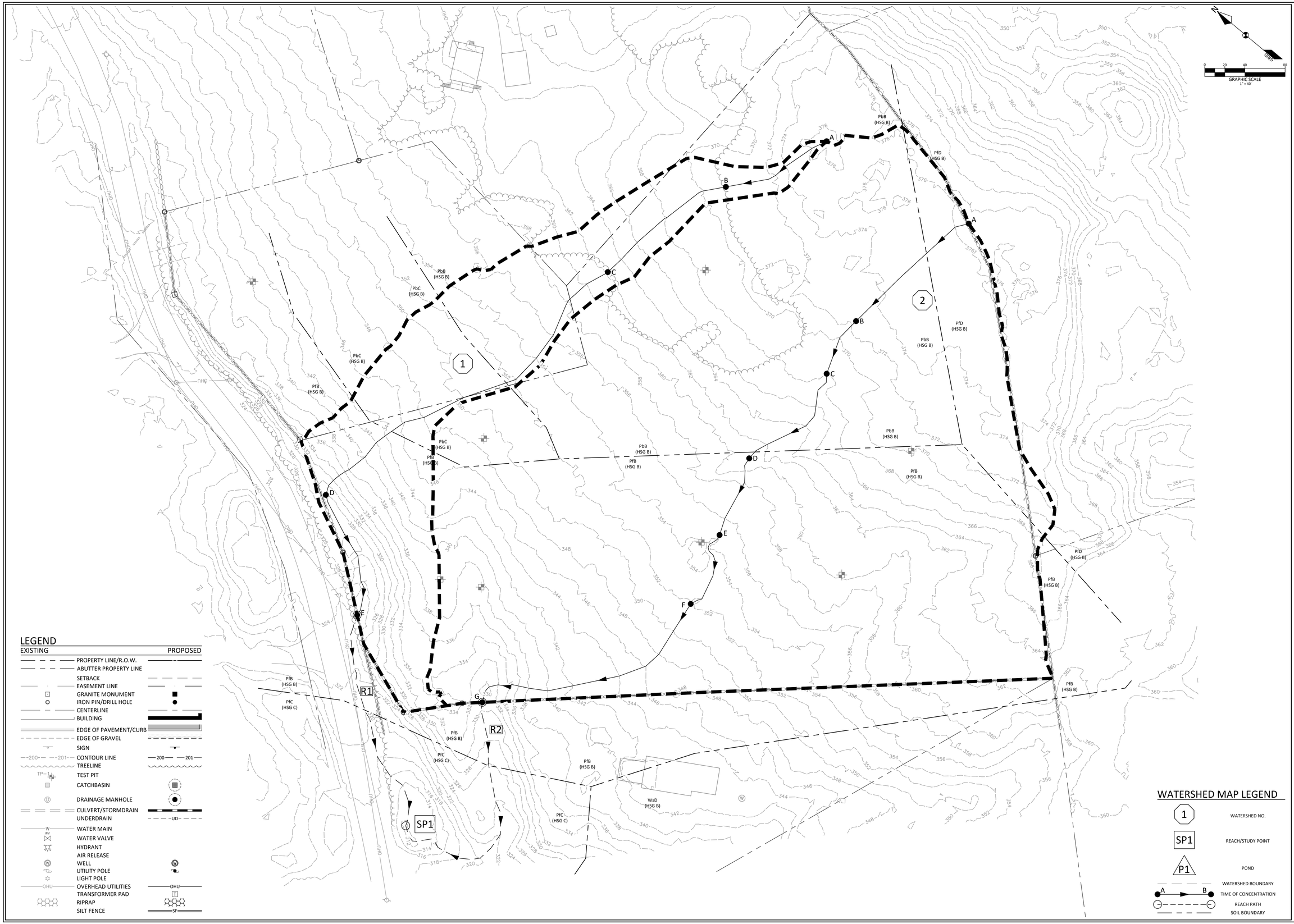
REV	DATE	BY	DESCRIPTION
A	8-4-23	JPC	ISSUED FOR TOWN PERMIT REVIEW
B	8-22-23	JPC	REVISED PER TOWN COMMENTS
C	9-21-23	JPC	REVISED PER TOWN COMMENTS

WATERSHED MAP: DEVELOPED CONDITIONS

CAMBELL ACRES SUBDIVISION
CAMBELL SHORE ROAD/JENNY DRIVE
GRAY, MAINE

FOR:
McDONNELL BROTHERS CUSTOM BUILDERS, LLC.
391 ROOSEVELT TRAIL
WINDHAM, MAINE, 04062

23015	JOB NUMBER:
1" = 40'	SCALE:
9-21-2023	DATE:
SHEET 2 OF 2	
WM-2	



LEGEND

EXISTING		PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER PROPERTY LINE	
	SETBACK	
	EASEMENT LINE	
	GRANITE MONUMENT	
	IRON PIN/DRILL HOLE	
	CENTERLINE	
	BUILDING	
	EDGE OF PAVEMENT/CURB	
	EDGE OF GRAVEL	
	SIGN	
-200- -201-	CONTOUR LINE	200 201
	TREELINE	
TP-1	TEST PIT	
	CATCHBASIN	
D	DRAINAGE MANHOLE	
	CULVERT/STORMDRAIN	
	UNDERDRAIN	UD
W	WATER MAIN	
W	WATER VALVE	
	HYDRANT	
	AIR RELEASE	
W	WELL	W
	UTILITY POLE	
	LIGHT POLE	
OHU	OVERHEAD UTILITIES	OHU
	TRANSFORMER PAD	T
	RIPRAP	
	SILT FENCE	SF

WATERSHED MAP LEGEND

- 1 — WATERSHED NO.
- SP1 — REACH/STUDY POINT
- P1 — POND
- WATERSHED BOUNDARY
- A → B — TIME OF CONCENTRATION
- REACH PATH
- SOIL BOUNDARY

STATE OF MAINE
JAYSON R. HASKELL
23
[redacted]

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

REV	DATE	BY	DESCRIPTION
A	8-4-23	JPC	ISSUED FOR TOWN PERMIT REVIEW
B	8-22-23	JPC	REVISED PER TOWN COMMENTS
C	9-21-23	JPC	REVISED PER TOWN COMMENTS

WATERSHED MAP: EXISTING CONDITIONS

CAMBELL ACRES SUBDIVISION
CAMBELL SHORE ROAD/JENNY DRIVE
GRAY, MAINE

FOR:
McDONNELL BROTHERS CUSTOM BUILDERS, LLC.
391 ROOSEVELT TRAIL
WINDHAM, MAINE, 04062

23015	JOB NUMBER:
1" = 40'	SCALE:
9-21-2023	DATE:
SHEET 1 OF 2	
WM-1	

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*	9-27-2023
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*

St.Clair Associates
Land Surveying and Civil Engineering
34 Forest Lane
Cumberland, Maine 04021

23071 September 18, 2023

Kristen Muszynski, Community Planner
Town of Gray
Henry Pennell Municipal Complex
24 Main Street
Gray, ME 04039

Request for Sketch Plan Review
Proposed Amended Site Plan
152 Portland Road
Gray Assessor's Map 59 Lot 31-19
152 Portland Road, LLC

Dear Kristen,

On behalf of 152 Portland Road, LLC, we have prepared the enclosed Sketch Plan to present their proposed new residential project located on Gray Assessor's Map 59, shown as Lot 31-19. As we discussed during our meeting with you and Doug Webster and the Applicant on September 5, 2023, and in subsequent conversations with you and with the Applicant, the Applicant is proposing to Amend the existing Site Plan previously granted to Greg Kennedy (a prior owner of this property) in 1997. The proposed amendment would allow the Applicant to construct a residential structure on the southerly side of the property.

Setting

The site is located on the westerly side of Portland Road (Route 100) in Gray's Commercial C Zoning District. The approximately 2.38-acre site abuts commercially developed property to the north. To the west and south, the site abuts land owned by the Maine Turnpike Authority. Route 100 is located along the easterly site frontage. The site is currently improved with an existing approximately 2,932 sf building which is occupied by Riser Heat Pumps. There is an existing parking area associated with the building. There are two existing curb cuts off Route 100 (Portland Road).

Proposed Amendments

As discussed during our meeting, the Applicant is proposing to add a second building to this site for residential use. It is our understanding that since there would be two different uses on the site, each use must have its own lot.

The proposed Amendment would split the lot into two parcels as shown on the enclosed Sketch Plan. The existing building and associated parking on the site would be in Parcel A. Parcel A is proposed at approximately 40,000 sf and would be subject to an easement for a proposed private way to provide frontage for Parcel B.

The proposed new building would be on Parcel B as shown on the Sketch Plan. As noted above, a new 50' wide private way (approximately 150.04' long) would be created to provide the requisite 200' minimum frontage for Parcel B. The proposed area of Parcel B is approximately 63,643 sf.

As the enclosed Sketch Plan demonstrates, the Applicant is proposing to construct a new approximately 40' deep by 90' wide building on this site. The proposed 3,600 sf building would include two new residential units at this time, with space for either a future residential unit or attached garage. Given the proposed lot size of Parcel B, it is our understanding that the residential density in the C zone would allow up to three units on this property.

Parking is shown for the residential building based on a minimum of 2 parking spaces per residential unit. Residential waste generated by the occupants of the building will be collected weekly by a private waste hauler.

Public water (using an existing site service stub) will be provided to the building. An on-site subsurface disposal system will be constructed on Parcel B for the proposed new building. A new underground service run will provide power and telecommunication lines for the building.

Project Phasing

Duplexes are allowed in the Commercial District. Multi-family (3 or more units) is a Conditional Use in this Zoning District. It is our understanding from discussions with you that a three-unit residential building would require Subdivision Review as well as an Amended Site Plan, whereas a duplex would require only an Amended Site Plan review.

The Applicant would like to phase this project such that the construction of the duplex can move forward upon Site Plan Approval, and any future phase in which a third unit would be constructed would require Subdivision Review and Approval by the Planning Board.

Sketch Plan Application Materials

We have included 7 copies of the following materials in support of the applicant's Sketch Plan presentation for Amended Site Plan review during the upcoming meeting with the Gray Planning Board and staff representatives:

- Cover letter
- Planning Board Application Form for Sketch Plan Review
- Conceptual Sketch Plan showing the Proposed Site Layout (SK-3)*

* *Please note that Sketch Plan 3 also shows the perimeter boundary information and existing condition information as surveyed by our office. Soils data shown on the plan is based on the Medium Intensity Web Soils Survey*

Closure

With this submittal, we are seeking placement on the Planning Board's upcoming October 12, 2023 agenda for a Sketch Plan review. We look forward to this opportunity to discuss the project merits with you and the Planning Board as we begin the design and permitting process for this new project.

In the interim, we are available to meet with the Town staff again, if appropriate, to discuss this project in further detail. We look forward to hearing from you.

Sincerely,

ST.CLAIR ASSOCIATES

[redacted]

Nancy J. St.Clair, P.E.
Vice President
NJS:njs

C: 152 Portland Road, LLC

PLANNING BOARD/STAFF REVIEW COMMITTEE APPLICATION
TOWN OF GRAY MAINE

PROPERTY TO BE DEVELOPED			
Property Location/Address	152 Portland Road	Property Map/Lot	59 . 31 . 19 .
Zoning District	Commercial	Lot Acreage	2.38
Owner Name	152 Portland Road LLC	Tax Sheet	
Owner Address	152 Portland Road, Gray Maine	Owner Phone	207-615-8600
APPLICANT			
Name (IF different than owner)		Contact Phone Number	
Mailing Address		Alternate Phone Number	
Mailing City/State/Zip		Fax Number	
Email Address			
AGENT/CONSULTANT			
Name	David St.Clair Jr	Contact Phone Number	207-829-5558
Mailing Address	34 Forest Lane	Alternate Phone Number	207-415-5553
Mailing City/State/Zip	Cumberland, ME 04021	Fax Number	
Email Address	david@stclairassociatesmaine.com		

PROJECT

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

☐ **Subdivision**
- ☒ Sketch Plan Review
- Preliminary Plan Review (Major)
- Final Plan Review (Major)
- Minor

☒ **Site Plan Review**
- ☒ Pre-Application Conference
- Minor
- Major

☐ **Shoreland Zoning Permit**

☐ **Other (specify)**
- Conditional Use
- Amendment
- Extension
- Workshop
- Contract Zone Request

Project Description / Comments:

Applicant Signature [redacted] **Date** 9/18/23

MAINE REAL ESTATE TAX-Paid

1002140173118

WARRANTY DEED

(Maine Statutory Short Form)

KNOW ALL PERSONS BY THESE PRESENTS, that **Greg Kennedy**, of 44 Westwood Road, Gray, Maine 04039 for consideration paid, grant(s) to **152 Portland Road, LLC**, a Maine limited liability company whose mailing address is 34 Westmore Avenue, Cumberland, Maine 04039, with **warranty covenants**, the land together with all buildings thereon situated in the Town of Gray, County of Cumberland and State of Maine, being more particularly described as follows:

See attached Exhibit A – Property Description

Witness my hand and seal this 23rd day of November, 2021,

Signed, Sealed, and Delivered
in the presence of:

Witness

[redacted]
Greg Kennedy

STATE OF MAINE
COUNTY OF CUMBERLAND

November 23, 2021

Personally appeared the above-named **Greg Kennedy**, and acknowledged the foregoing instrument to be his free act and deed.

Before me

[redacted]
Notary Public

Brenda J. Hall
Notary Public, State of Maine
My Commission Expires
March 9, 2027

DOC :83643 BK:38921 PG:338
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
11/24/2021, 09:50:06A
Register of Deeds Jessica M. Spaulding E-RECORDED

EXHIBIT A

A certain lot or parcel of land with the buildings thereon, situated in the Town of Gray, County of Cumberland and State of Maine, described as follows:

Beginning at the old road at the corner of land now or formerly of Israel Hodsden; thence southeast on the road to land now or formerly of Eben Cobb; thence northeast on said Cobb's line to the County Road; thence northwest on the road to said Israel Hodsden's land; thence on Hodsden's line to the bounds first mentioned.

EXCEPTING AND RESERVING from the above-described premises a parcel of land about seven and one-half acres in area taken by the Maine Turnpike Authority for its right-of-way, pursuant to a condemnation dated May 15, 1954 and recorded in the Cumberland County Registry of Deeds in Book 2172, Page 101, and also another lot or strip of land required for a relocation of Route 100 involving about seventeen one-hundredths of an acre, and being Five Hundred Ninety Five and six tenths (595.5) feet in length and about Fourteen (14) feet in depth.

Reference is made to Warranty deed from Peter J. Marion to the within Grantor dated March 3, 1998 and recorded in the Cumberland Registry of Deeds in Book 13638, Page 266..

152 Portland Road, LLC
152 Portland Road
Gray, ME 04039

September 25, 2023

Kristen Muszynski, Community Planner
Town of Gray
Henry Pennell Municipal Complex
24 Main Street
Gray, ME 04039

Agent Authorization Letter – 152 Portland Road, LLC
Review and Permitting Process
Gray Assessor's Map 59, Lot 31-19

Dear Kristen,

I have hired St.Clair Associates to be part of my project team to assist me in preparing, submitting and presenting the local and/or State application package(s) in support of my proposed development on my property located at 152 Portland Road in Gray, Maine.

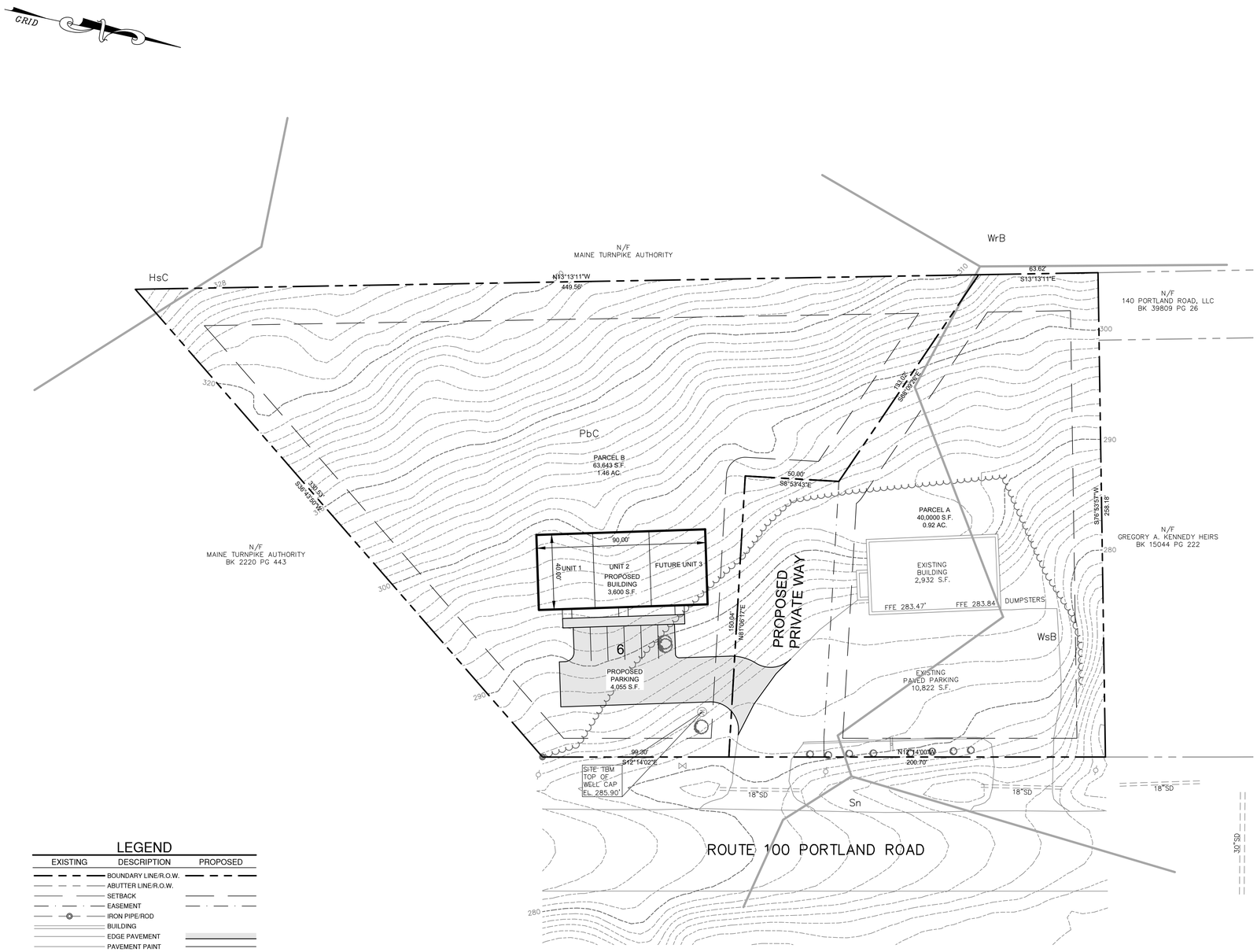
Please be advised that Nancy St.Clair and David St.Clair Jr., of St.Clair Associates, have my authorization to act as my agent and technical representatives on behalf of 152 Portland Road LLC, in support of the review of the above referenced project.

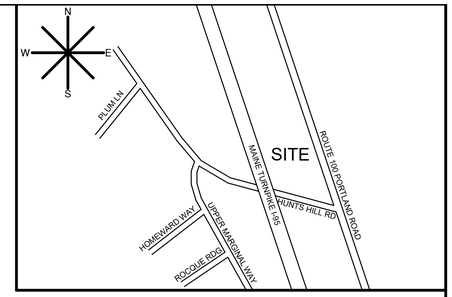
Please let me know if you have any questions.

Sincerely,

152 PORTLAND ROAD, LLC
Matt Copp







LOCATION MAP N.T.S.

GENERAL NOTES

1) THE RECORD OWNER OF THE PROPERTY IS 152 PORTLAND ROAD, LLC AS DESCRIBED IN A DEED RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 38921 PAGE 337.

2) THE PROPERTY IS SHOWN ON THE TOWN OF GRAY TAX MAP 59 BEING SHOWN AS LOT 31-19.

3) THE BEARINGS AND NORTH ORIENTATION SHOWN HEREON ARE BASED UPON GRID NORTH, NORTH AMERICAN DATUM OF 1983, MAINE WEST ZONE. THE CONTOURS AND ELEVATIONS SHOWN HEREON ARE BASED UPON NORTH AMERICAN VERTICAL DATUM OF 1988.

4) PLAN REFERENCES:

A) SITE PLAN 152 PORTLAND ROAD MADE FOR GREG KENNEDY GREG'S AUTO BODY DATED DECEMBER 8, 1997 BY JOHN D. PALMITER, PLS.

B) PROPERTY & SITE PLAN 142 PORTLAND ROAD MADE FOR GREG KENNEDY DBA GREG'S AUTO BODY DATED THROUGH FEBRUARY 22,2001 BY JOHN D. PALMITER, PLS AND RECORDED IN PLAN BOOK 201 PAGE 75.

5) THE PROPERTY SHOWN HEREON IS SUBJECT TO AND BENEFITED BY ALL MATTERS OF RECORD ON FILE AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS. REFERENCE IS MADE TO THE FOLLOWING:

A) EXCEPTIONS REFERENCED IN A DEED RECORDED IN BOOK 38921 PAGE 337.

6) THE PROPERTY SHOWN HEREON IS LOCATED IN THE TOWN OF GRAY COMMERCIAL (C) ZONING DISTRICT. THE MINIMUM SPACE REQUIREMENTS FOR PROPERTY LOCATED IN THE C ZONING DISTRICT ARE AS FOLLOWS:

MINIMUM LOT SIZE:	40,000 S.F.
MINIMUM STREET FRONTAGE:	200 FEET
MINIMUM AREA PER DWELLING UNIT:	20,000 S.F. (TOWN WATER)
MINIMUM AREA PER DWELLING UNIT:	40,000 S.F. (PRIVATE WELL)
MAXIMUM IMPERVIOUS SURFACE:	65%
MAXIMUM LOT COVERAGE:	50%
MINIMUM FRONT YARD SETBACK:	10 FEET
MINIMUM SIDE YARD SETBACK:	15 FEET
MINIMUM REAR YARD SETBACK:	20 FEET
MAXIMUM BUILDING HEIGHT:	35 FEET

SEE TOWN OF GRAY ZONING ORDINANCE FOR MORE DETAILED INFORMATION FOR PROPERTY IN COMMERCIAL ZONING DISTRICT.

7) THE PROPERTY SHOWN DOES NOT APPEAR TO BE LOCATED IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON THE TOWN OF GRAY FLOOD HAZARD MAP 230048 0015 A HAVING AN EFFECTIVE DATE OF JANUARY 6, 1982.

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	BOUNDARY LINE/R.O.W.	
	ABUTTER LINE/R.O.W.	
	SETBACK	
	EASEMENT	
	IRON PIPE/ROD	
	BUILDING	
	EDGE PAVEMENT	
	PAVEMENT PAINT	
	EDGE OF GRAVEL	
	CURBLINE	
	TREELINE	
--122-- --120--	CONTOURS	
30.20	SPOT GRADE	
W	WATER	
	GATE VALVE	
	HYDRANT	
(W)	POTABLE WELL	
	CULVERT	
OHE	OVERHEAD ELEC. & TEL.	
UGE	UNDERGROUND ELEC. & TEL.	
	UTILITY POLE	

SOILS LEGEND

SOILS TYPE LABEL	SOIL NAME	SLOPE	HYDROLOGIC SOIL GROUP
HsC	LYMAN-ABRAM COMPLEX	8%-15% SLOPES	HSG D
PbC	PAXTON FINE SANDY LOAM	3% TO 8% SLOPES	HSG C
Sn	SCANTIC SILT LOAM	0% TO 3% SLOPES	HSG D
WsB	WOODBRIDGE VERY STONY FINE LOAM	0% TO 8% SLOPES	HSG C
WrB	WOODBRIDGE FINE SANDY LOAM	8% TO 88% SLOPES	HSG C

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

REV:	BY:	DATE:	STATUS:
A	DCS	09-06-2023	FOR REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ST.CLAIR ASSOCIATES ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ST.CLAIR ASSOCIATES

ST.CLAIR ASSOCIATES
LAND SURVEYING AND CIVIL ENGINEERING
34 Forest Lane
Cumberland, ME 04021
Tel (207) 829-5558

PROJECT NO.	FIELD BOOK	DESIGN	CHKD	DRAWN
23071	ELECT	.	DCS	DCS

SKETCH PLAN -3
OF:
PORTLAND ROAD PROPERTY
152 PORTLAND ROAD
GRAY, MAINE
FOR:
152 PORTLAND ROAD, LLC
152 PORTLAND ROAD
GRAY, ME 04039

DATE	SCALE
09-06-2023	1"=30'

SHEET 1

23071SK-3 TAB 23071SK-3

PLANNING BOARD/STAFF REVIEW COMMITTEE APPLICATION
TOWN OF GRAY MAINE

PROPERTY TO BE DEVELOPED			
Property Location/Address	EAGLES NEST ROAD	Property Map/Lot	63 . 35 . 24 .
Zoning District	RRA	Lot Acreage	41.3 ACRES
Owner Name	BLACKWATER DEVELOPMENT, LLC	Tax Sheet	
Owner Address	19 MITCHELLWOOD DR, FALMOUTH, ME 04105	Owner Phone	(207) 318 - 6931
APPLICANT			
Name (IF different than owner)	SEBAGO REALTY, LLC	Contact Phone Number	(207) 310 - 0506
Mailing Address	PO BOX 1116	Alternate Phone Number	
Mailing City/State/Zip	WINDHAM, ME 04062	Fax Number	
Email Address	DUSTIN@DMROMA.COM		
AGENT/CONSULTANT			
Name	DM ROMA CONSULTING ENGINEERS	Contact Phone Number	(760) - 840 - 0997
Mailing Address	PO BOX 1116	Alternate Phone Number	(207) 591 - 5055
Mailing City/State/Zip	WINDHAM, ME 04062	Fax Number	
Email Address	JP@DMROMA.COM		

PROJECT

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

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

Project Description / Comments:

THE PROJECT INCLUDES THE SUBDIVISION OF 14 LOTS ON A 42-ACRE PARCEL OF LAND. 13 OF THE LOTS WILL BE DESIGNED AS AN OPEN SPACE SUBDIVISOIN, WITH ONE LOT DESIGNED AS A 12-ACRE BACK LOT. ALL LOTS WILL BE SERVED BY PRIVATE WELLS, PRIVATE ON-SITE WASTEWATER DISPOSAL AND UNDERGROUND POWER. THE PROJECT INCLUDES THE CONSTRUCTION OF A NEW ROADWAY APPROXIMATELY 1,000 FEET IN LENGTH TO BE BUILT TO THE RURAL PUBLIC EASEMENT ROAD STANDARD.

Applicant Signature [redacted] **Date** 9-18-23

Major Subdivision
Preliminary Plan Application

To the Town of Gray

Aerie Estates Subdivision

A 14-lot Residential Subdivision
Located off Eagles Nest Road
Gray, Maine

Applicant:
Sebago Realty, LLC
PO Box 1116
Windham, ME 04062

Prepared By:
DM Roma Consulting Engineers
PO Box 1116
Windham, ME 04062

DM ROMA
CONSULTING ENGINEERS

TABLE OF CONTENTS

MAJOR PRELIMINARY SUBDIVISION APPLICATION TO TOWN OF GRAY

AERIE ESTATES SUBDIVISION

SECTION 1	APPLICATION FORM & SUBMISSION CHECKLIST
SECTION 2	AGENT AUTHORIZATION
SECTION 3	SITE VICINITY MAP – USGS QUADRANGLE
SECTION 4	PROJECT NARRATIVE
SECTION 5	RIGHT, TITLE OR INTEREST DOCUMENTS
SECTION 6	EXISTING OR PROPOSED EASEMENTS OR COVENANTS
SECTION 7	TECHNICAL CAPACITY OF THE APPLICANT
SECTION 8	CAPACITY OF EXISTING UTILITIES TO SERVE THE PROJECT
SECTION 9	SOLID WASTE DISPOSAL
SECTION 10	STORMWATER MANAGEMENT
SECTION 11	IMPACT TO IMPORTANT OR UNIQUE NATURAL AREAS
SECTION 12	VEHICLE TRAFFIC
SECTION 13	SOILS INFORMATION AND NATURAL RESOURCES
SECTION 14	WATER SUPPLY FOR DOMESTIC USE AND FIRE PROTECTION
SECTION 15	PROVISIONS FOR WASTEWATER DISPOSAL
SECTION 16	PROJECT COST ESTIMATE AND FINANCIAL CAPACITY
SECTION 17	FLOOD HAZARD AREAS

SECTION 1

APPLICATION FORM & SUBMISSION CHECKLIST

PLANNING BOARD/STAFF REVIEW COMMITTEE APPLICATION
TOWN OF GRAY MAINE

PROPERTY TO BE DEVELOPED			
Property Location/Address	EAGLES NEST ROAD	Property Map/Lot	63 . 35 . 24 .
Zoning District	RRA	Lot Acreage	41.3 ACRES
Owner Name	BLACKWATER DEVELOPMENT, LLC	Tax Sheet	
Owner Address	19 MITCHELLWOOD DR, FALMOUTH, ME 04105	Owner Phone	(207) 318 - 6931
APPLICANT			
Name (IF different than owner)	SEBAGO REALTY, LLC	Contact Phone Number	(207) 310 - 0506
Mailing Address	PO BOX 1116	Alternate Phone Number	
Mailing City/State/Zip	WINDHAM, ME 04062	Fax Number	
Email Address	DUSTIN@DMROMA.COM		
AGENT/CONSULTANT			
Name	DM ROMA CONSULTING ENGINEERS	Contact Phone Number	(760) - 840 - 0997
Mailing Address	PO BOX 1116	Alternate Phone Number	(207) 591 - 5055
Mailing City/State/Zip	WINDHAM, ME 04062	Fax Number	
Email Address	JP@DMROMA.COM		

PROJECT

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

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

Project Description / Comments:

THE PROJECT INCLUDES THE SUBDIVISION OF 14 LOTS ON A 42-ACRE PARCEL OF LAND. 13 OF THE LOTS WILL BE DESIGNED AS AN OPEN SPACE SUBDIVISOIN, WITH ONE LOT DESIGNED AS A 12-ACRE BACK LOT. ALL LOTS WILL BE SERVED BY PRIVATE WELLS, PRIVATE ON-SITE WASTEWATER DISPOSAL AND UNDERGROUND POWER. THE PROJECT INCLUDES THE CONSTRUCTION OF A NEW ROADWAY APPROXIMATELY 1,000 FEET IN LENGTH TO BE BUILT TO THE RURAL PUBLIC EASEMENT ROAD STANDARD.

Applicant Signature [redacted] **Date** 9-15-2023

PRELIMINARY SUBDIVISION PLAN APPLICATION SUBMISSION CHECKLIST F-1B TOWN OF GRAY MAINE

For Office Use Only
Date Received: _____
Received by: _____

SUBDIVISION

Subdivision Name	AERIE ESTATES SUBDIVISION	Date	9-15-2023

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 7** 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 *preliminary plan*.

There is an additional checklist for *final plan* submission. Neither checklist addresses the standards that the subdivision plan must meet. For review standards refer to Article 13 & checklist F-1D.

PRELIMINARY SUBDIVISION PLAN SUBMISSION REQUIREMENTS

	Submitted by Applicant	Not Applicable	Applicant Request to be Waived	Reviewed by Planner/ Engineer	Waived by Planning Board
401.7.2.A Fourteen (14) copies of application plus accompanying information	X				
401.7.2.B LOCATION MAP					
B.1 Existing subdivisions in the proximity of proposed subdivision	X				
B.2 Locations and names of existing and proposed streets	X				
B.3 Zoning boundaries and designations	X				
B.4 Outline of proposed subdivision and owner's remaining contiguous land	X				
401.7.2.C PRELIMINARY PLAN					
C. Fourteen (14) copies of all maps and/or drawings printed or reproduced on paper	X				
C. Scale not smaller than 1"= 100'; for subdivision more than 100 acres, not smaller than 1"= 200'	X				
401.7.2.C APPLICATION REQUIREMENTS					
C.1 Name of subdivision name of town and assessor's map and lot number(s)	X				
C.2 Verification of right, title or interest in property	X				
C.3 Standard boundary survey with bearings and distances, certified by PLS, all corners located and marked.	X				
C.3 Standard boundary survey shows entire parcel or tract and all contiguous land in common ownership within the last five years per MRSA Title 30-A section 4401	X				
C.4 Copy of most recently recorded deed; all restrictions, easements, rights-of-way and other encumbrances	X				
C.5 Deed restrictions on proposed new lots or dwellings	X				

401.7.2.C APPLICATION REQUIREMENTS (CONT'D)					
C.6 Map of test pits & test pit analyses by Site Evaluator or Certified Soil Scientist	X				
C.7 Type of water supply system(s)	X				
C.7 Gray Water District letter of capacity		X			
C.8 Date plan prepared, north point and graphic map scale	X				
C.9 Names and addresses of record owner, applicant, plan preparer(s) and adjoining property owners	X				
C.10 All wetlands delineated regardless of size	X				
C.11 Total acres in subdivision; location of property lines, existing building(s), unusually large specimen trees, vegetative cover type and other essential physical features	X				
C.12 All rivers, streams and brooks within and adjacent to subdivision; designation of great pond watershed	X				
C.13 Zoning district of proposed subdivision and any zoning boundary lines affecting the subdivision	X				
C.14 Location and size of existing and proposed sewers, water mains, culverts and drainage ways on and adjacent to subdivision	X				
C.15 Location, name and widths of existing and proposed streets and highways easements, building lines, parks and open spaces on or adjacent to subdivision	X				
C.16 Width & location of any streets, public improvements or open space shown in Comprehensive Plan within the property	X				
C.17 Proposed lot lines, approximate dimensions and lot areas	X				
C.18 Parcels of land proposed to be dedicated to public use; condition of such dedication		X			
C.19 Open space to be preserved; proposed ownership, improvements, management	X				
C.20 Area of each lot permitting forest clearing and/or lawn	X				
C.21 Anticipated driveway locations & constraints	X				
C.22 100-year flood elevations in flood prone areas		X			
C.22 Areas within or adjacent to the subdivision identified by the Comprehensive Plan, MDIFW, MNAP, or BWH as areas to be preserved and appropriate preservation measures.		X			
C.23 Areas within or adjacent to subdivision listed in the Comprehensive Plan or listed/eligible to be listed on National Register of Historic Places		X			

401.7.3 ADDITIONAL REQUIRED PLANS & STUDIES					
A. Contour lines at interval set by Planning Board showing all areas at greater than 25% slopes	X				
B. Erosion & sedimentation control plan (can be waived if not in great pond watershed and < 5% impervious)	X				
C. Stormwater management plan (can be waived if not in great pond watershed and < 5% impervious)	X				
D. Phosphorus management plan if in pond watershed & > 4 lots or 800 ft. of road or drives		X			
401.7.4 REQUIRED SUBMISSIONS FOR WHICH A WAIVER MAY BE GRANTED					
A. High Intensity Soil Survey by a Registered Soil Scientist	X				
B.1 Hydrogeologic assessment for subdivision if any part of subdivision is over a sand and gravel aquifer, or		X			
B.2 Hydrogeologic assessment if average density is more than one dwelling unit per 100,000 sq. ft.			X		
B.3 Hydrogeologic assessment if Board determines potential adverse impacts on ground water quality (e.g., shallow bedrock soils, cluster subdivisions)			X		
C. Vehicular trip generation rates & entrance sight distances	X				
D. Traffic impact analysis by a registered traffic P.E. for 28 or more parking spaces or projected to generate more than 140 vehicle trips per day to include expected ADT, peak-hour volumes, access conditions, distribution of traffic, types of vehicles expected, effect on LOS, recommended improvements		X			

SECTION 2

AGENT AUTHORIZATION

September 15, 2023

Town of Gray
24 Main Street
Gray, ME 04039

Re: Agent Authorization

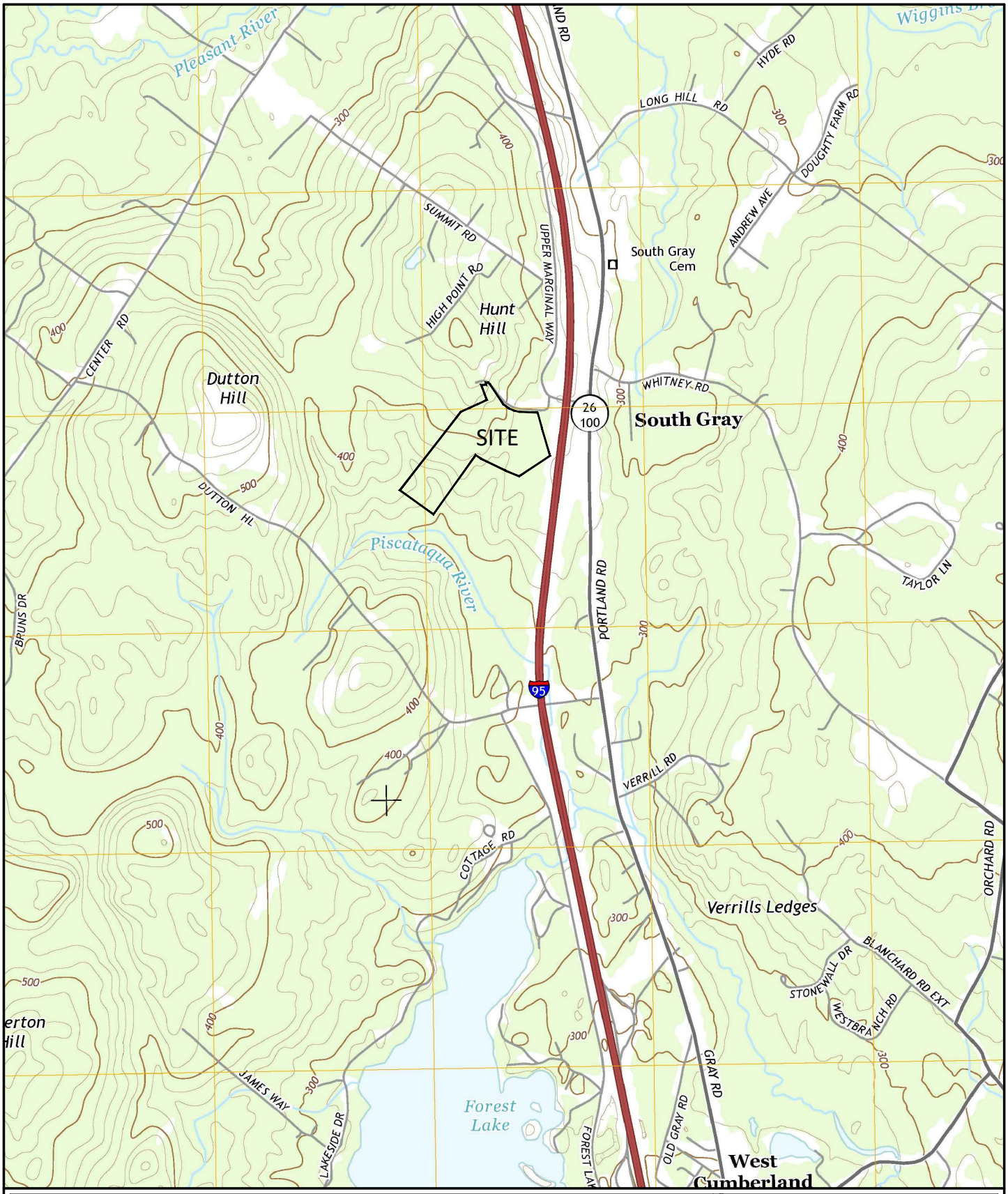
Sebago Realty, LLC is the applicant for the proposed Aerie Estates Subdivision located off Eagles Nest Road on a 42-acre property shown as Lot 35-24 on the Town of Gray Tax Map 63. Sebago Realty LLC authorizes JP Connolly and DM Roma Consulting Engineers to act as agent in the procurement of land use permits associated with the project.



Dustin M. Roma
Sebago Realty LLC

SECTION 3

SITE VICINITY MAP – USGS QUADRANGLE



SITE LOCATION MAP

AERIE ESTATES SUBDIVISION
GRAY, MAINE

FOR:
SEBAGO REALTY, LLC
PO BOX 1116
WINDHAM, ME 04062

SCALE: 1"=2,000'
DATE: 9-14-2023
JOB NUMBER: 23050

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

SECTION 4

PROJECT NARRATIVE

Section 4 – Project Narrative

Zoning:	Rural Residential and Agricultural (RRA)
Acreage:	41.3 Acres
Tax Map/Lot:	63/35-24
Existing Use:	Undeveloped land
Proposed Use:	Single Family Residential

Project Summary: Sebago Realty, LLC is proposing to develop a 41±-acre parcel located off of Eagles Nest Road in Gray, Maine. The applicant is proposing a total of 14 lots to be subdivided. The project consists of a 13-lot residential open space subdivision with Lot 14 being created as a 12-acre back lot. The development will include the construction of a new roadway approximately 1,000 ft in length that will be built to the Rural Public Easement Street standard. All lots in the subdivision will require private wells and private on-site subsurface wastewater disposal fields. All electrical and data utilities will be installed underground.

Outside Agency Permitting: This 41-acre parcel was separated as a "retained lot" when the adjacent subdivision was developed in 2013. Sebago Realty LLC is purchasing this property as vacant land and there is no common scheme of development between this project applicant and the previous developer of the adjacent project that was permitted 10 years ago and built. Sebago Realty LLC will be building the roadway improvements and selling vacant lots to home builders. The proposed project will include approximately 1.8 acres of total land disturbance to build the roadway, fire cistern, stormwater management features and to grade the roadway side slopes. The project will create approximately 19,800 square feet of paved impervious surfaces for the roadway construction, and the remaining disturbed areas will be revegetated. The project will require a Stormwater Permit-By-Rule from the Maine Department of Environmental Protection, and also a Natural Resources Protection Act Permit-By-Rule for the clearing of trees within 250 feet of a suspected vernal pool. Although the vernal pool was not inventoried for significance, we are treating the pool as significant for permitting purposes and obtaining the permits that would be necessary if the pool was determined to be significant.

Existing Site Conditions and Watershed: The 41± acre project site is currently undeveloped. The site primarily drains southeasterly through drainage channels that is tributary to the Piscataqua River which then flows to the Presumpscot River.

Construction Plan: We are hopeful to start construction of the sitework as soon as possible to be completed over the fall/winter with base paving to be laid in the spring of 2024. The lot development will depend on the housing market at the time and is difficult to estimate the full build out of the project.

SECTION 5

RIGHT, TITLE OR INTEREST DOCUMENTS

QUITCLAIM DEED

Corporate Grantor
Maine Statutory Short Form

KNOW ALL MEN BY THESE PRESENTS, That Amvest Capital Partners, LLC, a Maine limited liability company with a principal place of business in Portland, in the County of Cumberland and State of Maine, for consideration paid, grants to Blackwater Development, LLC, a Maine limited liability company whose mailing address is 19 Mitchellwood Drive, Falmouth, Maine 04105, with **QUITCLAIM COVENANTS**, the real property situated in Gray in the County of Cumberland and State of Maine more particularly described in Exhibit A attached hereto and incorporated herein by reference.

MAINE REAL ESTATE

IN WITNESS WHEREOF, Amvest Capital Partners, LLC has caused this instrument to be signed in its corporate name and seal by Bruce K. Brown, III, its President thereunto duly authorized, this 17, day of August, 2007.

[redacted]
WITNESS

Amvest Capital Partners, LLC
[redacted]
Bruce K. Brown, President

State of MAINE
County of Cumberland, ss

August 17, 2007

Personally appeared before me the above named, Bruce K. Brown , President of Amvest Capital Partners, LLC and acknowledged the foregoing instrument to be his free act and deed and the free act and deed of said company.

[redacted]
Notary Public/~~Attorney at Law~~

[redacted]
Printed Name
My commission expires:

Christine C. Walls
NOTARY PUBLIC
State of Maine
My Commission Expires 7/1/10

EXHIBIT A

A certain lot or parcel of land with the buildings thereon situated in the Town of Gray, County of Cumberland and State of Maine, known as the Julia E. Burrows farm and homestead, meaning hereby to convey all real estate in said Gray of which said Julia E. Burrows died seized and possessed, and more particularly described in the following named lots:

First, a certain lot commencing at the most northerly corner of the Orchard Lot, so -called; thence running southwesterly on line now or formerly of William Emery, 80 rods, more or less, to Lot #30 in the third division of lots in said Gray, thence southeasterly 60 rods to land now or formerly of Edson Buker; thence northeasterly by said Buker land, to land conveyed to William H. Webster on March 10th, A.D. 1874; thence north westerly by said land to the first mentioned bound, containing 30 acres, more or less.

Second, another parcel of land in said Gray, being a part of Lot #30 as aforesaid, and bounded as follows:- Beginning at the most northerly corner of said Lot; thence s outhwest about 70 rods to land now or formerly of Lewis Libby's heirs; thence southeast 112 rods, thence northeast about 70 rods thence northwest 112 rods to the bounds first mentioned, containing 46 acres, more or less.

Third, another parcel of land in s aid Gray, being a part of said Lot #30, bounded as follows: Beginning at the most northerly corner of said land; thence southwest 54 rods to land now or formerly of James Small, Jr.; thence southeast 6 rods; thence northeast 54 rods; thence northwest 6 rods to the bound first mentioned, containing 2 acres, more or less.

Also another certain lot or parcel of land with the buildings thereon situated in the Town of Gray, County of Cumberland and State of Maine, and more particularly bounded and described as follows:

Being a small strip of land situated on the west side of the road leading from the County Road to the Burrows house, so called, bounded on the east by land now or formerly of Frank T. Grover, on the southwest by land formerly of Edwards Burrowes, and containing one half acre, more or less, and being the same premises conveyed to me by Vera B. Favor by deed dated September 15, 1941, and recorded in the Cumberland County Registry of Deeds in Book 1650, Page 402.

Also another certain lot or parcel of land situated in the Town of Gray, County of Cumberland and State of Maine being on the Southwesterly side of the road leading from the Federal Road to the home now or formerly owned by Stanley Favor, formerly the Burroughs homestead, and bounded and desc ribed as follows:

Beginning on the Southwesterly side of the road leading to the said Stanley Favor place at the most Northerly comer of land formerly owned by Jolm Hunt; thence Southwesterly on the line of the stone wall on said road 53 rods; thence Nort hwesterly 7 rods to a stone wall on the land formerly owned by Edward Burroughs; thence on said course 7 rods to a stone wall on said Burroughs land; thence North 50° East 52 rods to the road first mentioned; thence Southeasterly to the first mentioned bou nd; Said lot containing 5 acres, more or less, being part of the same

premises conveyed to Cumberland Savings and Loan Association by Herman D. Morey and Addie I. Morey by a Mortgage Deed dated December 29, 1948 and recorded in the Cumberland County Registry of Deeds in Book 1941, Page 164 to which reference is made for a further description.

Also another certain piece or parcel of land situated in the Town of Gray, County of Cumberland and State of Maine lying on the Westerly side of the road leading from Gray corner to Portland and bounded as follows, viz:

Beginning on the Westerly side of said road at a willow tree nearly opposite Edson Baker's house, thence running Northwesterly by a stone wall by land owned by Winfield S. Leighton, thence Southerly by a stone wall, and said Leighton's line by land owned by Stephen Small's heirs, thence Southeasterly by a stone wall and said Small's heirs line to the bound road, thence Northerly on the line of said road, to the willow free and first bounds –Also one other piece of land situated hi said Gray bounded as follows, viz: Beginning at the most Southerly corner of land owned by Winfield S. Leighton thence running Southwesterly by a stone wall that separates land owned by Stephen Small's heirs from that I hereby convey until it strikes Edson Buker's land- thence Northeasterly by a stone wall that separates said Buker's land from that I hereby convey until it strikes the road leading to Nicholas Leighton's house - thence Southeast by a stone wall to Winfield S. Leighton's land, thence Southerly by a stone wall to land owned by Stephen Small containing 20 acres, more or less. Intending to convey all the cleared land I own on the Westerly side of said road.

EXCEPTING AND RESERVING a certain lot or parcel of land situ ated in the Town of Gray, County of Cumberland and State of Maine, bounded and described as follows, to wit:

Parcel No. 24-A: Beginning at a point on the property line between the land of Henry V. Blais and Cora M. Blais, and the land of Gabrielle Rodriqu e, said point being located 150 feet distant easterly from the survey base line of the Maine Turnpike, so called, measured at right angles at Station 3043+66.5, as shown on a Property Plan entitled, "Maine Turnpike Authority, Maine Turnpike, Section 2 - Portland to Augusta", dated January 4, 1954, on file in the office of the Maine Turnpike Authority and to be filed in the Cumberland County Registry of Deeds, the parcel of land herein described being shown on Gray Sheet No. 2 of said Plan;

thence, S 36°-00' W by the line of land of said Henry V. Blais and Cora M. Blais a distance of about 42.3 feet to a point on the line of land of Charles V. Henry and Helen J. Henry, said point being located 129.4 feet distant easterly from the said survey base line, measu red at right angles at Station 3043+29.5;

thence, S 55°-08' W by the line of land of said Charles V. Henry and Helen J. Henry a distance of about 374.4 feet to a point, said point being located 150 feet distant westerly from the said survey base line, measured at right angles at Station 3040+80.3;

thence, N 6°-52' E parallel to the said survey base line and 150 feet distant westerly therefrom a distance of about 28.1 feet to a point on the line of land of Donald F. Stevens, said point being located 150 feet distant westerly from the said survey base line, measured at right angles at Station 3041+08.4;

thence, N 55°-08' E by the line of land of said Donald F. Stevens a distance of about 359.7 feet to an angle point, said angle point being located 118.4 fee t distant easterly from the said survey base line, measured at right angles at Station 3043+41.8; thence, N 36° -00' E continuing by the line of land of said Donald F. Stevens a distance of about 62.4 feet to a point, said point being located 150 feet distant westerly from the said survey base line, measured at right angles at Station 3044+00.4;

thence, S 6°-52' W parallel to the said survey base line and 150 feet distant easterly therefrom a distance of about 33.9 feet to the point of beginning; containing approximately 0.13 acres;

The bearings in the foregoing description are referred to the true meridian.

For Mortgagor's title see Personal representative's Deed of Sale from Lois M. Paradise as Personal Represetative of the Estate of Noel E. Paradise dat ed May 6, 2005 and recorded in the Cumberland County Registry of Deeds in Book 22631, Page 61 and Warranty Deed from Lois M. Paradise dated May 6, 2005 and recorded at the Cumberland County Registry of Deeds in Book 22631, Page 65.

Meaning and intending t o convey all the premises as outlined in Affidavit of Exercise of Power of Sale dated May 18, 2007 and recorded in the Cumberland County Registry of Deeds in Book 25124, Page 55.

Received
Recorded Register of Deeds
Aug 17,2007 04:00:20P
Cumberland County
Pamela E. Lovley

PURCHASE AND SALE AGREEMENT

THIS PURCHASE AND SALE AGREEMENT, made as of the Effective Date, is by and between Blackwater Development LLC, having a mailing address of 19 Mitchellwood Drive, Falmouth, Maine 04062 ("Seller") and Oak Hill Properties, LLC, having a mailing address of PO Box 1855, Windham, ME 04062 ("Purchaser"). The "Effective Date" of this Agreement is the date that the last of the parties has executed this Agreement, as indicated below such party's signature.

1. **Sale of the Premises.** On the terms and conditions contained in this Agreement, Seller agrees to sell and Purchaser agrees to purchase and pay for the following (collectively, the "Premises" unless the context specifically requires otherwise):

    a. That certain tracts or parcels of land situated in the Town of Gray, Cumberland County, Maine as more particularly described as 41.28 acres of "Remaining Land" as depicted on the Amended Plan of Eagles Ridge Subdivision recorded in Cumberland County Registry of Deeds Plan Book 219 Pages 22 and 23. Said Lot is also generally depicted on the Town of Gray Tax Map 63 as Lot 35-24.

2. **Purchase Price.** The purchase price for the Premises described herein shall be

3. **Closing.** A good and sufficient Warranty Deed showing marketable title shall be delivered to the Purchaser and it is agreed that this transaction shall be closed and the Purchaser shall pay the Purchase Price as provided herein

and execute all papers necessary for the completion of the purchase within 15 days following the expiration of the Due Diligence Period. Should the title prove defective, then the Seller shall have a reasonable time not to exceed 30 days after due notice of such defect or defects to remedy the title and hereby agrees to use diligent efforts to cure such defects. If, after such time, the defect or defects are not corrected so that there is a marketable title, then the Purchaser may at their option, withdraw said earnest money and be relieved from all obligations hereunder.

4. **Financing**. The purchase of the premises is not subject to financing.

5. **Contingency.**

   a. Buyer shall have 60 days from the Effective Date to perform due diligence investigation which may include, but not be limited to, availability of utilities, soils investigation, municipal zoning review, legal review and environmental review. Seller authorizes Buyer and his consultants access to the property during this due diligence period, and further authorizes test holes to be dug provided that the property is returned to the condition it was in prior to undertaking the activity.

6. **Miscellaneous.** For good and valuable consideration, the parties agree as follows:

   a. That full possession will be given at the transfer of title.
   b. The following items shall be pro-rated as of transfer of title: Taxes for the current tax year to the Town of Gray, Maine.
   c. Seller is responsible for payment of all taxes, fees and assessments associated with said premises that are due as of the Effective Date.
   d. The risk of loss or damage to said premises by fire or otherwise until transfer of title is assumed by the Seller.
   e. If the purchaser fails to make any of the payments, or

any part thereof, or to perform any of the covenants on their part made or entered into, this Agreement, at the option of the Sellers, shall be terminated.

f. This agreement completely expresses the obligations of the parties, and this contract is entered into by each party after opportunity for investigation, neither party relying on any statements or representations not contained in this Agreement made by the other or on his or her behalf. The Purchasers acknowledge that they are purchasing the property "as is".
g. In the event of Purchaser default, Seller shall have all remedies at law or equity, or may retain the earnest money as full and final settlement, at Seller's option.
h. This contract shall be interpreted under the laws of the State of Maine. Time is of the essence of this Agreement. "Days" shall mean calendar days unless otherwise noted.
i. This contract may be assigned by Seller to other person(s) or entity at the sole option of Seller.
j. Seller is responsible for providing metes and bounds description to be used for the deed.

I agree to purchase the above described property at the price and upon the terms and conditions set forth.

Date: 8-3-23

[redacted] [redacted]

Nicolas Cummings
Oak Hill Properties, LLC

I hereby accept the offer and agree to deliver the above described property at the price and upon the terms and conditions above stated.

Date:



John Jordan
Blackwater Development, LLC

September 14, 2023

Sebago Realty, LLC
PO Box 1116
Windham, ME 04062

Oak Hill Properties has agreed to purchase a 41.28-acre parcel of land in the Town of Gray from Blackwater Development, LLC under the terms outlined in a Purchase and Sale agreement with an effective date of 8-3-2023. The parcel is shown as "Remaining Land" on the Amended Plan of Eagles Ridge Subdivision recorded in Cumberland County Registry of Deeds Plan Book 219 pages 22 and 23.

Oak Hill Properties intends to assign the contract to Sebago Realty, LLC and it is expected that Sebago Realty LLC will be the Buyer of the property with an expected closing date on or about October 20, 2023, subject to financing.

[redacted]

Nicolas Cummings
Oak Hill Properties, LLC

[redacted]

Dustin Roma
Sebago Realty, LLC

SECTION 6

EXISTING OR PROPOSED EASEMENTS OR COVENANTS

Section 6 – Existing or Proposed Easements or Covenants

We are not aware of any existing easements or covenants associated with the property. The roadways are intended to remain private with an easement to be offered to the Town of Gray to provide winter maintenance. A Declaration of Covenants and Restrictions will be filed with the Registry of Deeds to outline expectations for lot development. A Homeowners Association will be formed to maintain the open space, roadway and stormwater management infrastructure. Copies of the HOA documents and Covenants will be provided to the Town with the Final Plan Application.

SECTION 7

TECHNICAL CAPACITY OF THE APPLICANT

Section 7 – Technical Capacity of the Applicant

Sebago Realty, LLC is the developer of the project. Sebago Realty intends to build the proposed roadway and utility improvements and sell each of the proposed lots to home builders. Sebago Realty recently completed the Gunpowder Mill Subdivision in Windham which consisted of 14 residential lots on a 1,400-foot long paved road with public water, underground utilities and private on-site wastewater disposal.

DM Roma Consulting Engineers is responsible for performing Civil Engineering design and Land Permitting. The Licensed Professional Engineers at DM Roma have been designing land development projects for over 17 years and have extensive experience with Stormwater Management Design, Roadway and Utility engineering, Site grading, Erosion Control design, Engineering of on-site wastewater disposal systems, and regulatory permitting through local municipalities, the Maine Department of Environmental Protection, the Maine Department of Transportation, US Army Corps of Engineers and other affiliated agencies.

Survey, Inc. has been retained to perform Land Surveying services for the project. Bill Shippen is a Licensed Professional Land Surveyor with extensive experience in all aspects of land surveying and subdivision planning.

Mark Hampton Associates performed the Class-A High Intensity Soil Survey. Mark Hampton is a licensed site evaluator and Certified Soil Scientist.

Mainely Soils LLC was retained to perform soils analysis for septic system suitability and wetland delineation. Alex Finamore is the principal of Mainely Soils LLC, and is a Licensed Site Evaluator and Wetland Scientist.

SECTION 8

CAPACITY OF EXISTING UTILITIES TO SERVE THE PROJECT

Section 8 – Capacity of Existing Utilities to Serve the Project

Potable Water – There is no public water located within reasonable proximity to this project, so each lot will be required to install a private well.

Fire Protection Water – There is an existing 30,000 gallon fire cistern located at the top of Eagles Nest Road, which is approximately 500 feet away from our project roadway entrance. The Fire Chief indicated that additional water storage will be necessary for this development, so we have proposed an additional 30,000 gallon fire cistern to be installed at the project entrance, or to potentially install sprinkler systems in the buildings if construction constraints do not allow the cistern to be installed economically.

Electrical Service – Primary electrical service will be extended through the project underground from Eagles Nest Road.

Wastewater Disposal – There is no public sewer available to the property, so on-site wastewater disposal systems will be required on each lot.

Natural Gas – We are not proposing to connect to any natural gas mains.

Storm Drainage – The project has been designed to manage stormwater runoff on the property and there is no proposed drainage connection into any public drainage infrastructure.

SECTION 9

SOLID WASTE DISPOSAL

Section 9 – Solid Waste Disposal

Construction waste in the form of stumps or brush will be hauled off site and disposed in accordance with all applicable regulations. The homes in the subdivision will utilize the Town of Gray Transfer Station to dispose of household waste, or contract with a private curbside waste pick-up contractor if they prefer.

SECTION 10

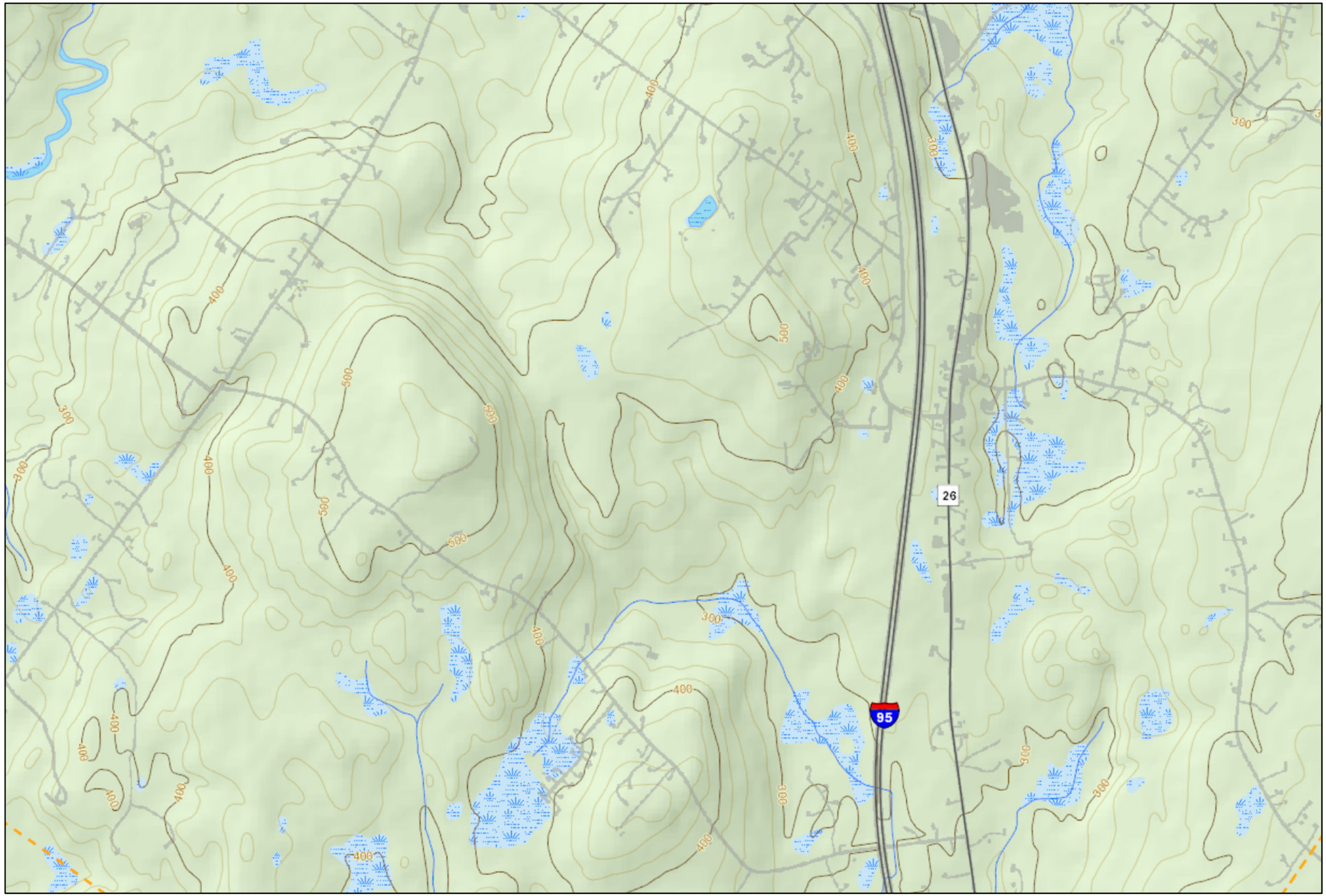
STORMWATER MANAGEMENT

SECTION 11

IMPACT TO IMPORTANT OR UNIQUE NATURAL AREAS

Section 11 – Impact to Important or Unique Natural Areas

Included is a map from the Inland Fisheries and Wildlife database that they maintain under the "Beginning with Habitat" program, which shows that there are no areas within the project vicinity that have been identified as significant wildlife habitat. We have identified two potential vernal pools that could be found significant after an inventory can be completed during the typical April breeding season. We are treating these potential vernal pools as significant until such time that they are ruled non-significant, and we have designed the project to meet the required 25% maximum tree clearing within 250 feet of the vernal pool limits, and no impact within 100 feet.



BEGINNING WITH HABITAT

Legend

- City/Township
- 1
- 2
- Watershed Divide (HUC 12)
- Watershed Divide (HUC 10)
- Watershed Divide (HUC 8)
- Watershed Divide (HUC 6)
- Wetlands
- Great Ponds
- Stream_Buffers_75ft
- Shellfish Beds
- Public Water Supply Wells
- Source Protection
- Aquifers
- ETSC Animal Habitat Buffers
- Rare Plants and Natural Communities
- Natural Communities
- Wild Brook Trout Habitat
- Atlantic Salmon Rearing Habitat
- Atlantic Salmon Spawning Habitat
- Roseate Tern, Piping Plover or Least Tern Nesting Areas
- Deer Wintering
- Inland Wading Bird and Waterfowl Habitat
- Wildlife Wetlands
- Seabird Nesting Island
- Shorebird Habitat
- Tidal Wading Bird and Waterfowl Habitat
- Significant Vernal Pools
- Municipal
- Water Dist., etc.
- Private
- State
- Conserved Lands Easements
- Focus
- Less than 2000 Vehicles/Day
- More than 2000 Vehicles/Day
- Less than 2000 Vehicles/Day
- More than 2000 Vehicles/Day
- Undeveloped Habitat Blocks
- Highway Bridge Connectors
- Maine Conserved Lands
- Federal

State of Maine

0 0.225 0.45 0.9 1.35 mi

N W E S

Supported in part by Maine Outdoor Heritage Fund lottery ticket sales

[redacted]
Department of Inland Fisheries & Wildlife
September 2023

Supported in part by Loon Conservation Plate finds

SECTION 12

VEHICLE TRAFFIC

Section 12 – Vehicle Traffic

The Institute of Transportation Engineers (ITE) Trip Generation handbook (10th edition) estimates that Single-Family Detached Housing (Land Use Code #210) is expected to generate the following vehicle trips:

Weekday	= 9.43 trips per dwelling unit
AM Peak Hour	= 0.75 trips per dwelling unit
PM Peak Hour	= 0.99 trips per dwelling unit

Accordingly, the proposed 14 single-family residential dwellings can be expected to generate a total of 132 trip-ends during a typical weekday, 11 trips in the morning peak hour and 14 trips in the evening peak hour.

The ITE Handbook also provides the following directional distribution rates for a Single-Family Detached Housing unit:

AM Peak Hour	= 26% enter site and 74% exit site
PM Peak Hour	= 64% enter site and 36% exit site

Based upon the above distribution patterns, 3 trips during the morning peak hour and 9 trips during the evening peak hour will enter the site. Accordingly, 8 trips during the morning peak hour and 5 trip during the evening peak hour will exit the site.

SECTION 13

SOILS INFORMATION AND NATURAL RESOURCES

August 23, 2023

Dustin Roma
DM Roma Consulting Engineers
P.O. Box 1116
Windham, ME 04062

RE: Wetland Review and Soil Evaluation for Subsurface Wastewater Disposal Systems
Eagles Nest Road Subdivision, Gray, Maine

Dear Mr. Roma:

On August 23, 2023, fifteen test pits were dug and assessed on 14 proposed residential house lots within the proposed Eagle Nest Road Subdivision located on the southwest side of Eagle Nest Road in Gray by Alexander Finamore, LSE #391. The parcel is identified by the Town of Gray as Tax Map 63 Lot 35-24. Each test pit was located by with a submeter accuracy Trimble Geo handheld GPS unit and marked with a pink survey flag. All of the test pits contained suitable soils to support a 'First Time System' according to the Maine Subsurface Wastewater Disposal Rules. Please find the soil profile descriptions of the test pits attached.

Wetlands onsite were previously delineated by Stantec, Inc. Wetland boundaries were reviewed by GPS for accuracy. The boundary of wetlands were found to be delineated in accordance with the Army Corps of Engineers 1987 Wetland Delineation Manual (1987 Manual) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0) (Regional Supplement, 2012).

Two areas were noted as potential vernal pools in the previous delineation by Stantec in a pit and mound forested wetland setting. The extent of the vernal pool in the northeast portion of the site adjacent to Eagles Nest Road appeared to be accurate. The extent of the vernal pool southwest of the first pool was observed to be smaller than previously delineated and did not extend all the way to the wetland boundary. Pink flags were hung and GPS located to delineate the extent of this feature.

These pool areas should be considered as “Significant Vernal Pools” going forward with planning purposes. A formal vernal pool survey is recommended between April 10 and May 5 to determine if they are in fact “Significant Vernal Pools”.

If you have any questions, please feel free to email me at: alfinamore@yahoo.com or call 207-650-4313.

Sincerely,

[redacted]

Alexander A. Finamore, LSE #391, CWS #267



Photo 1: Typical portion of soil profile in upland areas



Photo 2: View looking southerly at the northeastern vernal pool depression from Eagles Nest road



Photo 3: View looking east across the second vernal pool depression southwest of the first pool



Photo 4: Typical wetland view in the northern portion of the site



Photo 5: Typical wetland view in the southwestern portion of the site



Photo 6: Typical wetland view in the central portion of the site

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
Eagles Nest Road Subdivision	Blackwater Development, LLC	Gray

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-1 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
SANDY LOAM		DARK YELLOWISH BROWN	
	SOMEWHAT FIRM	LIGHT OLIVE BROWN	COMMON, MEDIUM, & DISTINCT
		GRAYISH BROWN	
LIMIT OF EXCAVATION = 34"			

[ ] hydric [■] non-hydric

Slope %: 5-8

Limiting factor: 20"

[■] ground water [ ] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name:

Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-2 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
SANDY LOAM		DARK YELLOWISH BROWN	
GRAVELLY SANDY LOAM		YELLOWISH BROWN	
	FIRM	GRAYISH BROWN	FEW, FINE, & FAINT
LIMIT OF EXCAVATION = 34"			

[ ] hydric [■] non-hydric

Slope %: 10-15

Limiting factor: 30"

[ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name:

Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-3 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
SANDY LOAM		DARK YELLOWISH BROWN	
GRAVELLY SANDY LOAM		YELLOWISH BROWN	
	FIRM	GRAYISH BROWN	FEW, FINE, & FAINT
LIMIT OF EXCAVATION = 34"			

[ ] x hydric [ ] non-hydric

Slope %: 10-12

Limiting factor: 26"

[ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name:

Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-4 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
		STRONG BROWN	
COARSE SANDY LOAM			
		YELLOWISH BROWN	
	FIRM	GRAYISH BROWN	FEW, FINE, & FAINT
LIMIT OF EXCAVATION = 30"			

[ ] hydric [■] non-hydric

Slope %: 10

Limiting factor: 18"

[ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name:

Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) C (Soil Condition)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:
	name printed/typed:	Lic.#:
L.S.E.	signature: [redacted]	Date: 8/19/23
	name printed/typed: Alexander A. Finamore	Lic.#: 391

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
Eagles Nest Road Subdivision	Blackwater Development, LLC	Gray

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-5 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
COARSE SANDY LOAM w/ STONES		STRONG BROWN	
		YELLOWISH BROWN	
	FIRM	GRAYISH BROWN	FEW, FINE, & FAINT
LIMIT OF EXCAVATION = 32"			

[ ] hydric [■] non-hydric | Slope %: 10 | Limiting factor: 22" | [ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-6 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
COARSE SANDY LOAM w/ STONES		STRONG BROWN	
		YELLOWISH BROWN	
	FIRM	GRAYISH BROWN	FEW, FINE, & FAINT
LIMIT OF EXCAVATION = 34"			

[ ] hydric [■] non-hydric | Slope %: 8-10 | Limiting factor: 22" | [ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-7 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
		STRONG BROWN	
		YELLOWISH BROWN	
COARSE LOAMY SAND w/ STONES			
	SOMEWHAT FIRM	LIGHT YELLOWISH BROWN	
LIMIT OF EXCAVATION = 36"			

[ ] x hydric [ ] non-hydric | Slope %: 10-12 | Limiting factor: >36" | [ ] ground water [ ] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-8 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
COARSE SANDY LOAM w/ STONES		STRONG BROWN	
		YELLOWISH BROWN	
		GRAYISH BROWN	COMMON, MEDIUM, & DISTINCT
	FIRM	GRAY	
LIMIT OF EXCAVATION = 28"			

[ ] hydric [ ] non-hydric | Slope %: 3-5 | Limiting factor: 16" | [■] ground water [ ] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) | C (Soil Condition)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:
	name printed/typed:	Lic.#:
L.S.E.	signature: [redacted]	Date: 8/19/23
	name printed/typed: Alexander A. Finamore	Lic.#: 391

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
Center Road Subdivision	River Road Housing, LLC	Gray

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-9 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
LOAMY SAND w/ STONES		BROWN	
		YELLOWISH BROWN	
	FIRM	OLIVE BROWN	
LIMIT OF EXCAVATION = 34"			

[ ] hydric [■] non-hydric | Slope %: 3-5 | Limiting factor: 28" | [ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-10 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
LOAMY SAND w/ STONES		BROWN	
		YELLOWISH BROWN	
LIMIT OF EXCAVATION = 34"			

[ ] hydric [■] non-hydric | Slope %: 5-8 | Limiting factor: >34" | [ ] ground water [ ] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-11 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
		BROWN	
GRAVELLY SANDY LOAM		YELLOWISH BROWN	
	FIRM	GRAYISH BROWN	FEW, FINE, & FAINT
LIMIT OF EXCAVATION = 34"			

[ ] x [ ] hydric [■] non-hydric | Slope %: 3-5 | Limiting factor: 24" | [ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-12 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
		BROWN	
GRAVELLY SANDY LOAM		YELLOWISH BROWN	
			COMMON, MEDIUM & DISTINCT
	FIRM	GRAYISH BROWN	
LIMIT OF EXCAVATION = 34"			

[ ] hydric [ ] non-hydric | Slope %: 5-8 | Limiting factor: 18" | [■] ground water [ ] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) | C (Soil Condition)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:
	name printed/typed:	Lic.#:
L.S.E.	signature: [redacted]	Date: 8/19/23
	name printed/typed: Alexander A. Finamore	Lic.#: 391

FORM F

SOIL PROFILE/CLASSIFICATION INFORMATION

Detailed Description of Subsurface Conditions at Project Sites

Project Name:	Applicant Name:	Project Location (municipality):
Center Road Subdivision	River Road Housing, LLC	Gray

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-13 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
		BROWN	
SANDY LOAM		YELLOWISH BROWN	
	SOMEWHAT FIRM	PALE BROWN	
			COMMON, MEDIUM, & DISTINCT
LIMIT OF EXCAVATION = 36"			

[■] hydric [ ] non-hydric | Slope %: 0-3 | Limiting factor: 28" | [■] ground water [ ] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-14 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
LOAMY SAND w/ STONES		BROWN	
		YELLOWISH BROWN	
	FIRM	GRAYISH BROWN	COMMON, MEDIUM & DISTINCT
LIMIT OF EXCAVATION = 36"			

[■] hydric [ ] non-hydric | Slope %: 3-5 | Limiting factor: 28" | [■] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: TP-15 [X] Test Pit [ ] Boring

0 * Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK BROWN	NONE OBSERVED
LOAMY FINE SAND w/ STONES		BROWN	
		YELLOWISH BROWN	
	SOMEWHAT FIRM	GRAY BROWN	FEW, FINE, & FAINT
			COMMON, MEDIUM, & DISTINCT
LIMIT OF EXCAVATION = 34"			

[ ] x hydric [ ] non-hydric | Slope %: 3-5 | Limiting factor: 28" | [■] ground water [ ] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: 3 (Profile) | C (Soil Condition)

SOIL DESCRIPTION AND CLASSIFICATION

Exploration Symbol: [X] Test Pit [ ] Boring

* Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)

Texture	Consistency	Color	Mottling

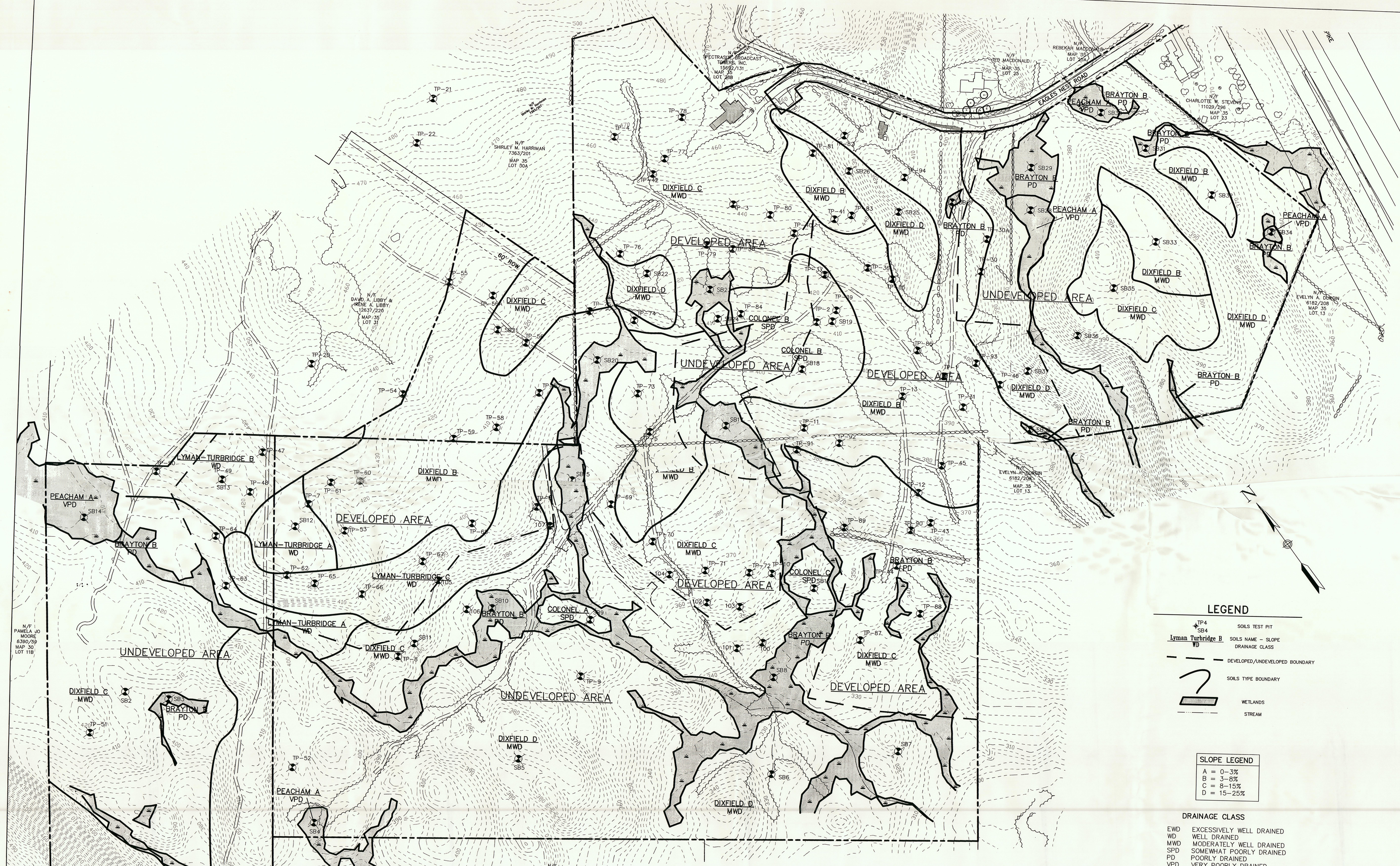
[ ] hydric [ ] non-hydric | Slope % | Limiting factor | [ ] ground water [■] restrictive layer [ ] bedrock

C.S.S. Soil Series / phase name: | Drainage Class | Hydrologic Group

L.S.E. Soil Classification: (Profile) | (Soil Condition)

Professional Endorsements *(as applicable)*

C.S.S.	signature:	Date:
	name printed/typed:	Lic.#:
L.S.E.	signature: [redacted]	Date: 8/19/23
	name printed/typed: Alexander A. Finamore	Lic.#: 391



LEGEND

- TP4 / SB4 — SOILS TEST PIT
- Lyman Turbridge B / WD — SOILS NAME – SLOPE / DRAINAGE CLASS
- DEVELOPED/UNDEVELOPED BOUNDARY
- 2 — SOILS TYPE BOUNDARY
- WETLANDS
- STREAM

SLOPE LEGEND
A = 0–3%
B = 3–8%
C = 8–15%
D = 15–25%

DRAINAGE CLASS

EWD	EXCESSIVELY WELL DRAINED
WD	WELL DRAINED
MWD	MODERATELY WELL DRAINED
SPD	SOMEWHAT POORLY DRAINED
PD	POORLY DRAINED
VPD	VERY POORLY DRAINED

GENERAL NOTES:

1. CLASS A – HIGH INTENSITY SOIL SURVEY (MINIMUM STANDARDS) DEVELOPED PORTION OF PARCEL AND CLASS C – MEDIUM INTENSITY SOIL SURVEY (MINIMUM STANDARDS) UNDEVELOPED PORTION OF PARCEL PERFORMED BY MARK HAMPTON ASSOCIATES, INC.
2. EXISTING CONDITIONS AND TOPOGRAPHY DETERMINED FROM TOPOGRAPHICAL SURVEY PERFORMED BY TITCOMB ASSOCIATES.
3. REFERENCE THE "SOIL NARRATIVE REPORT – EAGLE NEST SUBDIVISION – GRAY, MAINE – MARCH 2006" BY MARK HAMPTON ASSOCIATES, INC.

STATE OF MAINE — MARK J. HAMPTON — CERTIFIED SOIL SCIENTIST

NOTE: HIGH INTENSITY SOIL SURVEY HAS BEEN PREPARED BY MARK HAMPTON ASSOCIATES, INC. 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.

I HEREBY CERTIFY THAT THIS HIGH INTENSITY SOIL SURVEY WAS CONDUCTED IN CONFORMANCE WITH THE STANDARDS ADOPTED BY THE MAINE ASSOCIAITION OF PROFESSIONAL SOIL SCIENTISTS

MARK J. HAMPTON, C.S.S.* 216, L.S.E.*263 — DATE

GRAPHIC SCALE
100 0 50 100 200
1 inch = 100 ft

Stantec Consulting Services Inc.
22 Free Street, Suite 205
Portland, ME U.S.A.
04101-3900
Tel. 207.775.3211
Fax. 207.775.6434
Stantec

EAGLS RIDGE SUBDIVISION
EAGLE NEST ROAD, GRAY, MAINE

PREPARED FOR:
BIKWATER DEVELOPMENT, LLC
320 CONGRESS STREET
ORTLAND, MAINE 04102

Revision	Date
REV PER TOWN PEER REVIEW COMMENTS	2/29/08
FINAL MAJOR SUBDIVISION SUBMISSION	4/24/08

Designed	FJL
Drawn	PJP
Checked	FJL
Scale	1"=100'
Date	1-25-08

MEDIUM & HIGH INTENSITY SOIL SURVEY

Job No. 195410271
Drawing 2

SECTION 14

WATER SUPPLY FOR DOMESTIC USE AND FIRE PROTECTION

Section 14 – Water Supply for Domestic Use and Fire Protection

Each lot will be required to install an individual private on-site well for domestic use. We have proposed to restrict the area within 150 feet of the roadway to prohibit the placement of wells in this area. We have designed the lots so that leach fields will be constructed in the front or side yard of the homes close to the road, and the wells will be set in the back yards at least 150 feet back from the roadway right-of-way.

We are proposing to install a series of buried fire tanks with a total capacity of 30,000 gallons at the project entrance. We are requesting to reserve the option to install sprinkler systems in all homes within the subdivision in lieu of installing a fire cistern if construction constraints become problematic or overly expensive.

SECTION 15

PROVISIONS FOR WASTEWATER DISPOSAL

Section 15 – Provisions for Wastewater Disposal

Each lot will be required to install an individual private on-site wastewater disposal system. HHE-200 design applications will be completed for each lot as part of the building permit application process. We have conducted test pits on each lot to demonstrate that suitable area is available for a first-time wastewater disposal system, and those test pits are contained in section 13 of this application. We did not perform a hydrogeologic analysis because the site is not located in a Lake Watershed or within an aquifer, and the lot density is greater than one dwelling per 100,000 square feet.

SECTION 16

PROJECT COST ESTIMATE AND FINANCIAL CAPACITY

Section 16 – Project Cost Estimate and Financial Capacity

The project includes the construction of approximately 1,000 feet of roadway, electrical utilities and storm drain infrastructure. Sitework costs are estimated to be the following:

1.	Clear & Grub Roadway	$20,000
2.	Install gravel road base	$60,000
3.	Bituminous Pavement	$90,000
4.	Electrical service	$20,000
5.	Storm Drain Pipe	$8,000
6.	Stormwater BMPs	$20,000
7.	Erosion Control & Misc.	$10,000
	Total Sitework Estimate:	$228,000

Enclosed is a letter from Evergreen Credit Union indicating that the applicant has the financial capacity to complete the project.

Evergreen SM Credit Union

September 15, 2023

Mr. Dustin Roma
Sebago Realty, LLC
PO Box 1116
Windham, Maine 04062

Dear Mr. Roma,

Please accept this letter as confirmation that Evergreen Credit Union finds Sebago Realty to have the financial capacity and general creditworthiness towards execution of the purchase of a 42-acre parcel of land to develop a 14-lot sub-division in Gray. Evergreen would require additional information regarding this property in consideration of financing with approval subject to complete underwriting.

Should you have any questions or require any additional information, do not hesitate to contact me. Otherwise, our best wishes for success with this endeavor…

Regards,

[redacted]

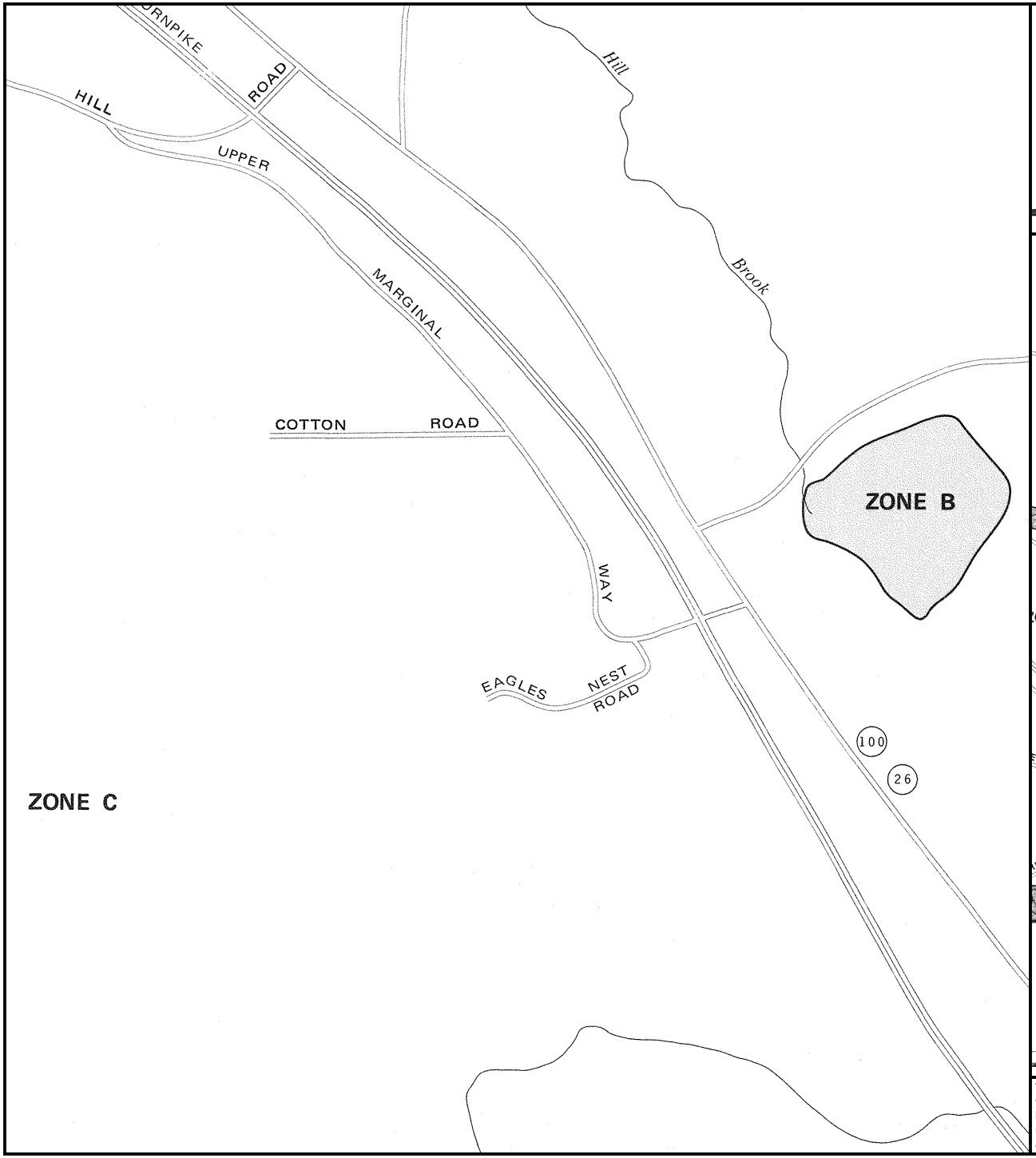
Julie B. Littell
Vice President

SECTION 17

FLOOD HAZARD AREAS

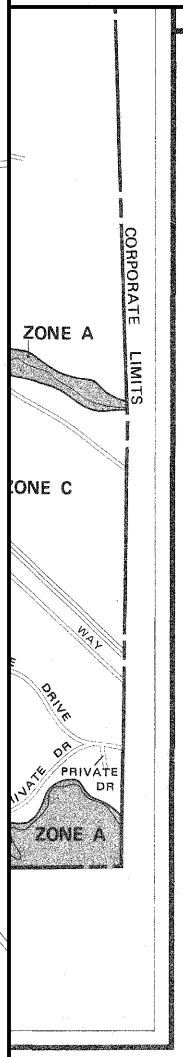
Section 19 – Flood Hazard Areas

The property is not located within any mapped floodplain areas. Attached is a copy of the effective FEMA FIRM Community Panel Map for reference.



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

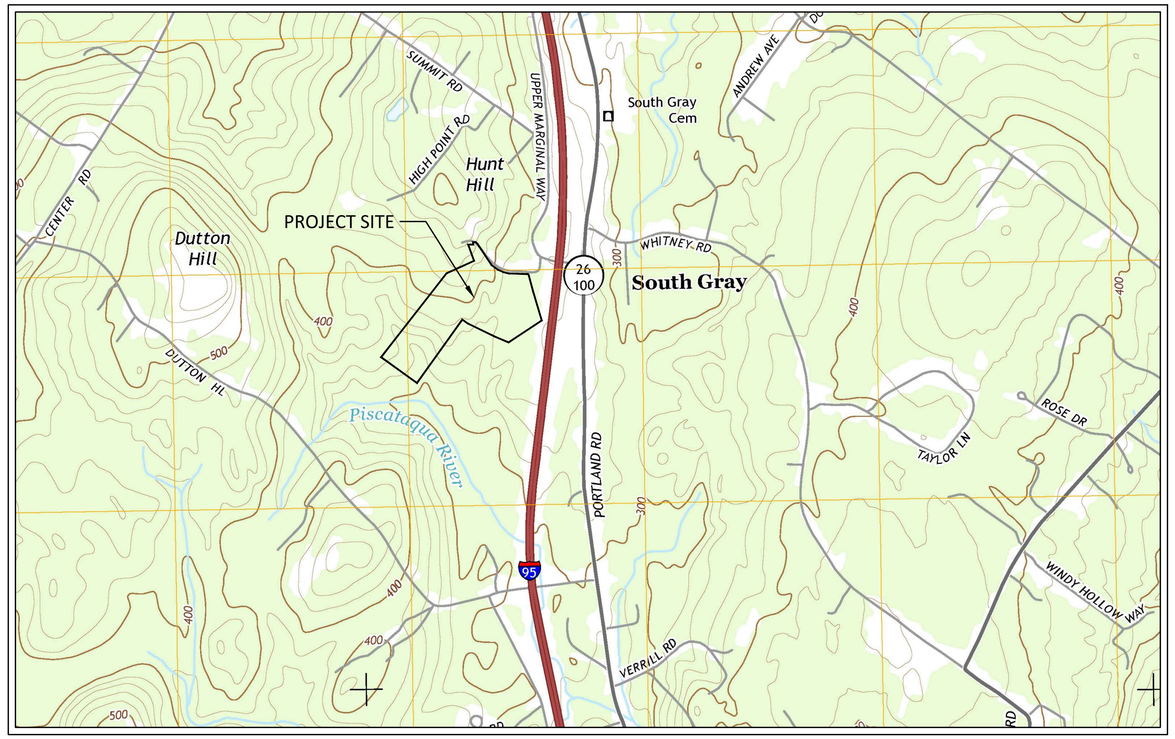
This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, 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.

AERIE ESTATES SUBDIVISION

AERIE DRIVE, OFF EAGLES NEST ROAD
GRAY, MAINE

CONSULTANTS

CIVIL ENGINEER	DM ROMA CONSULTING ENGINEERS
LAND SURVEYOR	SURVEY, INC
SITE EVALUATOR	MAINELY SOILS, LLC



PROJECT VICINITY MAP
SCALE 1" = 1,000'

ISSUED FOR PRELIMINARY REVIEW - NOT FOR CONSTRUCTION

SEPTEMBER 15, 2023

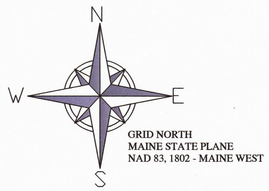
PREPARED BY:

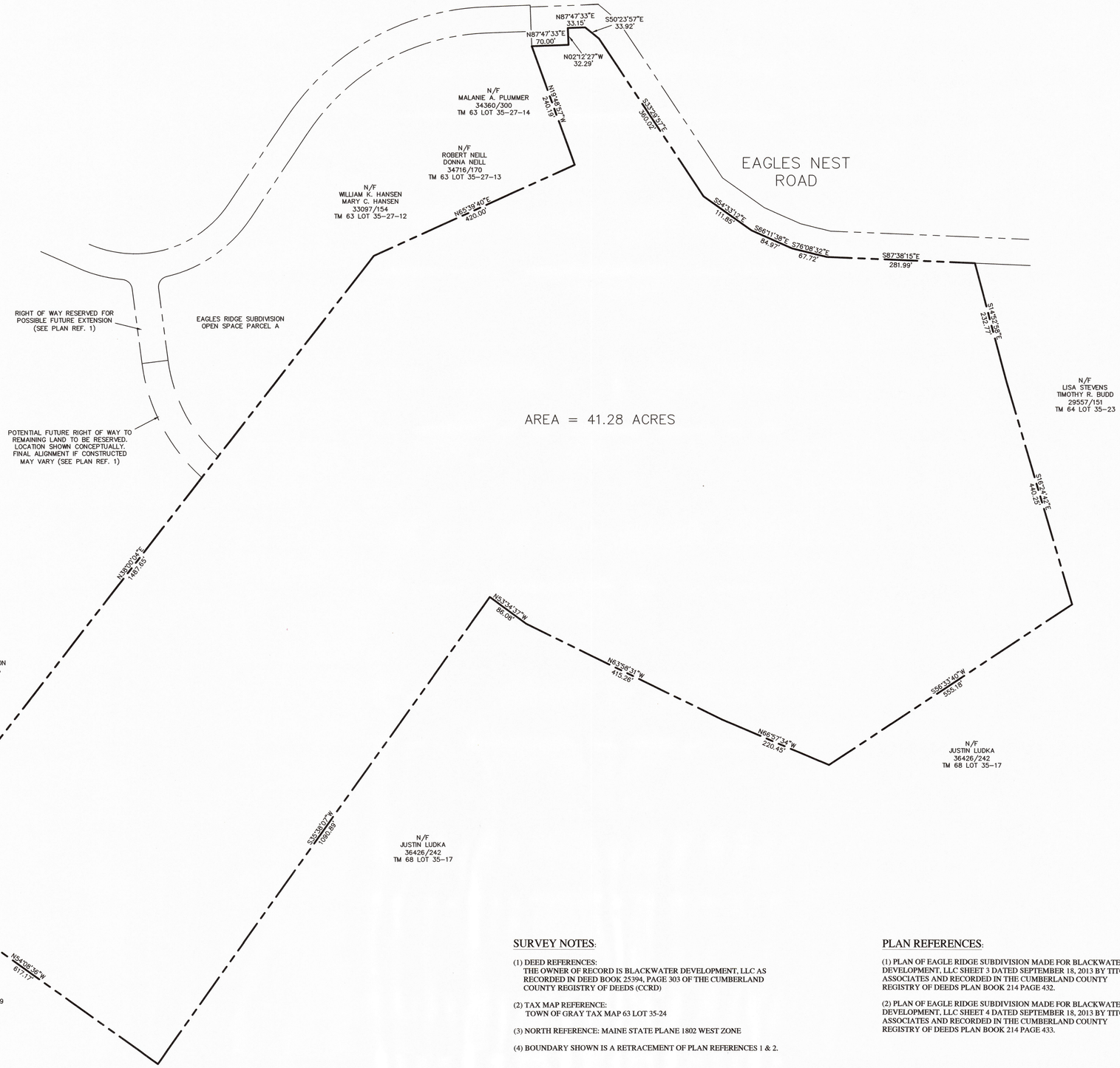
DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

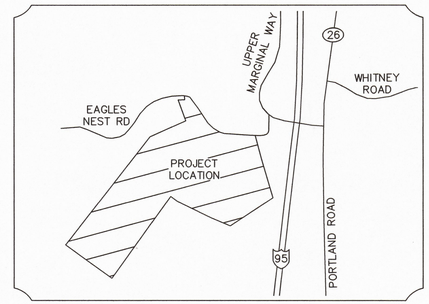
APPLICANT:
SEBAGO REALTY, LLC
PO BOX 1116
WINDHAM, ME 04062

AERIE ESTATES SUBDIVISION
DRAWING SHEET INDEX

PAGE NO.	DESCRIPTION
1	TITLE SHEET
2	BOUNDARY SURVEY
3	SUBDIVISION PLAN
4	ROADWAY PLAN
5	CISTERN AND STORMWATER DETAILS
6	ROADWAY PROFILE
7	CONSTRUCTION DETAILS
8	CONSTRUCTION DETAILS







LOCATION MAP
(NOT TO SCALE)

SURVEY NOTES:

(1) DEED REFERENCES:
THE OWNER OF RECORD IS BLACKWATER DEVELOPMENT, LLC AS RECORDED IN DEED BOOK 25394, PAGE 303 OF THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD)

(2) TAX MAP REFERENCE:
TOWN OF GRAY TAX MAP 63 LOT 35-24

(3) NORTH REFERENCE: MAINE STATE PLANE 1802 WEST ZONE

(4) BOUNDARY SHOWN IS A RETRACEMENT OF PLAN REFERENCES 1 & 2.

PLAN REFERENCES:

(1) PLAN OF EAGLE RIDGE SUBDIVISION MADE FOR BLACKWATER DEVELOPMENT, LLC SHEET 3 DATED SEPTEMBER 18, 2013 BY TITCOMB ASSOCIATES AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS PLAN BOOK 214 PAGE 432.

(2) PLAN OF EAGLE RIDGE SUBDIVISION MADE FOR BLACKWATER DEVELOPMENT, LLC SHEET 4 DATED SEPTEMBER 18, 2013 BY TITCOMB ASSOCIATES AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS PLAN BOOK 214 PAGE 433.

CERTIFICATION:

I CERTIFY THAT THIS SURVEY CONFORMS TO THE STANDARDS OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS AND IS CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

WILLIAM C. [redacted]

STATE OF MAINE
WILLIAM C. SHIPPEN
2118
PROFESSIONAL LAND SURVEYOR

BOUNDARY SURVEY

EAGLES NEST ROAD
GRAY, ME

FOR: **DM ROMA CONSULTING ENGINEERS**
(CLIENT)

SURVEY BY: **SURVEY, INC.**
P.O. BOX 210
WINDHAM, ME 04062
(207) 892-2556
INFO@SURVEYINCORPORATED.COM

DWN: DRR CHK: WCS

DATE: AUGUST 2023 JOB NO. 23144

LEGEND

EXISTING	PROPOSED
PROPERTY LINE/R.O.W.	
ABUTTER PROPERTY LINE	
SETBACK	
EASEMENT LINE	
GRANITE MONUMENT	
IRON PIN/DRILL HOLE	
CENTERLINE	
BUILDING	
EDGE OF PAVEMENT/CURB	
EDGE OF GRAVEL	
EDGE OF WETLANDS	
CENTERLINE OF STREAM	
CONTOUR LINE	200 — 201
TREELINE	
CULVERT/STORMDRAIN	
SANITARY SEWER PIPE	
WELL	W
OVERHEAD UTILITIES	
UTILITY POLE	
WELL EXCLUSION AREA	
STEEP SLOPES >25%	

OPEN SPACE CALCULATIONS:

GROSS LAND AREA:	1,798,333 S.F. (±41.3 AC)
AREA OF PROPOSED LOT 14 (CONVENTIONAL BACKLOT)	522,337 SF (±12 AC)
AREA TO BE DEVELOPED AS OPEN SPACE SUBDIVISION:	1,275,996 SF (±29.3 AC)

OPEN SPACE REQUIREMENTS FOR ZONE RRA (TABLE 401.13.13.B.1):

	REQUIRED	PROVIDED
MIN. OPEN SPACE (35% OF OVERALL PARCEL)	446,599 S.F.	746,668 S.F. (58%)
MIN. USEABLE OPEN SPACE (20%)	255,199 S.F.	450,000± S.F.
MIN. CONTIGUOUS USEABLE OPEN SPACE AREA*	60,000 S.F.	671,465± S.F.

(* - ADJACENT TO ROAD)

NET RESIDENTIAL DENSITY CALCULATIONS FOR OPEN SPACE SUBDIVISION:

GROSS LAND AREA:	1,275,996 S.F. (±29.3 AC)
100% DEDUCTIONS:	
a. STEEP SLOPES (25% OR GREATER)	91,942 S.F.
b. INACCESSIBLE LAND	0 S.F.
c. 100-YEAR FLOODPLAIN	0 S.F.
d. WATERBODIES	0 S.F.
e. NON-FORESTED OR IMPACTED WETLANDS	400 S.F.
f. LIQUIDATION HARVESTING	0 S.F.
g. SIGNIFICANT ROCK OUTCROP	0 S.F.
h. GRAVEL PIT	0 S.F.
i. POORLY DRAINED SOILS	0 S.F.
j. VERY POORLY DRAINED SOILS	0 S.F.
SUBTOTAL 100% DEDUCTION:	92,342 S.F.
50% DEDUCTIONS:	
a. SOMEWHAT POORLY DRAINED SOILS	77,500 S.F.
b. RESOURCE PROTECTION (UNDEVELOPED)	0 S.F.
c. FORESTED WETLANDS (UNDEVELOPED)	80,256 S.F.
d. SIGNIFICANT HABITAT	244,656 S.F.
SUBTOTAL 50% DEDUCTIONS:	402,412 S.F.
ACTUAL DEDUCTION:	201,206 S.F.
NET AREA SUBTOTAL:	982,448 S.F.
DEDUCT 10% FOR ROADS & RIGHT OF WAYS:	98,245 S.F.
TOTAL NET AREA:	884,203 S.F.
5% BONUS DENSITY PER 401.13.13.C.4:	
(D) - 5 ACRES OF NON-HARVESTED FOREST	5% BONUS
(F) - EACH 10% OF ADDITIONAL OPEN SPACE	10% BONUS
NET RESIDENTIAL AREA WITH BONUS = 884,203 SF X 115% =	1,016,833 SF
REQUIRED MIN. AREA PER LOT:	80,000 SF
MAXIMUM RESIDENTIAL DENSITY WITH BONUS:	12.71 UNITS
NUMBER OF LOTS PROPOSED:	13



CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD BRNG	CHORD LENGTH
C1	71.97'	175.00'	23° 33' 45"	S47° 12' 42"W	71.46'
C2	11.09'	175.00'	3° 37' 54"	S60° 48' 31"W	11.09'
C3	59.63'	229.37'	14° 53' 46"	S42° 57' 27"W	59.47'
C4	47.16'	232.12'	11° 38' 28"	S56° 42' 12"W	47.08'
C5	27.56'	1425.00'	1° 06' 30"	S62° 04' 14"W	27.56'
C6	154.02'	1425.00'	6° 11' 34"	S58° 25' 12"W	153.95'
C7	133.33'	1425.00'	5° 21' 39"	S52° 38' 35"W	133.28'
C8	126.45'	1425.00'	5° 05' 03"	S47° 25' 14"W	126.41'
C9	125.54'	1425.00'	5° 02' 52"	S42° 21' 16"W	125.50'
C10	110.37'	1425.00'	4° 26' 15"	S37° 36' 42"W	110.34'
C11	123.84'	1375.00'	5° 09' 37"	S60° 02' 40"W	123.80'
C12	125.04'	1375.00'	5° 12' 38"	S54° 51' 32"W	125.00'
C13	125.04'	1375.00'	5° 12' 38"	S49° 38' 54"W	125.00'
C14	150.72'	1375.00'	6° 16' 49"	S43° 54' 11"W	150.64'
C15	128.87'	1375.00'	5° 22' 11"	S38° 04' 41"W	128.82'

LINE TABLE

LINE #	LENGTH	BEARING
L1	70.00'	N87° 47' 33"E
L2	32.29'	N2° 12' 27"W
L3	33.15'	N87° 47' 33"E
L4	33.92'	S50° 23' 57"E
L5	32.35'	S54° 33' 12"E
L6	50.00'	S54° 33' 12"E
L7	29.50'	S54° 33' 12"E
L8	17.25'	N35° 25' 50"E
L9	17.24'	N35° 25' 50"E
L10	116.26'	N62° 37' 29"E
L11	116.26'	N62° 37' 29"E
L12	14.67'	S35° 23' 35"W
L13	50.00'	S54° 36' 25"E
L14	50.00'	N35° 23' 35"E
L15	50.00'	S35° 23' 35"W
L16	85.00'	S35° 23' 35"W
L17	50.00'	N54° 36' 25"W
L18	46.74'	S35° 23' 35"W
L19	16.87'	S35° 23' 35"W
L20	132.80'	S35° 23' 35"W
L21	60.34'	S35° 23' 35"W
L22	30.77'	S65° 22' 43"E
L23	30.41'	S44° 54' 42"E
L24	38.58'	S70° 10' 05"W

APPROVED - GRAY PLANNING BOARD:

CHAIRPERSON _____ DATE _____

GENERAL NOTES:

1. THE OWNER OF RECORD OF THE PROPERTY IS BLACKWATER DEVELOPMENT, LLC BY DEED RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 25394 PAGE 303.
2. TOTAL AREA OF THE PARCEL IS APPROXIMATELY 41.3 ACRES.
3. PARCEL TAX MAP REFERENCE: TOWN OF GRAY ASSESSORS MAP 63, LOT 35-24.
4. PLAN REFERENCES:
   - 4.A. PLAN OF EAGLE RIDGE SUBDIVISION MADE FOR BLACKWATER DEVELOPMENT, LLC DATED SEPTEMBER 18, 2013 BY TITCOMB ASSOCIATES AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS PLAN BOOK 214, PAGES 432 & 433.
   - 4.B. BOUNDARY SURVEY OF EAGLES NEST ROAD, GRAY, MAINE MADE FOR DM ROMA CONSULTING ENGINEERS DATED AUGUST 2023 BY SURVEY, INC. - JOB NO 23144
5. HORIZONTAL DATUM: MAINE STATE PLANE, WEST ZONE, NAD83, U.S. FEET.
6. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
7. BOUNDARY SHOWN HEREON IS BASED ON PLAN REFERENCE 4.B.
8. TOPOGRAPHIC CONTOURS SHOWN HEREON ARE BASED ON 2015 2-FOOT LIDAR OBTAINED FROM THE MAINE OFFICE OF GIS.
9. THE PROPERTY IS LOCATED IN THE RURAL RESIDENTIAL AND AGRICULTURE DISTRICT WITH THE FOLLOWING DIMENSIONAL REQUIREMENTS:

	CONVENTIONAL SUBDIVISION	RESIDENTIAL OPEN SPACE SUBDIVISION (TABLE 401.13.13.B.1)
MIN LOT AREA:	80,000 SF	35,000 SF
MIN AREA PER DWELLING UNIT:	40,000 SF	30,000 SF
MIN STREET FRONTAGE:	200 FT	125 FT
MIN FRONT YARD SETBACK:	50 FT	40 FT
MIN SIDE YARD SETBACK:	25 FT	20 FT
MIN REAR YARD SETBACK:	50 FT	20 FT
MAX LOT COVERAGE:	10%	25%
MAX LOT BUILDING COVERAGE:	N/A	15%
MAX BUILDING HEIGHT:	35 FT	35 FT

10. LOTS 1 THROUGH 13, TOGETHER WITH THE AREAS DESIGNATED AS "OPEN SPACE", ARE DESIGNED IN ACCORDANCE WITH THE PROVISIONS FOR A RESIDENTIAL OPEN SPACE SUBDIVISION. LOT 14 IS A CONVENTIONAL SUBDIVISION BACKLOT THAT IS NOT INCLUDED IN THE CALCULATIONS FOR THE OPEN SPACE SUBDIVISION.
11. SOIL EVALUATION TEST PITS PERFORMED ON AUGUST 23, 2023 BY ALEX FINAMORE WITH MAINELY SOILS LLC.
12. WETLAND DELINEATION WAS CONFIRMED ON AUGUST 23, 2023 BY ALEX FINAMORE WITH MAINELY SOILS LLC.
13. ANY FUTURE DEVELOPMENT OR CHANGES TO THIS SUBDIVISION PLAN WILL REQUIRE PLANNING BOARD APPROVAL AND WILL BE CONSIDERED AN AMENDMENT TO A MAJOR SUBDIVISION. THE PLANNING BOARD MAY REQUIRE ADDITIONAL PLANS & STUDIES PER 401.7.3-5 THAT WERE WAIVED OR NOT REQUIRED AS PART OF THIS SUBDIVISION APPROVAL.
14. THE 75' FOREST SCENIC BUFFER ALONG EAGLES NEST ROAD IS TO REMAIN IN ITS CURRENT VEGETATIVE CONDITION EXCEPT FOR CLEARING REQUIRED FOR ROADWAY CONSTRUCTION AND ASSOCIATED SUBDIVISION IMPROVEMENTS SHOWN IN THE PROJECT PLANS, AND THE REMOVAL OF ANY DEAD, DISEASED OR HAZARD TREES.
15. A 30,000 GALLON FIRE CISTERN IS PROPOSED TO BE INSTALLED NEAR THE INTERSECTION OF EAGLES NEST ROAD AND AERIE DRIVE. THE DEVELOPER HAS THE OPTION TO INSTALL FIRE SPRINKLERS MEETING NFPA STANDARDS ON ALL NEW RESIDENTIAL USE STRUCTURES ON ALL LOTS IN THE SUBDIVISION IN LIEU OF INSTALLING THE FIRE CISTERN.
16. ALL LOTS IN THE SUBDIVISION WILL BE SERVED BY PRIVATE ON-SITE POTABLE WELLS, PRIVATE SUBSURFACE WASTEWATER DISPOSAL SYSTEMS AND UNDERGROUND ELECTRICAL, TELEPHONE AND CABLE SERVICES. ALL RESIDENTIAL USE BUILDINGS SHALL REQUIRE THE INSTALLATION OF ROOF DRIP EDGES FOR STORMWATER MANAGEMENT.
17. ALL DRIVEWAY AND LOT DEVELOPMENT WORK SHALL PROVIDE FOR EROSION & SEDIMENTATION CONTROL BMPS IN ACCORDANCE WITH THE MAINE DEP HANDBOOK OF EROSION AND SEDIMENTATION CONTROL LATEST REVISION.
18. THE PROJECT SITE CONTAINS TWO AREAS THAT HAVE BEEN IDENTIFIED AS HAVING THE POTENTIAL TO BE REGULATED AS SIGNIFICANT VERNAL POOLS BY THE MAINE DEP AND/OR US ARMY CORPS OF ENGINEERS. THESE POTENTIAL VERNAL POOLS WERE NOT EVALUATED TO DETERMINE IF THEY ARE CLASSIFIED AS SIGNIFICANT FOR JURISDICTIONAL PERMITTING PURPOSES. THIS PROJECT PROPOSES A DESIGN THAT MEETS PERMITTING REQUIREMENTS THAT WOULD BE IMPOSED IF THE POOLS WERE FOUND TO BE CONSIDERED SIGNIFICANT VERNAL POOLS AS DEFINED BY THE STATE OF MAINE AND US ARMY CORPS OF ENGINEERS. IF THE VERNAL POOLS ARE DETERMINED TO NOT BE SIGNIFICANT BY THE MAINE DEPARTMENT OF INLAND FISHERIES AND WILDLIFE, THE 100-FOOT AND 250-FOOT SETBACKS SHOWN ON THIS PLAN WILL NO LONGER BE APPLICABLE.
19. AERIE DRIVE IS DESIGNED AS A RURAL PUBLIC EASEMENT STREET DESIGNED FOR PUBLIC WINTER MAINTENANCE UNDER THE TOWN'S PRIVATE ROAD PUBLIC EASEMENT POLICY. ALL DECISIONS TO ACCEPT PUBLIC EASEMENTS ARE SUBJECT TO THE DISCRETIONARY AUTHORITY OF THE TOWN COUNCIL, AND THE MAINTENANCE OF AERIE DRIVE SHALL BE THE RESPONSIBILITY OF THE HOMEOWNERS ASSOCIATION UNTIL SUCH TIME THAT THE TOWN ACCEPTS AN EASEMENT OVER THE ROADWAY AND AGREES TO PROVIDE WINTER MAINTENANCE.
20. PRIOR TO CONSTRUCTION ALL TREE CLEARING LIMITS AND BUFFERS SHALL BE CLEARLY MARKED.
21. INDIVIDUAL WELLS ON EACH LOT MUST BE INSTALLED OUTSIDE OF THE WELL EXCLUSION ZONE. THE WELL EXCLUSION ZONE IS GENERALLY DEFINED AS THE AREA ON EACH LOT THAT IS WITHIN 150 FEET OF THE ROADWAY RIGHT-OF-WAY.

STATE OF MAINE
_____ COUNTY SS. REGISTRY OF DEEDS
RECEIVED _____, 20____
AT ____h ____m ____M AND RECORDED IN
PLAN BOOK _____ PAGE _____
ATTEST: _____
REGISTER

NOT FOR RECORDING

STATE OF MAINE — DUSTIN M. ROMA — REG. No. 12131 — 9-15-2023

DM ROMA CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

REV	DATE	BY	DESCRIPTION
A	9-15-23	JPC	ISSUED FOR REVIEW

SUBDIVISION PLAN

AERIE ESTATES SUBDIVISION

AERIE DRIVE - OFF EAGLES NEST ROAD
GRAY, MAINE

FOR:
SEBAGO REALTY, LLC
PO BOX 1116
WINDHAM, ME 04062

JOB NUMBER:	23050
SCALE:	1" = 100'
DATE:	9-15-2023
	SHEET 3 OF 8
	SB-1

SEE SHEET 5 FOR DETAIL

INSTALL CONDUIT RISER AND EXTEND UNDERGROUND POWER FROM EXISTING UTILITY POLE, COORDINATE WITH CENTRAL MAINE POWER COMPANY

INSTALL STABILIZED CONSTRUCTION ENTRANCE

SEE SHEET 5 FOR DETAIL

POTENTIAL VERNAL POOL

100' FROM POTENTIAL VERNAL POOL AREA

250' FROM POTENTIAL VERNAL POOL AREA

AREA OF STEEP SLOPES OVER 25% GRADE

OPEN SPACE

400 SF OF WETLAND IMPACT

RIP RAP SWALE, SEE DETAIL

RIP RAP SWALE, SEE DETAIL

RIP RAP SWALE, SEE DETAIL

RIP RAP SWALE, SEE DETAIL

LOT 1
AREA = 36,253 SF
NET AREA = 36,253 SF

LOT 2
AREA = 35,107 SF
NET AREA = 35,107 SF

LOT 3
AREA = 35,053 SF
NET AREA = 35,053 SF

LOT 4
AREA = 35,067 SF
NET AREA = 35,067 SF

LOT 5
AREA = 35,086 SF
NET AREA = 35,086 SF

LOT 6
AREA = 35,079 SF
NET AREA = 34,312 SF

LOT 7
AREA = 38,778 SF
NET AREA = 32,202 SF

LOT 8
AREA = 37,849 SF
NET AREA = 30,931 SF

LOT 9
AREA = 39,836 SF
NET AREA = 36,683 SF

LOT 10
AREA = 39,517 SF
NET AREA = 36,338 SF

LOT 11
AREA = 36,045 SF
NET AREA = 36,045 SF

LOT 12
AREA = 35,448 SF
NET AREA = 35,448 SF

LOT 13
AREA = 35,924 SF
NET AREA = 35,924 SF

LOT 14
AREA = 522,337 SF

BOUNDARY OF WELL EXCLUSION ZONE - WELLS MAY NOT BE INSTALLED BETWEEN THIS LINE AND THE ROAD RIGHT-OF-WAY

BOUNDARY OF WELL EXCLUSION ZONE - WELLS MAY NOT BE INSTALLED BETWEEN THIS LINE AND THE ROAD RIGHT-OF-WAY

PROPOSED TREE CLEARING LIMITS AND LIMITS OF SITE DISTURBANCE, TYP.

PROPOSED TREE CLEARING LIMITS AND LIMITS OF SITE DISTURBANCE, TYP.

DRIVEWAY TO LOT 14 BUILDING AREA

CULVERT 3 (CLV-3)
18" SD
INV. IN= 381.00
INV. OUT=377.50
L= 58'; S = 5.99%

SEE SHEET 5 FOR DETAIL

OPEN SPACE

OPEN SPACE

OPEN SPACE

TP-1 TP-2 TP-3 TP-4 TP-5 TP-6 TP-7 TP-9 TP-10 TP-11 TP-12 TP-13 TP-14

0+40 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER PROPERTY LINE	
	TIE LINE	
	SETBACK	
	EASEMENT LINE	
	GRANITE MONUMENT	
	IRON PIN/DRILL HOLE	
	CENTERLINE	
	BUILDING	
	EDGE OF PAVEMENT/CURB	
	EDGE OF GRAVEL	
	EDGE OF CONCRETE	
	SIGN	
	EDGE OF WETLANDS	
	EDGE OF WATER	
	CENTERLINE OF STREAM	
	FLOODPLAIN	
200 201	CONTOUR LINE	200 201
	TREELINE	
TP-1	TEST PIT	
	CATCHBASIN	
	DRAINAGE MANHOLE	
	CULVERT/STORMDRAIN	
	UNDERDRAIN	UD
	HYDRANT	
	WELL	
	UTILITY POLE	
	LIGHT POLE	
OHU	OVERHEAD UTILITIES	OHU
UGU	UNDERGROUND UTILITIES	UGU
	TRANSFORMER PAD	T
G	GAS MAIN	G
	GAS VALVE	
	RIPRAP	
	SILT FENCE	SF

GRAPHIC SCALE
1" = 40'

STATE OF MAINE
DUSTIN M. ROMA
No. 12131
REGISTERED PROFESSIONAL ENGINEER
2023

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

REV	DATE	BY	DESCRIPTION
A	9-15-23	JPC	ISSUED FOR REVIEW

ROADWAY PLAN

AERIE ESTATES SUBDIVISION
AERIE WAY & OFF EAGLES NEST ROAD
GRAY, MAINE
FOR:
SEBAGO REALTY, LLC
PO BOX 1116
WINDHAM, ME 04062

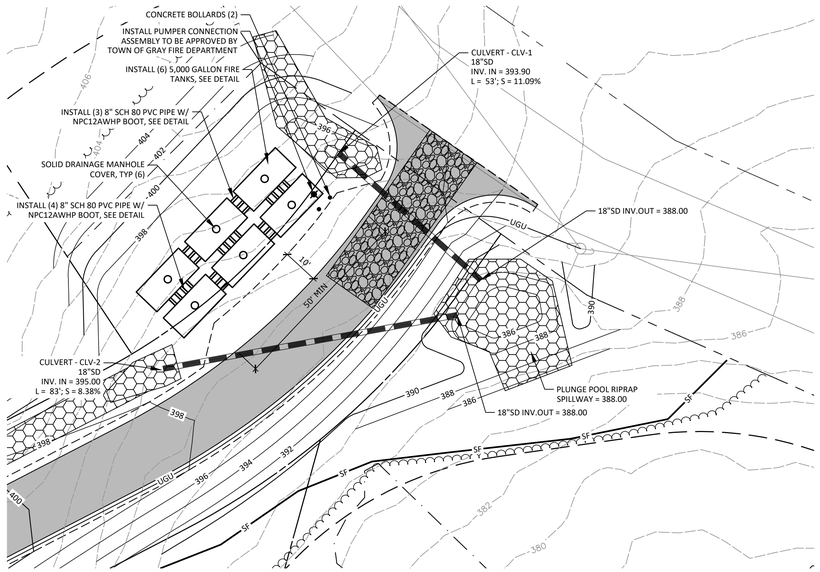
23050
JOB NUMBER:

1" = 40'
SCALE:

9-15-2023
DATE:

SHEET 4 OF 8

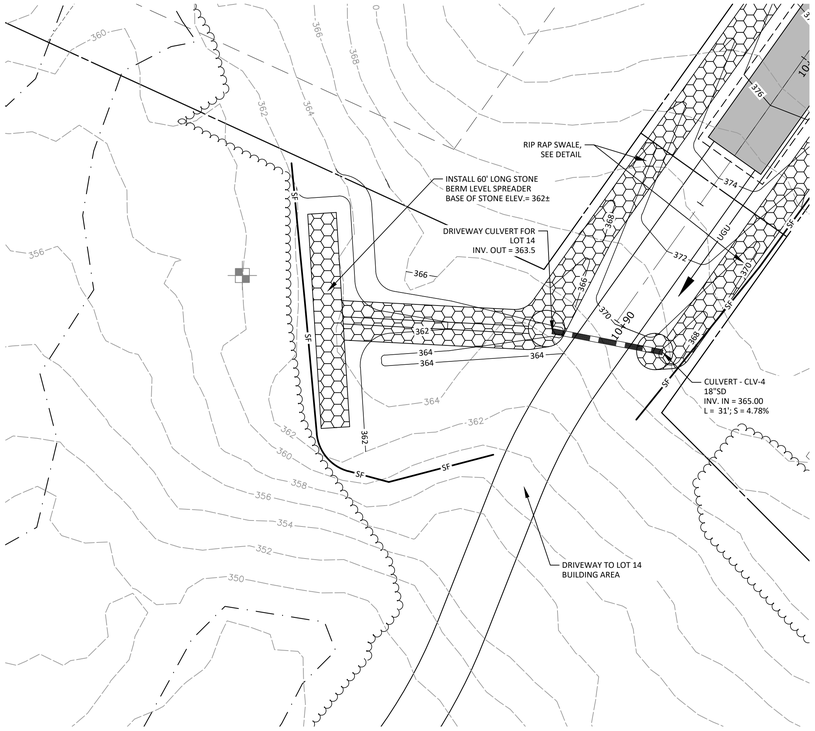
PP-1



FIRE CISTERN & STORMWATER PLUNGE POOL PLAN DETAIL

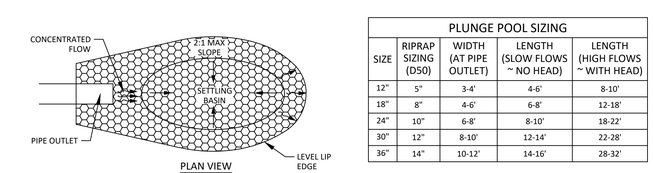
SCALE 1"=20'

GRAPHIC SCALE
1" = 20'



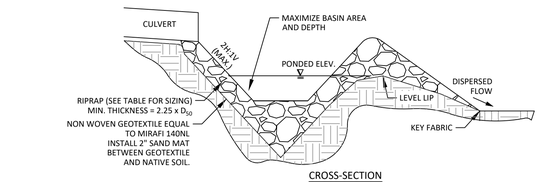
STORMWATER LEVEL SPREADER DETAIL

SCALE 1"=20'



PLAN VIEW

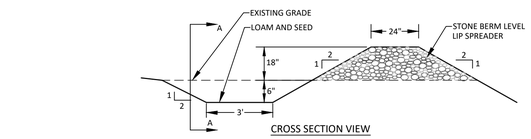
PLUNGE POOL SIZING				
SIZE	RIPRAP SIZING (D50)	WIDTH (AT PIPE OUTLET)	LENGTH (SLOW FLOWS ~ NO HEAD)	LENGTH (HIGH FLOWS ~ WITH HEAD)
12"	5"	3-4'	4-6'	8-10'
18"	8"	4-6'	6-8'	12-18'
24"	10"	6-8'	8-10'	18-22'
30"	12"	8-10'	12-14'	22-28'
36"	14"	10-12'	14-16'	28-32'



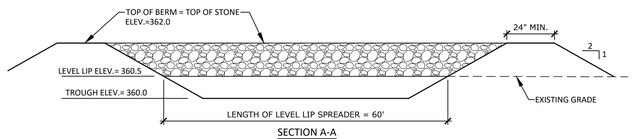
CROSS-SECTION

PLUNGE POOL DETAIL

NOT TO SCALE



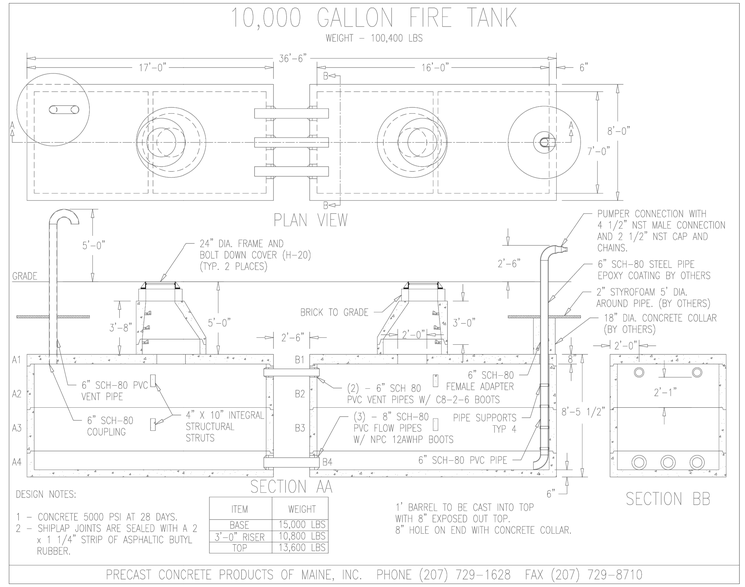
CROSS SECTION VIEW



SECTION A-A

STORMWATER LEVEL LIP SPREADER

NOT TO SCALE



ITEM	WEIGHT
BASE	15,000 LBS
3'-0" RISER	10,800 LBS
TOP	13,600 LBS

FIRE TANK DETAIL

NOTE: THIS DETAIL IS FOR A 10,000 GALLON FIRE TANK. THE PROJECT REQUIRES 30,000 GALLONS OF WATER STORAGE, WHICH WILL INCLUDE A TOTAL OF SIX (6) FIRE TANKS HAVING A STORAGE CAPACITY OF 5,000 GALLONS EACH.

LEGEND

EXISTING	PROPOSED
PROPERTY LINE/R.O.W.	
ABUTTER PROPERTY LINE	
TIE LINE	
SETBACK	
EASEMENT LINE	
GRANITE MONUMENT	
IRON PIN/DRILL HOLE	
CENTERLINE	
BUILDING	
EDGE OF PAVEMENT/CURB	
EDGE OF GRAVEL	
EDGE OF CONCRETE	
SIGN	
EDGE OF WETLANDS	
EDGE OF WATER	
CENTERLINE OF STREAM	
FLOODPLAIN	
200 201 CONTOUR LINE	200 201
TREELINE	
TEST PIT	
CATCHBASIN	
DRAINAGE MANHOLE	
CULVERT/STORMDRAIN	
UNDERDRAIN	UD
HYDRANT	
WELL	
UTILITY POLE	
LIGHT POLE	
OHU OVERHEAD UTILITIES	OHU
UGU UNDERGROUND UTILITIES	UGU
TRANSFORMER PAD	T
G GAS MAIN	G
GAS VALVE	
RIPRAP	
SILT FENCE	SF

DUSTIN M. ROMA
REG. NO. 12131
STATE OF MAINE
9-15-2023

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 593-5055

REV	DATE	BY	DESCRIPTION
A	9-15-23	JPC	ISSUED FOR REVIEW

CISTERN & STORMWATER DETAILS

AERIE ESTATES SUBDIVISION
AERIE DRIVE OFF EAGLES NEST ROAD
GRAY, MAINE
FOR:
SEBAGO REALTY, LLC
PO BOX 1116
WINDHAM, ME 04062

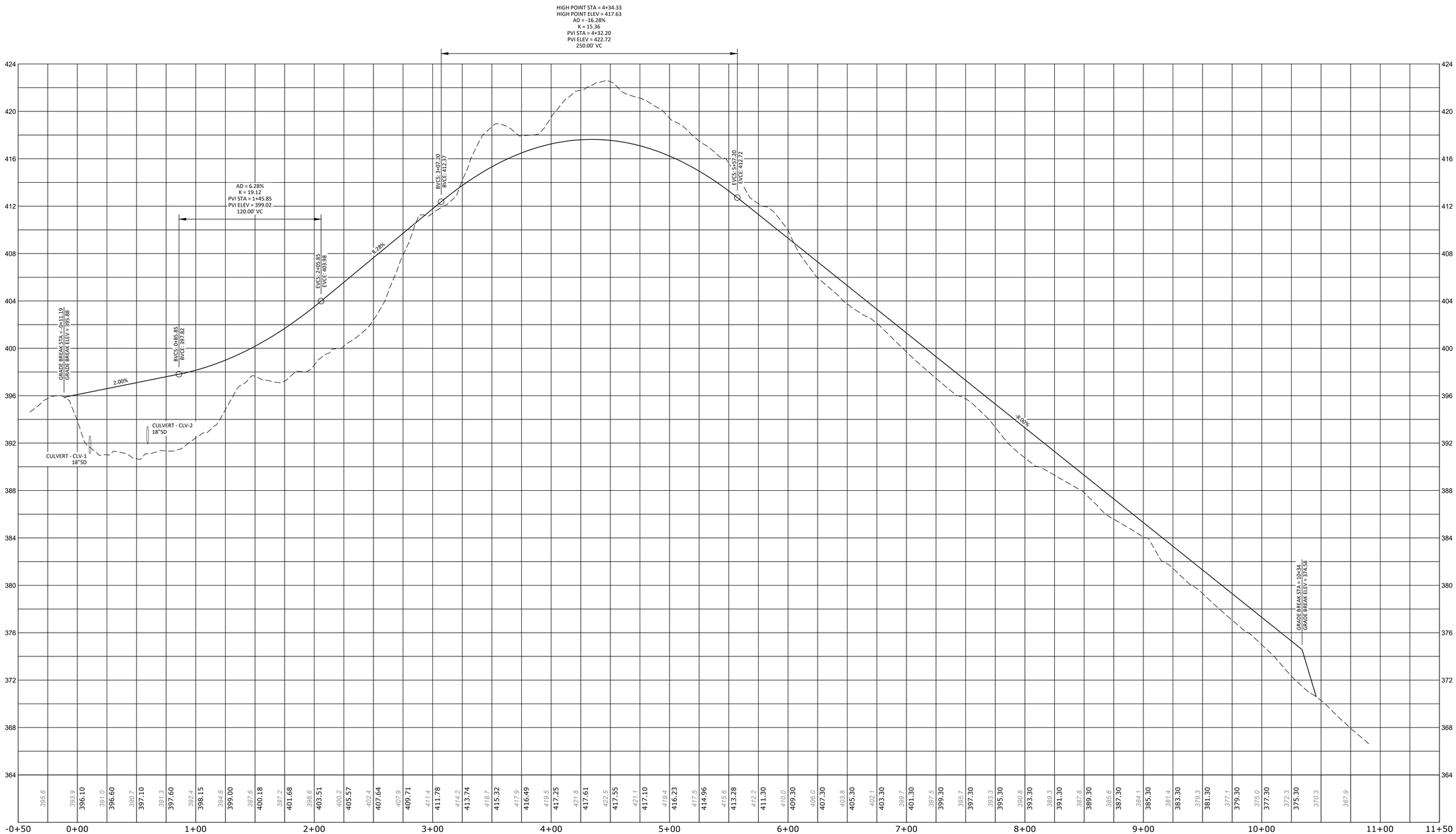
23050
JOB NUMBER:

AS SHOWN
SCALE:

9-15-2023
DATE:

SHEET 5 OF 8

PP-2



ROADWAY PROFILE - AERIE DRIVE

SCALE 1"=40'H, 1"=4'V

GRAPHIC SCALE
1" = 40'

DM ROMA
CONSULTING ENGINEERS
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WINDHAM, ME 04062
(207) 593-5055

REV	DATE	BY	DESCRIPTION
A	9-15-23	JPC	ISSUED FOR REVIEW

ROADWAY PROFILE

AERIE ESTATES SUBDIVISION

AERIE DRIVE, OFF EAGLES NEST ROAD
GRAY, MAINE

FOR:
SEBAGO REALTY, LLC
PO BOX 1116
WINDHAM, ME 04062

23050
JOB NUMBER:

AS SHOWN
SCALE:

9-15-2023
DATE:

SHEET 6 OF 8

PP-3

EROSION AND SEDIMENTATION CONTROL NOTES:

EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS TO OCCUR DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY.

IN ORDER TO EFFECTIVELY PREVENT AND CONTROL EROSION RELATED TO SOIL DISTURBANCE, THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPS) SHALL BE EMPLOYED:

1. POLLUTION PREVENTION

MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION. MINIMIZE THE DISTURBANCE OF STEEP SLOPES. CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOW RATES AND VOLUME, TO MINIMIZE EROSION AT OUTLETS. THE DISCHARGE MAY NOT RESULT IN EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, STREAM CHANNELS OR STREAM BANKS, UPLAND, OR COASTAL OR FRESHWATER WETLANDS OFF THE PROJECT SITE.

WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.

2. TEMPORARY SOIL STABILIZATION BMPS

TEMPORARY MULCHING SHALL BE APPLIED IMMEDIATELY TO ANY AREAS THAT HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED. ANY DISTURBED SOIL WITHIN 75' OF A STREAM, WATER BODY OR WETLAND MUST RECEIVE TEMPORARY MULCH WITHIN 48 HOURS FOLLOWING DISTURBANCE AND BEFORE ANY STORM EVENT. ALL OTHER AREAS SHALL RECEIVE TEMPORARY MULCH WITHIN 7 DAYS OF DISTURBANCE. AREAS WHICH CANNOT BE SEEDED DURING THE GROWING SEASON SHALL BE MULCHED FOR OVER-WINTER PROTECTION. THE FOLLOWING ARE ACCEPTABLE TEMPORARY MULCHING METHODS:

HAY OR STRAW MULCHES NEED TO BE AIR-DRIED, FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS. APPLICATION RATE MUST BE 2 BALES (70-90 POUNDS) PER 1000 SQ FT OR 1.5 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 75-90% OF THE GROUND SURFACE. HAY OR STRAW CAN BE DRIVEN INTO THE GROUND WITH TRACKED EQUIPMENT IF SLOPES ARE LESS THAN 3%, OR CAN BE ANCHORED WITH JUTE, WOOD FIBER OR PLASTIC NETTING ON STEEPER SLOPES.

EROSION CONTROL MIX MUST CONSIST PRIMARILY OF ORGANIC MATERIAL AND WILL INCLUDE ANY OF THE FOLLOWING: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK OR OTHER ACCEPTABLE PRODUCTS BASED ON A SIMILAR RAW SOURCE. WOOD OR BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE. EROSION CONTROL MIX CAN BE USED AS A STAND-ALONE REINFORCEMENT ON SLOPES OF 2 HORIZONTAL TO 1 VERTICAL OR LESS AND DRAINING IN SHEET FLOW. IT CAN BE PLACED WITH A HYDRAULIC BUCKET, WITH A PNEUMATIC BLOWER OR BY HAND, AND MUST PROVIDE 100% SOIL COVERAGE.

EROSION CONTROL MIX SHALL MEET THE FOLLOWING SPECIFICATIONS:
- -ORGANIC MATTER CONTENT SHALL BE BETWEEN 50-100%, DRY WEIGHT BASIS.
- -MINERAL PORTION OF THE MIX SHOULD BE NATURALLY INCLUDED IN THE MIX WITH NO LARGER ROCKS (>4")
- -ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED
- -LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX
- -IN STUMP GRINDING, THE MINERAL SOIL ORIGINATES FROM THE ROOT BALL AND SHOULD NOT BE REMOVED BEFORE GRINDING
- -THE MIX SHOULD BE FREE OF REFUSE, MATERIAL TOXIC TO PLANT GROWTH OR UNSUITABLE MATERIAL (BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS

WHEN USED AS MULCH, THE THICKNESS OF THE EROSION CONTROL MIX IS BASED UPON THE FOLLOWING:

LENGTH OF SLOPE	3:1 SLOPE OR LESS	BETWEEN 2:1 AND 3:1 SLOPE
LESS THAN 20 FT	2.0 IN.	4.0 IN.
BETWEEN 20 - 60 FT	3.0 IN.	5.0 IN.
BETWEEN 60 - 100 FT	4.0 IN.	6.0 IN.

CHEMICAL MULCHES AND SOIL BINDERS MAY BE USED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL CONSULT WITH THE MANUFACTURER TO DETERMINE ADEQUATE APPLICATION RATES AND METHODS.

TEMPORARY MULCH SHALL BE INSPECTED FOLLOWING ANY SIGNIFICANT RAINFALL EVENT (GREATER THAN 0.5 INCH RAINFALL, TYP.). IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. EROSION CONTROL MATS AND MULCH ANCHORING MUST BE INSPECTED AFTER RAINFALL EVENTS FOR DISLOCATION OR FAILURE, AND REPAIRED IMMEDIATELY. INSPECTIONS SHALL TAKE PLACE UNTIL 95% OF THE SOIL SURFACE IS COVERED WITH PERMANENT VEGETATION. WHERE MULCH IS USED WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE, AND REPAIR AS NEEDED.

TEMPORARY VEGETATION SHALL BE ESTABLISHED ON SOILS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 30 DAYS. IF TEMPORARY VEGETATION CANNOT BE ESTABLISHED PRIOR TO OCTOBER 15, TEMPORARY MULCH SHALL BE APPLIED THROUGH THE WINTER AND TEMPORARY VEGETATION SHALL BE PLANTED AT THE BEGINNING OF THE GROWING SEASON THE FOLLOWING YEAR. TO PREPARE THE SEEDBED, THE CONTRACTOR SHALL APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OF 10-10-10 (N-P205-K20) OR EQUIVALENT AND LIMESTONE AT A RATE OF 3 TONS PER ACRE, IF NECESSARY. LOOSEN SOIL TO A DEPTH OF 2 INCHES IN AREAS THAT HAVE BEEN COMPACTED BY CONSTRUCTION ACTIVITIES. GRASS SEED SHALL BE SELECTED BASED UPON THE TIME OF YEAR THE PLANTING WILL TAKE PLACE AS SUMMARIZED IN THE FOLLOWING TABLE:

SEED	LB. PER ACRE	RECOMMENDED SEEDING DATES
WINTER RYE	112	8/15 - 10/1
OATS	80	4/1 - 7/1 8/15 - 9/15
ANNUAL RYEGRASS	40	4/1 - 7/1

TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED TO MAINTAIN AT LEAST 95% VEGETATIVE COVER OF SOIL SURFACE. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES SHALL BE USED IN THE INTERIM SUCH AS TEMPORARY MULCH, FILTER BARRIERS, ETC.

3. SEDIMENT BARRIER BMPS

PRIOR TO CONSTRUCTION TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED AT THE DOWNGRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA . SEDIMENT BARRIERS INCLUDE ANY OF THE FOLLOWING:

FILTER BARRIER FENCE, ALSO CALLED SILT FENCE, SHALL BE INSTALLED WHERE SHOWN ON THE PLANS AND IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. THE FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL PROVIDE A MINIMUM OF 6 MONTHS USABLE CONSTRUCTION LIFE INCLUDING PROTECTION AGAINST ULTRA-VIOLET LIGHT. THE HEIGHT OF THE FENCE SHALL NOT EXCEED 36 INCHES INSTALLED AND POST SPACING SHALL NOT EXCEED 6 FEET. JOINTS IN THE FENCE SHALL BE AVOIDED TO THE EXTENT POSSIBLE, AND IF NECESSARY SHALL BE SPLICED TOGETHER AT A SUPPORT POST WITH A MINIMUM 6 INCH OVERLAP. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 6 INCHES WIDE AND 6 INCHES DEEP, AND THE BOTTOM 6-8 INCHES OF FABRIC SHALL BE "TOED-IN" TO THE TRENCH AND COMPACTED. THE TRENCH SHOULD BE UPHILL OF THE FABRIC PRIOR TO BURIAL.

EROSION CONTROL MIX BERMS ARE LINEAR BARRIERS COMPOSED OF EROSION CONTROL MIX AS SPECIFIED ABOVE. THE BERM MUST BE A MINIMUM OF 12 INCHES TALL AND 24 INCHES WIDE AT THE BASE IF UPHILL SLOPES ARE LESS THAN 5%. STEEPER SLOPES OR SLOPES GREATER THAN 20 FEET LONG MAY REQUIRE A LARGER WIDTH BERM. EROSION CONTROL MIX BERMS SHALL BE PROHIBITED AT THE BASE OF A LONG OR STEEP SLOPE (8% OR GREATER) WITHOUT THE ADDITIONAL SUPPORT OF A FILTER FENCE INSTALLED ON THE DOWNHILL SIDE OF THE BERM.

SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER SHOULD BE PREVENTED FROM RUNNING ONTO THE STOCKPILE. SEDIMENT BARRIERS SHALL BE INSPECTED AFTER ANY SIGNIFICANT RAINFALL EVENT (GREATER THAN 0.5 INCH RAINFALL) AND REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE BARRIERS. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR EDGES OF THE BARRIER, OR IF LARGE VOLUMES OF WATER ARE IMPOUNDED BEHIND THE BARRIER, IT MAY BE NECESSARY TO REPLACE THE BARRIER WITH A TEMPORARY STONE CHECK DAM. SEDIMENT SHALL BE REMOVED ONCE IT REACHES HALF THE BARRIER HEIGHT. AFTER THE BARRIER IS REMOVED, ANY REMAINING SILT SHALL EITHER BE REMOVED OR GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

TEMPORARY EROSION CONTROL MEASURES ARE REMOVED ONCE THE SITE IS PERMANENTLY STABILIZED AND CONSTRUCTION ACTIVITY HAS BEEN COMPLETED.

4. STORM DRAIN INLET PROTECTION

STORM DRAIN INLETS THAT ARE MADE OPERATIONAL BEFORE THEIR DRAINAGE AREA IS STABILIZED SHALL BE PROTECTED WITH A FILTER UNTIL THE DRAINAGE AREA IS EITHER PAVED OR STABILIZED WITH 95% VEGETATIVE GROWTH. THE FOLLOWING ARE ACCEPTABLE BMPS ASSOCIATED WITH STORM DRAIN INLET PROTECTION:

MANUFACTURED SEDIMENT FILTERS ARE THE PREFERRED METHOD FOR PROTECTING CATCH BASIN INLETS IN PAVED OR GRAVEL ROADWAYS. THE FILTERS TYPICALLY CONSIST OF A FABRIC OR OTHER PERVIOUS MATERIAL THAT IS PLACED ABOVE OR BELOW THE GRATE THAT TRAPS SEDIMENT ON THE SURFACE AND ALLOWS WATER TO FLOW THROUGH THE GRATE. CONSIDERATIONS SUCH AS WEATHER CONDITIONS, SLOPES, TRIBUTARY WATERSHED AREA AND EXPECTED SEDIMENT ACCUMULATION SHOULD BE FACTORED INTO MAKING A DECISION ON ANY PARTICULAR PRODUCT, AND THE MANUFACTURER'S RECOMMENDATIONS ON INSTALLATION AND MAINTENANCE SHALL BE STRICTLY ADHERED TO.

5. STABILIZED CONSTRUCTION ENTRANCE/EXIT

TO REDUCE THE TRACKING OF SEDIMENT ONTO ROADWAYS, A STABILIZED CONSTRUCTION EXIT SHALL BE INSTALLED AT ALL POINTS OF EGRESS WHERE VEHICLES MAY TRAVEL FROM THE PROJECT SITE TO A PUBLIC ROAD OR OTHER PAVED AREA. THE STONE PAD SHALL CONSIST OF A MINIMUM 6-INCH DEPTH OF 2-3 INCH CRUSHED STONE, AND SHALL BE PLACED ON A GEOTEXTILE FABRIC. THE PAD SHALL EXTEND AT LEAST 50 FEET INTO THE PROJECT SITE AND BE A MINIMUM OF 10 FEET WIDE. THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, AND THE CONTRACTOR SHALL SWEEP PAVEMENT AT EXITS THAT HAVE EXPERIENCED ANY MUD-TRACKING PRIOR TO THE NEXT STORM EVENT. MAINTAIN THE PAD UNTIL ALL DISTURBED AREAS ARE STABILIZED.

6. DUST CONTROL

THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST ON THE PROJECT SITE AND ON ADJACENT ROADWAYS. EXPOSED SOIL SURFACES SHALL BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST. GRAVEL SURFACES SHALL EITHER BE TREATED WITH AN APPLICATION OF CALCIUM CHLORIDE OR COVERED WITH CRUSHED STONE IF DUST CONTROL BECOMES DIFFICULT WITH NORMAL WATER APPLICATIONS.

7. LAND GRADING AND SLOPE PREPARATION

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 NEXT PHASE. ANY EXPOSED AREA THAT WILL NOT BE FINISH GRADED WITHIN 7 DAYS SHALL BE TREATED WITH MULCH OR PLANTED WITH TEMPORARY VEGETATION. PROVISIONS SHALL BE MADE TO SAFELY CONVEY SURFACE RUNOFF TO STORM DRAINS, PROTECTED OUTLETS OR TO STABLE WATER COURSES TO ENSURE THAT SURFACE RUNOFF WILL NOT DAMAGE SLOPES OR OTHER GRADED AREAS. CUT AND FILL SLOPES THAT ARE TO BE STABILIZED WITH GRASS SHALL NOT BE STEEPER THAN 2:1. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIALS. AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL. 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. ALL FILLS SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS. FILL MATERIAL SHALL BE FREE OF STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL FILLS. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED APPROPRIATELY. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

8. TOPSOIL

IF POSSIBLE, TOPSOIL SHALL BE STOCKPILED ON THE PROJECT SITE AND REUSED. HIGH QUALITY TOPSOIL SHALL BE FRIABLE AND LOAMY (LOAM, SANDY LOAM, SILT LOAM, SANDY CLAY LOAM, CLAY LOAM), AND SHALL BE FREE OF DEBRIS, TRASH, STUMPS, ROCKS, ROOTS AND NOXIOUS WEEDS. AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, AND IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENED BY SCARIFYING TO A DEPTH OF AT LEAST 2 INCHES TO ENSURE BONDING WITH SUBSOIL. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 4 INCHES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS. IT IS NECESSARY TO COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL, BUT UNDUE COMPACTION IS TO BE AVOIDED.

9. PERMANENT SOIL STABILIZATION

IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIPRAP, OR ROAD SUB-BASE. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS; AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS; PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS; AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.

SEEDED AREAS: TO PREPARE THE SEEDBED, APPLY 10-20-20 FERTILIZER AT A RATE OF 800 POUNDS PER ACRE AND GROUND LIMESTONE AT A RATE OF 3 TONS PER ACRE. WORK THE FERTILIZER AND LIMESTONE INTO THE TOPSOIL TO A DEPTH OF 4 INCHES AND REMOVE ANY STONES, ROOTS OR OTHER VISIBLE DEBRIS. SELECT A SEED MIXTURE THAT IS APPROPRIATE FOR THE SOIL TYPE AND MOISTURE CONTENT AS FOUND AT THE SITE, AND FOR THE AMOUNT OF SUN EXPOSURE AND FOR LEVEL OF USE. REFER TO THE USDA SOIL CONSERVATION SERVICE OR THE LOCAL SOIL AND WATER CONSERVATION DISTRICT FOR APPROPRIATE SEED MIXTURES. APPLY SEED UNIFORMLY IN ACCORDANCE WITH SUPPLIER RECOMMENDATIONS AND IMMEDIATELY COVER WITH MULCH AS DESCRIBED IN THE TEMPORARY MULCHING SECTION OF THIS PLAN.

HYDROSEEDING SHALL BE DONE IN ACCORDANCE WITH SUPPLIERS RECOMMENDATIONS. FOR SEEDED AREAS TO BE PERMANENTLY STABILIZED, 90% OF THE DISTURBED SOIL SHALL BE COVERED WITH MATURE HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

SOD STRIPS SHALL BE LAID AT RIGHT ANGLES TO DIRECTION OF SLOPE OR FLOW OF WATER STARTING AT LOWEST ELEVATION. JOINTS SHALL BE STAGGERED, AND ALL STRIPS SHALL BE ROLLED OR TAMPED INTO PLACE. ON SLOPES, SOD SHALL BE ANCHORED WITH STAPLES, WIRE OR PINS. IRRIGATE SODDED AREA IMMEDIATELY AFTER INSTALLATION. FOR SODDED AREAS TO BE PERMANENTLY STABILIZED, THE ROOTS OF THE SOD MUST BE COMPLETELY BOUND INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.

PERMANENT MULCH IS A LONG TERM COVER THAT PROVIDES A GOOD BUFFER AROUND DISTURBED AREAS. THE EROSION CONTROL MIX SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND MAY INCLUDE SHREDDED BARK, STUMP GRINDINGS OR COMPOSTED BARK. WOOD CHIPS, GROUND CONSTRUCTION DEBRIS, REPROCESSED WOOD PRODUCTS OR BARK CHIPS ARE NOT ACCEPTABLE. THE EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4 INCHES IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS AND MATERIAL TOXIC TO PLANT GROWTH.

RIPRAP STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNEVEN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. THE DEPTH OF STONE SHALL BE A MINIMUM OF 2.2 TIMES THE MAXIMUM STONE DIAMETER. A GRAVEL OR GEOTEXTILE FILTER BLANKET SHALL BE PLACED BETWEEN THE RIPRAP AND UNDERLYING SOIL SURFACE. GRAVEL FILTER BLANKETS SHALL MEET MDOT TYPE-C UNDERDRAIN MATERIAL SPECIFICATIONS AND BE AT LEAST 6 INCHES THICK. GEOTEXTILE FILTER BLANKETS SHALL BE SPECIFIED BASED ON SITE CONDITIONS. RIPRAP SLOPES SHALL BE TOED INTO THE BASE OF THE EMBANKMENT BY EXCAVATING A TRENCH AT THE BOTTOM OF THE SLOPE AND INSTALLING A STABLE BASE OF RIPRAP TO GRADE.

DITCHES, CHANNELS AND SWALES ARE CONSIDERED PERMANENTLY STABILIZED WHEN THE CHANNEL HAS 90% COVER OF HEALTHY VEGETATION WITH A WELL GRADED RIPRAP LINING, EROSION CONTROL BLANKET, OR WITH ANOTHER NON-EROSIVE LINING SUCH AS CONCRETE OR ASPHALT PAVEMENT. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE CHANNEL LINING, UNDERCUTTING OF THE BANKS, OR DOWNCUTTING OF THE CHANNEL.

10. STORMWATER CHANNELS

EACH CHANNEL SHOULD BE CONSTRUCTED IN SECTIONS SO THAT THE SECTION'S GRADING, SHAPING, AND INSTALLATION OF THE PERMANENT LINING CAN BE COMPLETED THE SAME DAY. IF A CHANNEL'S FINAL GRADING OR LINING INSTALLATION MUST BE DELAYED, THEN DIVERSION BERMS MUST BE USED TO DIVERT STORMWATER AWAY FROM THE CHANNEL. PROPERLY-SPACED CHECK DAMS MUST BE INSTALLED IN THE CHANNEL TO SLOW THE WATER VELOCITY, AND A TEMPORARY LINING INSTALLED ALONG THE CHANNEL TO PREVENT SCOURING.

WINTER EROSION AND SEDIMENTATION CONTROL NOTES:

THE WINTER CONSTRUCTION PERIOD TYPICALLY BEGINS IN EARLY NOVEMBER AND ENDS IN MID APRIL. IF A CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE OR RIPRAP BY NOVEMBER 15 THEN THE SITE NEEDS TO BE PROTECTED WITH OVER-WINTER STABILIZATION. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS TO OCCUR DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. AN AREA SHALL BE CONSIDERED DENUDED UNTIL THE SUBBASE GRAVEL IS INSTALLED IN THE ROADWAY AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOAMED, SEEDED AND MULCHED. A COVER OF EROSION CONTROL MIX IS THE PREFERRED TEMPORARY MULCH DURING WINTER CONDITIONS.

1. NATURAL RESOURCE PROTECTION

ANY AREAS WITHIN 75 FEET FROM ANY REGULATED NATURAL RESOURCES SHALL BE MULCHED BY DECEMBER 1 AND ANCHORED WITH PLASTIC NETTING OR PROTECTED WITH AN EROSION CONTROL COVER. DURING WINTER CONSTRUCTION, A DOUBLE ROW OF SEDIMENT BARRIERS (FOR EXAMPLE, SILT FENCE BACKED WITH HAY BALES OR EROSION CONTROL MIX) WILL BE PLACED BETWEEN ANY REGULATED NATURAL RESOURCE AND THE DISTURBED AREA. PROJECTS CROSSING THE REGULATED NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE. EXISTING PROJECTS NOT STABILIZED BY DECEMBER 1 SHALL BE PROTECTED WITH THE SECOND LINE OF SEDIMENT BARRIER TO ENSURE FUNCTIONALITY DURING THE SPRING THAW AND RAINS.

2. SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES OR SILT FENCES.

3. MULCHING

ALL AREAS SHALL BE CONSIDERED TO BE DENUDED UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE (TWICE THE NORMAL ACCEPTED RATE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCHES THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. SNOW MUST BE REMOVED DOWN TO A ONE-INCH DEPTH PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA WILL BE PROPERTY 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 OR ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WITH THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 1ST, MULCH AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

4. SOIL STOCKPILING

STOCKPILES OF SOIL OR SUBSOIL WILL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A FOUR-INCH LAYER OF EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STACKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL (0.5 INCH RAINFALL OR GREATER) OR SNOWFALL. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER SHOULD BE PREVENTED FROM RUNNING ONTO THE STOCKPILE. ANY SOIL STOCKPILE WILL NOT BE PLACED WITHIN 100 FEET FROM ANY REGULATED NATURAL RESOURCE.

5. SEEDING

BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1 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 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF DORMANT SEEDING IS USED, ALL DISTURBED AREAS SHALL RECEIVE 4 INCHES OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS PER 1,000 S.F. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 90%) IN THE SPRING SHALL BE REVEGETATED.

6. OVER-WINTER STABILIZATION OF DITCHES AND CHANNELS

ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED BY NOVEMBER 1. ALL GRASS-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY SEPTEMBER 1. IF A GRASS-LINED DITCH OR CHANNEL IS STABILIZED BY SEPTEMBER 1, THEN EITHER A SOD LINING SHALL BE INSTALLED PRIOR TO OCTOBER 1 OR THE DITCH MUST BE LINED WITH STONE RIPRAP BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE PRIOR TO NOVEMBER 1.

7. OVER-WINTER STABILIZATION OF DISTURBED SLOPES

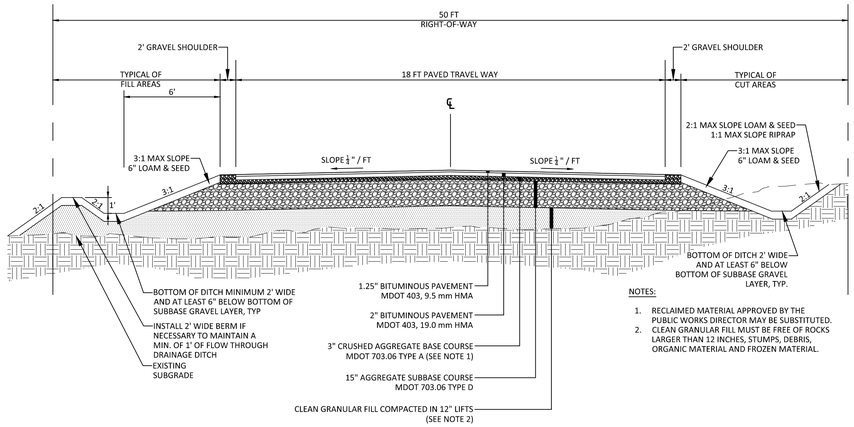
ALL STONE-COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15. ALL SLOPES TO BE VEGETATED MUST BE SEEDED AND MULCHED BY SEPTEMBER 1. ALL AREAS HAVING A GRADE STEEPER THAN 8% SHALL BE CONSIDERED A SLOPE. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1, THEN THE SLOPE SHALL EITHER BE STABILIZED WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS BY OCTOBER 1, SOD BY OCTOBER 1, EROSION CONTROL MIX BY NOVEMBER 1 OR STONE RIPRAP BY NOVEMBER 15. SEE APPLICABLE SECTIONS UNDER EROSION AND SEDIMENTATION CONTROL NOTES FOR PROPER INSTALLATION METHODS.

8. OVER-WINTER STABILIZATION OF DISTURBED SOILS

BY SEPTEMBER 15, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% MUST BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN THE AREA SHALL EITHER BE STABILIZED WITH TEMPORARY VEGETATION BY OCTOBER 1, SOD BY OCTOBER 1, OR MULCH BY NOVEMBER 15. SEE APPLICABLE SECTIONS UNDER EROSION AND SEDIMENTATION CONTROL NOTES FOR PROPER INSTALLATION METHODS.

9. MAINTENANCE

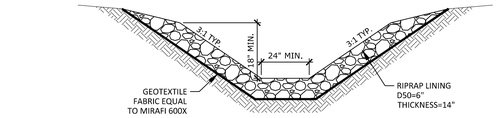
MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AFTER EACH RAINFALL, SNOW STORM, PERIOD OF THAWING AND RUNOFF AND AT LAST ONCE A WEEK, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION. FOLLOWING THE TEMPORARY AND/OR FINAL SEEDING AND MULCHING, TH



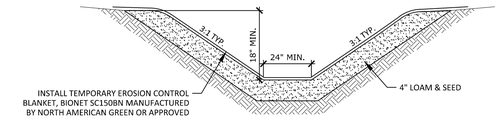
NOTES:

1. RECLAIMED MATERIAL APPROVED BY THE PUBLIC WORKS DIRECTOR MAY BE SUBSTITUTED.
2. CLEAN GRANULAR FILL MUST BE FREE OF ROCKS LARGER THAN 12 INCHES, STUMPS, DEBRIS, ORGANIC MATERIAL AND FROZEN MATERIAL.

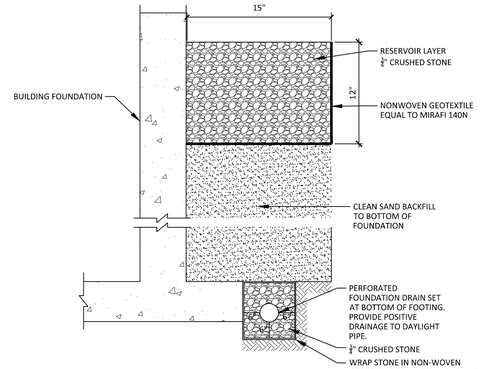
TYPICAL ROADWAY SECTION
MODIFIED MINOR RURAL STREET STANDARD



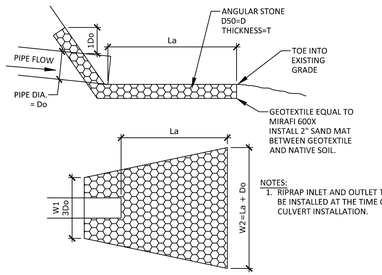
RIPRAP SWALE
NOT TO SCALE



DRAINAGE SWALE
NOT TO SCALE



ROOF DRIP EDGE
NOT TO SCALE

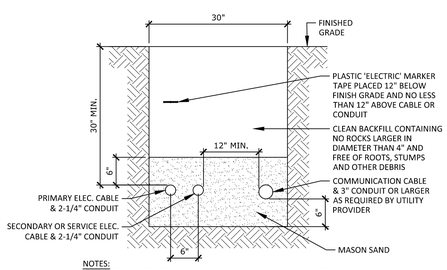


NOTES:

1. RIPRAP INLET AND OUTLET TO BE INSTALLED AT THE TIME OF CULVERT INSTALLATION.

RIPRAP APRON DATA					
PIPE DIA.	W1	W2	La	D	T
12" & SMALLER	3'	7'	6'	6"	14"
15"	4'	9'	8'	6"	14"
18"	5'	10	11'	6"	14"

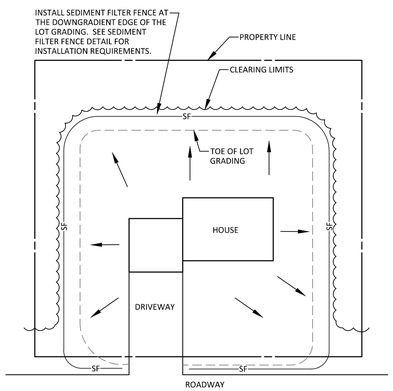
RIPRAP APRON AT PIPE
NOT TO SCALE



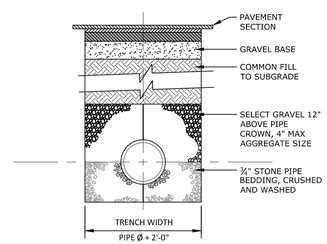
NOTES:

1. CONDUIT SIZE AND MATERIAL AS SPECIFIED BY THE UTILITY PROVIDER.
2. INSTALLATION SHOULD NOT ALLOW THE INTER-TWINING OF CABLES.
3. BEDDING AND BACKFILL SHALL BE FREE OF ROOTS, STUMPS AND OTHER DEBRIS.
4. COMMUNICATION CABLE AND POWER CABLE SHALL HAVE NO LESS THAN 12 INCHES OF RADIAL SEPARATION.

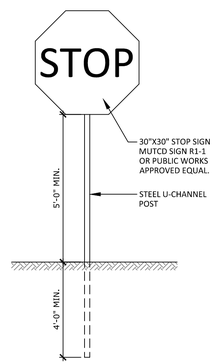
UTILITY TRENCH DETAIL
NOT TO SCALE



TYPICAL HOUSE LOT
EROSION CONTROL DETAIL
NOT TO SCALE



TYPICAL TRENCH SECTION
NOT TO SCALE



STOP SIGN INSTALLATION
NOT TO SCALE

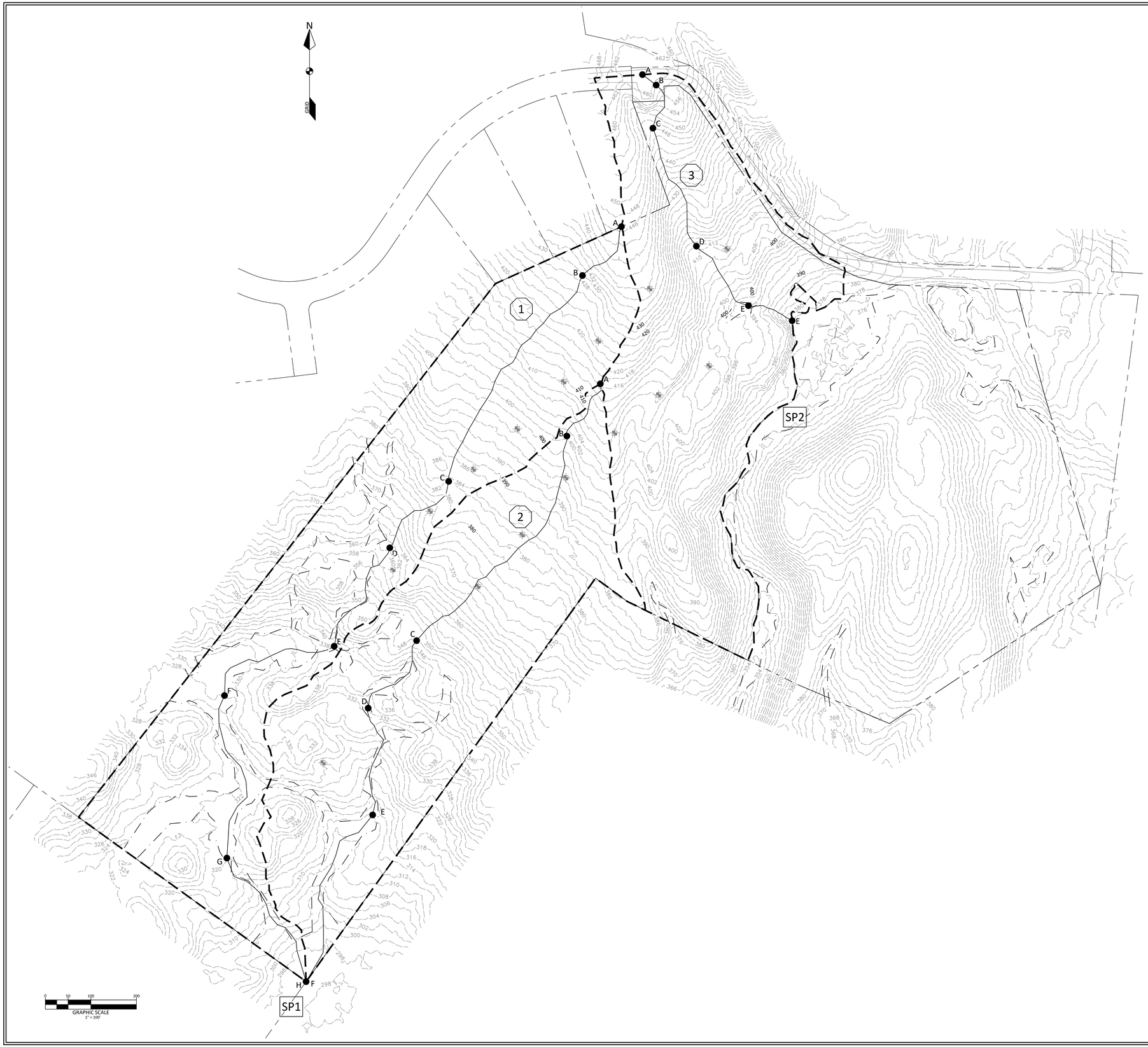
DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

REV	DATE	BY	DESCRIPTION
A	9-15-23	JPC	ISSUED FOR REVIEW

DETAILS

AERIE ESTATES SUBDIVISION
AERIE DRIVE OFF EAGLES NEST ROAD
GRAY, MAINE
FOR:
SEBAGO REALTY, LLC
PO BOX 1116
WINDHAM, ME 04062

23050	JOB NUMBER:
AS NOTED	SCALE:
9-15-2023	DATE:
SHEET 8 OF 8	
D-2	



WATERSHED MAP LEGEND

- 1 — WATERSHED NO.
- SP1 — REACH/STUDY POINT
- P1 — POND
- WATERSHED BOUNDARY
- A → B — TIME OF CONCENTRATION
- REACH PATH
- SOIL BOUNDARY

STATE OF MAINE — DUSTIN M. ROMA — No. 12131 — REGISTERED PROFESSIONAL ENGINEER — 2023

[redacted]

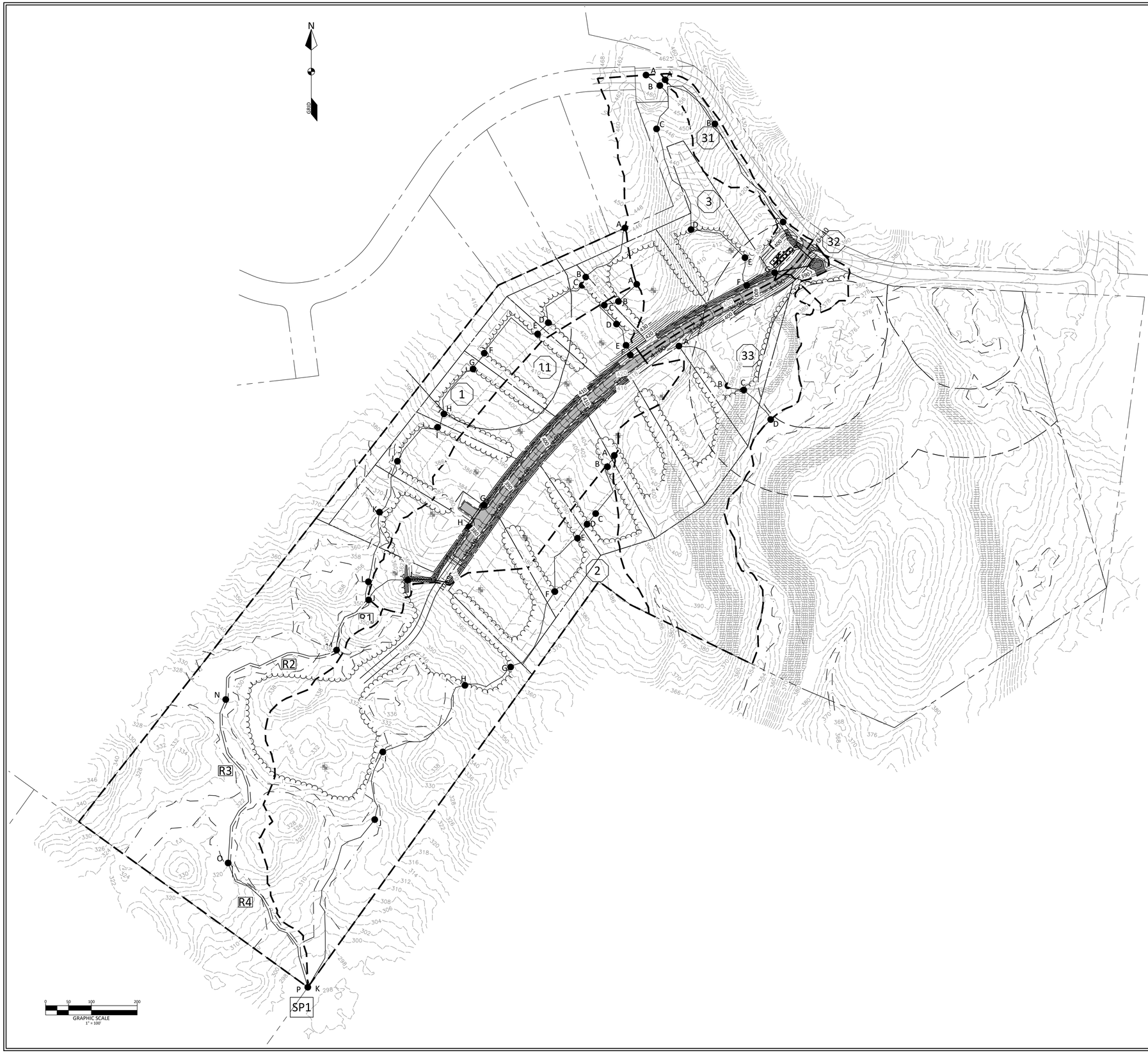
DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

REV.	DATE	BY	DESCRIPTION
A	9-15-23	JPC	ISSUED FOR REVIEW

WATERSHED MAP: EXISTING CONDITIONS

AERIE ESTATES SUBDIVISION
AERIE DRIVE OFF EAGLES NEST ROAD
GRAY, MAINE
FOR:
SEBAGO REALTY, LLC
PO BOX 1116
WINDHAM, ME 04062

23050	JOB NUMBER:
1" = 100'	SCALE:
9-15-2023	DATE:
SHEET 1 OF 3	
WM-1	



WATERSHED MAP LEGEND

- 1 — WATERSHED NO.
- SP1 — REACH/STUDY POINT
- P1 — POND
- WATERSHED BOUNDARY
- A — B — TIME OF CONCENTRATION
- REACH PATH
- SOIL BOUNDARY

STATE OF MAINE
DUSTIN M. ROMA
No. 12131
REGISTERED PROFESSIONAL ENGINEER
2023

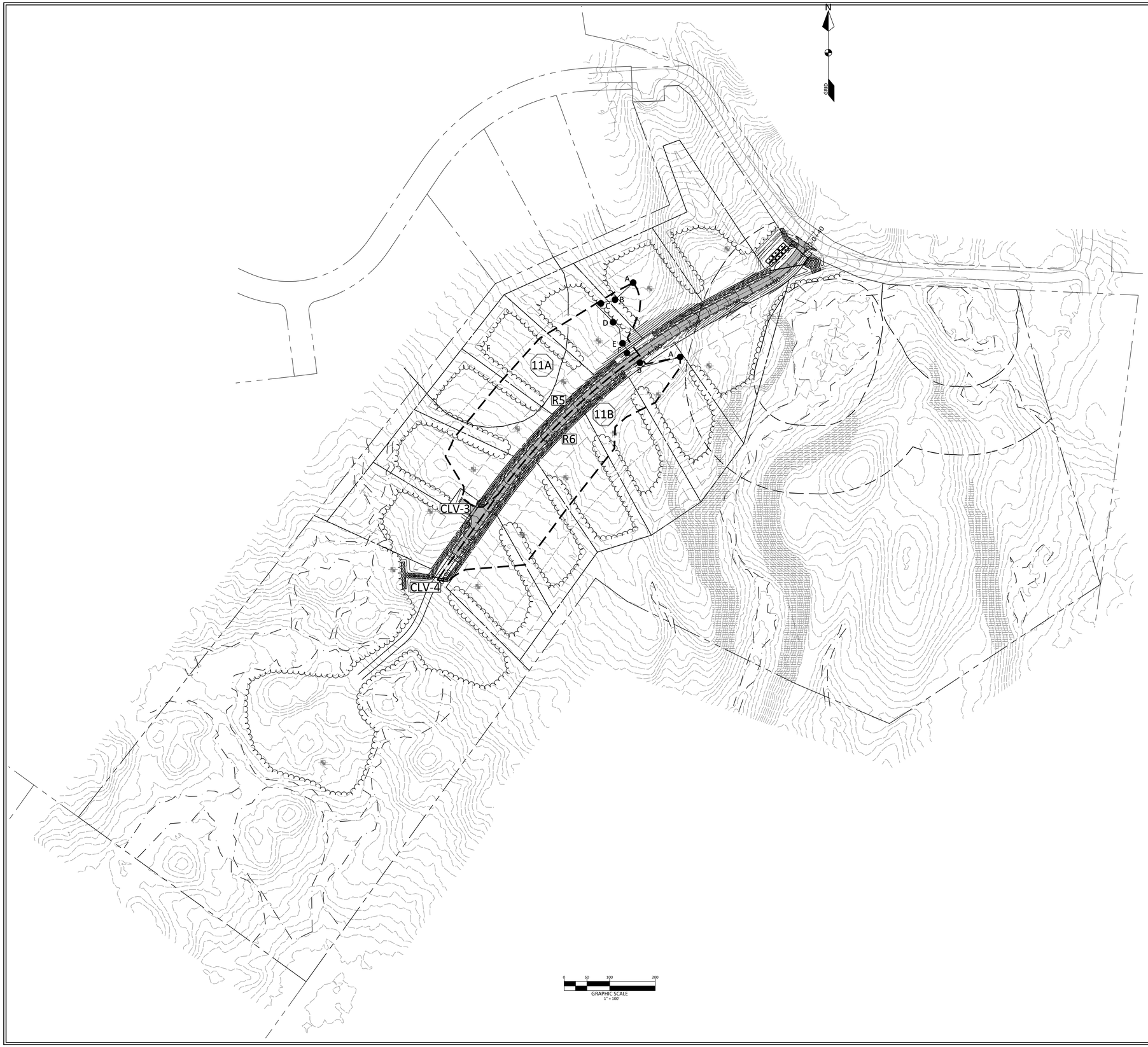
DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

REV	DATE	BY	DESCRIPTION
A	9-15-23	JPC	ISSUED FOR REVIEW

WATERSHED MAP: DEVELOPED CONDITIONS

AERIE ESTATES SUBDIVISION
AERIE DRIVE OFF EAGLES NEST ROAD
GRAY, MAINE
FOR:
SEBAGO REALTY, LLC
PO BOX 1116
WINDHAM, ME 04062

23050	JOB NUMBER:
1" = 100'	SCALE:
9-15-2023	DATE:
SHEET 2 OF 3	
WM-2	



WATERSHED MAP LEGEND

- 1 — WATERSHED NO.
- SP1 — REACH/STUDY POINT
- P1 — POND
- WATERSHED BOUNDARY
- A → B — TIME OF CONCENTRATION
- REACH PATH
- SOIL BOUNDARY

STATE OF MAINE
DUSTIN M. ROMA
No. 12131
REGISTERED PROFESSIONAL ENGINEER
2023

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 591-5055

REV	DATE	BY	DESCRIPTION
A	9-15-23	JPC	ISSUED FOR REVIEW

WATERSHED MAP: CULVERT SIZING EXHIBIT

AERIE ESTATES SUBDIVISION
AERIE DRIVE OFF EAGLES NEST ROAD
GRAY, MAINE

FOR:
SEBAGO REALTY, LLC
PO BOX 1116
WINDHAM, ME 04062

23050 JOB NUMBER:
1" = 100' SCALE:
9-15-2023 DATE:
SHEET 3 OF 3
WM-3

September 15, 2023

Kristen Muszynski, Assistant Planner
Members of the Gray Planning Board
24 Main Street
Gray, Maine 04039

Re: Stillwater Pines Phase 2
Project Revisions

SJR ENGINEERING, INC.
16 THURSTON DRIVE, MONMOUTH, ME. TEL: (207) 242-6248
STEVE@SJRENG.COM.

Dear Kristen and PB Members,

At the last Planning Board presentation for Phase 2 of the Stillwater Pines preliminary hearing, the project was discussed in greater detail and and determined to be a complete application. However, several items were requested to augment the project design. Of most concern, the Planning Board denied the requested waiver for a hydrogeological study. This request has set the project back several months as no one could perform the study in a quick time. We have since procured and have attached the study performed by Censi Associates.

We have also continued with project plan submissions to the Town Reviewing Engineer and believe all items are addressed. We have included the comments/replies with this submission so the Board knows they have been requested. These items have been revised on the plan set.

We have attached a specific response to each of the Town Reviewing Engineers comment in the same format as his memo. Changes/revisions to the plan also include adding at least one street tree to each lot along the lot frontage, adding street lighting at the end of Stillwater Road, and adding additional granite property monumentation at specific lot corners. Several notes have been added to the subdivision plan regarding trail maintenance, trails open to the public, and calculations for vernal pool development.

We have submitted these plans to the Gray Water District for a water line supply review. An approval memo from William Gardner indicates he is satisfied with the plans as submitted.

Project Introduction
Stillwater Pines, Phase 2

There has been some additional work in Phase 1 of the project, namely installation of the stream crossing arch culvert. Signs every 100' along the Phase 1 delineated wetland are a work in progress. Similarly, the Phase 1 trail system path tree cutting is a work in progress.

As you are all aware, this project will need a DEP SLODA permit for Phase 2. We have not submitted anything to DEP yet as we are waiting for a preliminary nod from the Gray Planning Board. As a general rule, many of the SLODA projects are taking the full 6-month review period at DEP. We understand your requirement of not coming back to the Planning Board for a final Town approval until that DEP approval is in hand. A waiver for a timeline may be necessary prior to the Town PB final approval document.

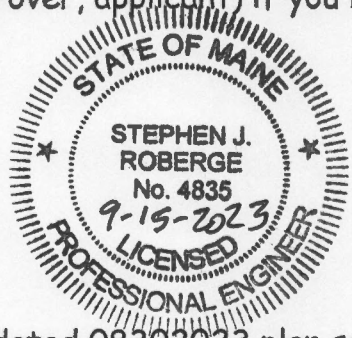
We look forward to presenting this project to the Planning Board and answering any questions you may have concerning the design of the project.

Please call me (or Ben Grover, applicant) if you have any questions.

Sincerely yours

[redacted]

Stephen Roberge, PE
SJR Engineering Inc.



CC: attachments and updated 08302023 plan set

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

Hydrogeologic Assessment of the Stillwater Pines Phase Two Subdivision Woodcock Drive, Gray

Date: September 13, 2023

Summary of the Assessment:

The proposed subdivision of 22 residential lots satisfies the requirements of the Town of Gray Subdivision Ordinance regarding effects on ground water quality.

Purpose of the Assessment:

The purpose of the assessment is to predict the locations and possible effects on groundwater from septic systems planned for the project to satisfy the requirements of the Town of Gray.

Information used:

Information used in this assessment include a set of plans with topography by SJR Engineering, Inc. dated June, 2023, a wetlands delineation by Mark Hampton LSS, soil information by Mark Hampton, LSS, LSE and library research of published geologic, hydrogeologic and soils information.

Project summary:

The project is a subdivision of 22 residential lots on 36.29 acres. The residences will be served by individual, subsurface wastewater disposal systems and the public water supply.

Summary of geology:

The property is located on the southerly and lower, dissected plateau of a northeasterly trending hill (see Figure 1). Drainage is southerly to Pleasant River by way of wetlands.

The site is mapped (see Figure 3) as glacial till (Pt) in the proximity of glacial delta deposits (Pmd) by Thomas Weddle on the *Surficial Geology of the Gray 7.5' Quadrangle, Maine* (ME Geol. Surv. Open-File Map 97-73). Hampton maps the property as an association of Dixfield and Brayton, which is consistent with the surficial geologic mapping.

Bedrock was not found in any of the soil pits of Hampton. Arthur Hussey and others mapped the bedrock beneath the site as granite and metamorphic rock on the *Bedrock Geology of the Portland 1:100,000 Quadrangle, Maine and New Hampshire* (ME Geol. Surv, Geologic Map 98-01). Depths to bedrock of nearby water wells are reported to be 10 to 20 feet in the Maine Water Well Database.

Summary of hydrogeology:

The property is not mapped as a Significant Sand and Gravel Aquifer by the Maine Geologic Survey (see Figure 4). The sand and gravel aquifer is adjacent to the property and the border is at the southerly base of the glacial till hillside along the banks of the Pleasant River.

There are numerous potable water supplies in Phase 1 of the project, on Woodcock Drive.

The source of ground water on this site is precipitation. Precipitation falling on this site seeps into the soil and descends until restrictive soil layers, the water table or bedrock is encountered.

On this site the soil is consistently described as sandy loam. Recharge is average to above average over the entire parcel. Approximately 40% of all precipitation recharges the soil.

The ground water flow directions on this property were determined by analysis of the surface topographic contours and the watershed analysis on the Maine Geologic Survey. The estimated hydraulic conductivity of the soils is 8 feet per day and the hydraulic gradients are estimated to be 3% (0.03), based on surface slopes. The effective porosity is assumed to be 25%.

Impact on ground water quality:

Nitrate-nitrogen is the chemical to assess for impact on ground water. Nitrate-nitrogen (NO3-N)

is generated by septic systems. It is a conservative contaminant, meaning it does not readily degrade in ground water, nor does it attach to soil particles. NO3-N is limited to 10 mg/liter in public drinking water supplies by the Primary Drinking Water Standard. The Gray Subdivision Ordinance requires the ground water to not exceed 10 mg/liter at the project property lines.

The analysis of NO3-N impacts was calculated by SOLUTRANS, a 32-bit Windows program for modelling three-dimensional solute transport written by Dr. Charles R. Fitts, of Fitts Geosolutions and the University of Southern Maine. The program is based on the analytical solutions of Liej *et. al.* (1991 and 1993). The solutions in SOLUTRANS all assume a uniform one-dimensional flow field, and allow three-dimensional dispersion, retardation and first-order decay. As the model is not dependent on a dilution calculation, drought conditions are taken into account.

Variables entered into the calculations include a hydraulic conductivity of 8 feet per day, a hydraulic gradient of 3% and an effective porosity of 25%, giving a seepage velocity of 0.96 feet per day. Other assumed variables include an initial wastewater concentration of 40 mg/liter NO3-N, a retardation of 1, a decay constant of zero and longitudinal, lateral and vertical dispersivities of 15, 5 and 0.5 feet, respectively. Flows of 360 gallons per day per residence were assumed.

Calculations were made and reveal a typical 10 mg/liter NO3-N plume from a septic system on this site will be approximately 60 feet in length. The curve is attached. Using the ground water flow directions, the plumes were drawn on details of the site plan and sent to SJR Engineering, Inc. for inclusion on a plan.

All the 10 mg/liter mg/liter NO3-N plumes remain on the parcel. All plumes move through wetland areas before the groundwater discharges to open streams and the Pleasant River. In wetlands bio-chemical reactions in the soil will thoroughly remove the nitrogen from the ground water.

Conclusions:

The proposed plan of 22 residential lots meets the requirements of the Town of Gray with regard to the effects of wastewater disposal on ground water. All 10 mg/liter plumes remain of the property and do not degrade the ground water of the neighborhood. Ground water flow to local wetlands will result in complete bio-chemical treatment by removing nitrates from ground water.

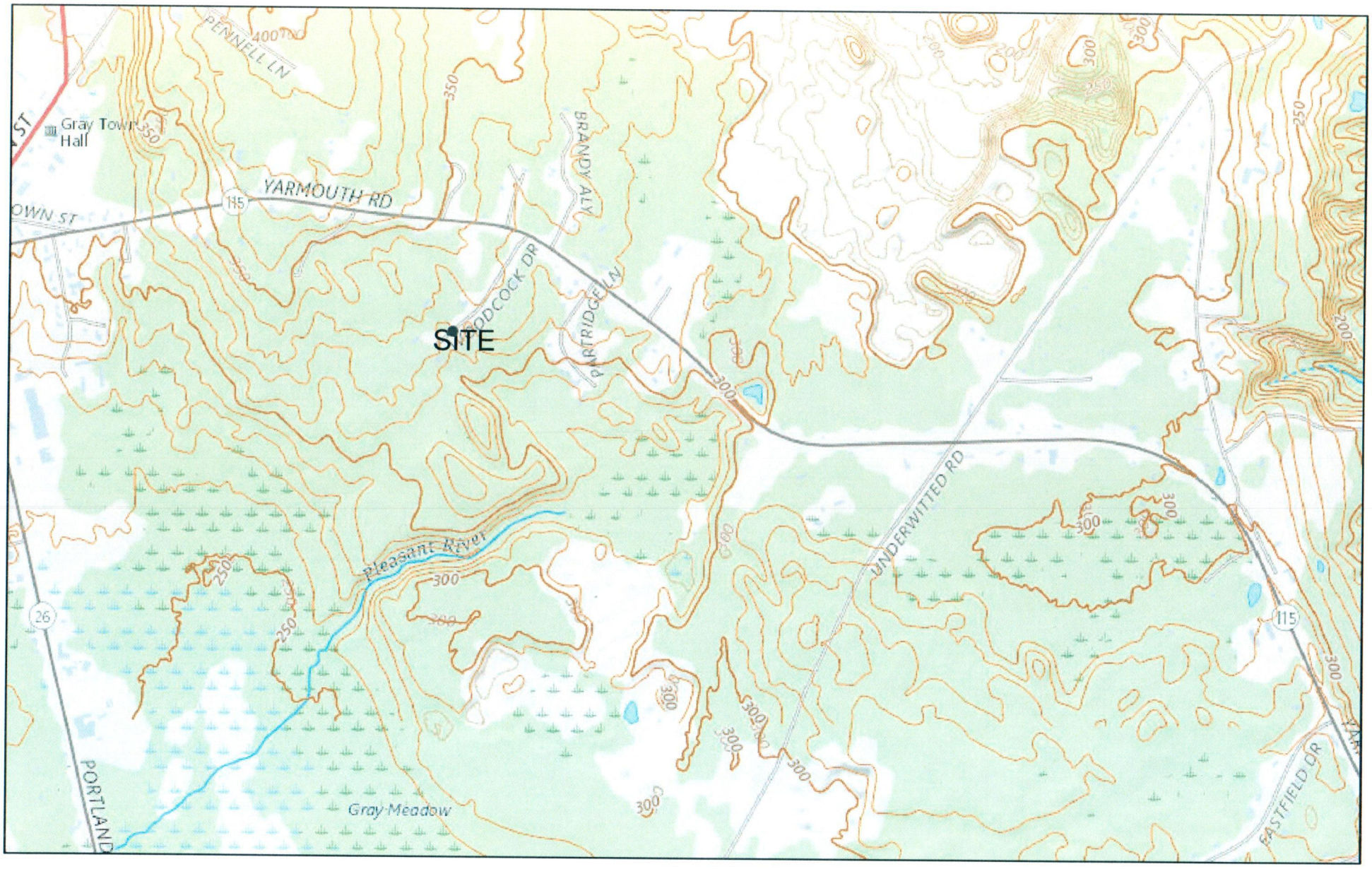
There are other suitable sites for wastewater disposal on each lot and restrictions of the

placement of disposal areas at the test pit sites of Hampton, as shown on the Soil Map, are not necessary.



Mark Cenci, LG # 467

Figure 1



8/28/2023, 12:52:57 PM

Normal Intermediate Contours

Normal Index Contours

1:18,056

0 0.1 0.2 0.4 mi

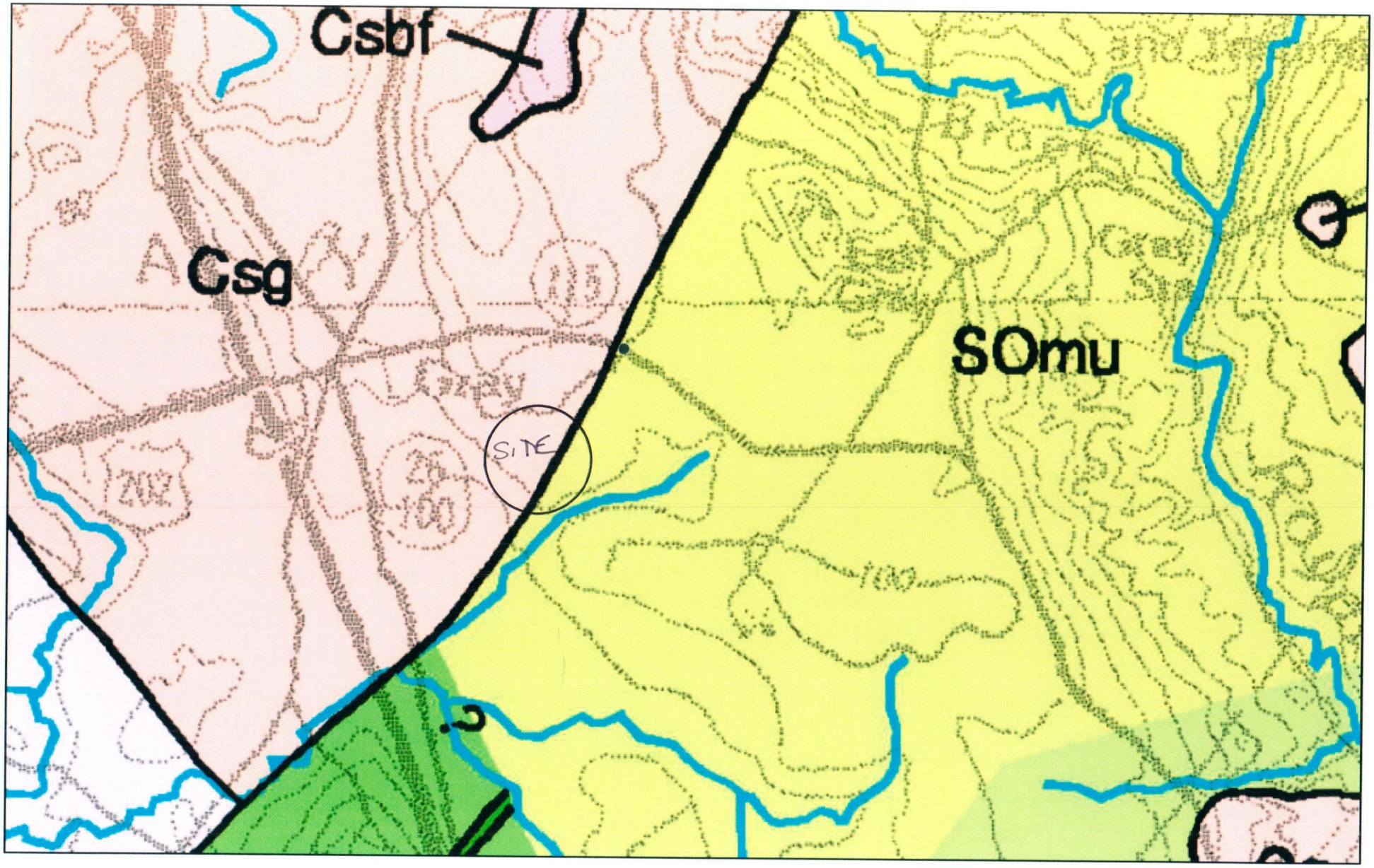
0 0.17 0.35 0.7 km

USGS The National Map: 3D Elevation Program. Data Refreshed July, 2023., USGS The National Map: National Boundaries Dataset, 3DEP Elevation

USGS

2021 USGS

Figure 2. Bedrock Geology 100K



8/28/2023, 1:05:14 PM

Image

Red: Band_1

Green: Band_2

1:36,112

0 0.23 0.45 0.9 mi

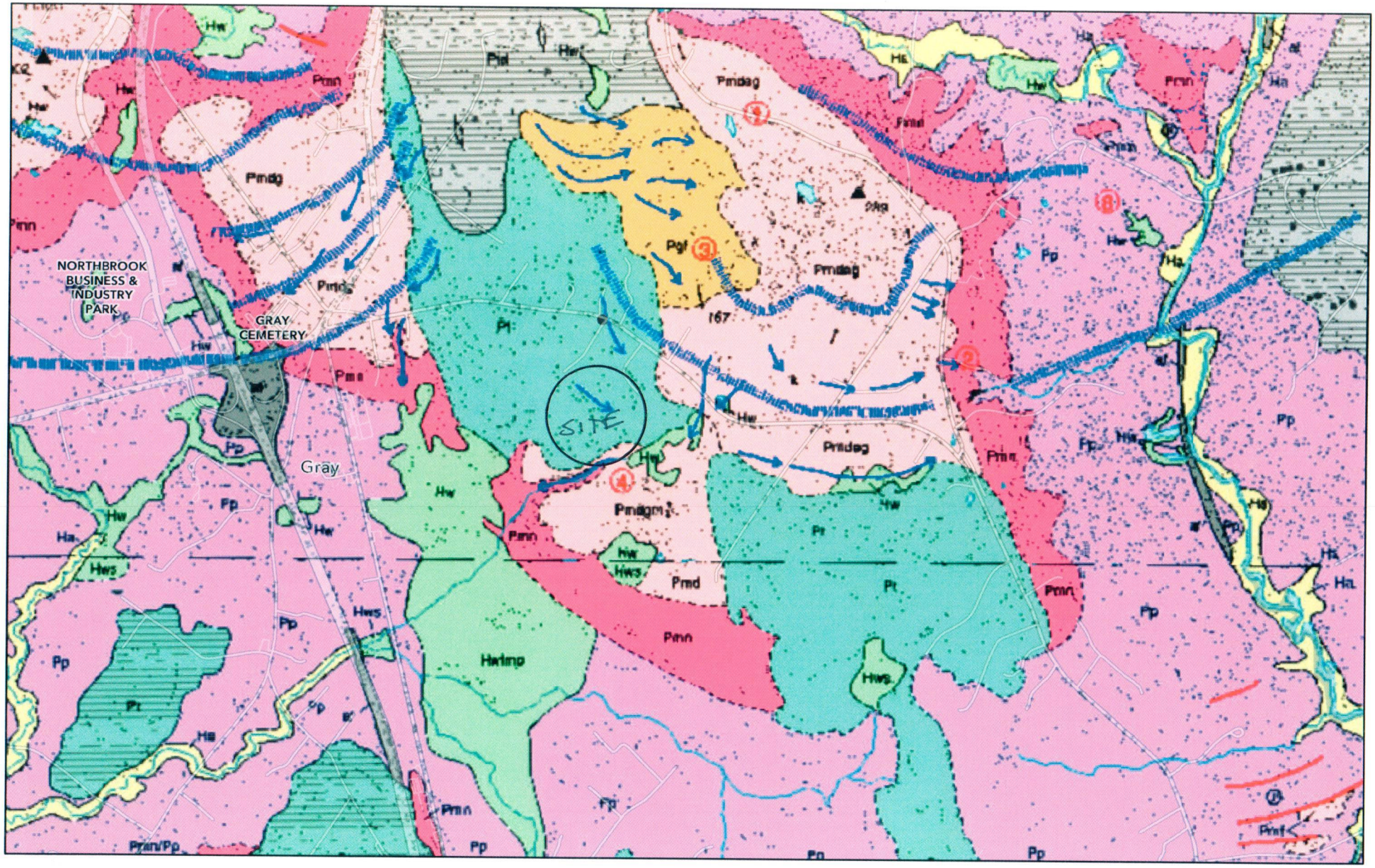
0 0.35 0.7 1.4 km

Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA, Maine Geological Survey

Maine Geological Survey

Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA | Maine Geological Survey |

Figure 3. Surficial Geology 1:24,000



8/28/2023, 1:06:02 PM

Image

Red: Band_1

Green: Band_2

Blue: Band_3

1:36,112

0 0.23 0.45 0.9 mi

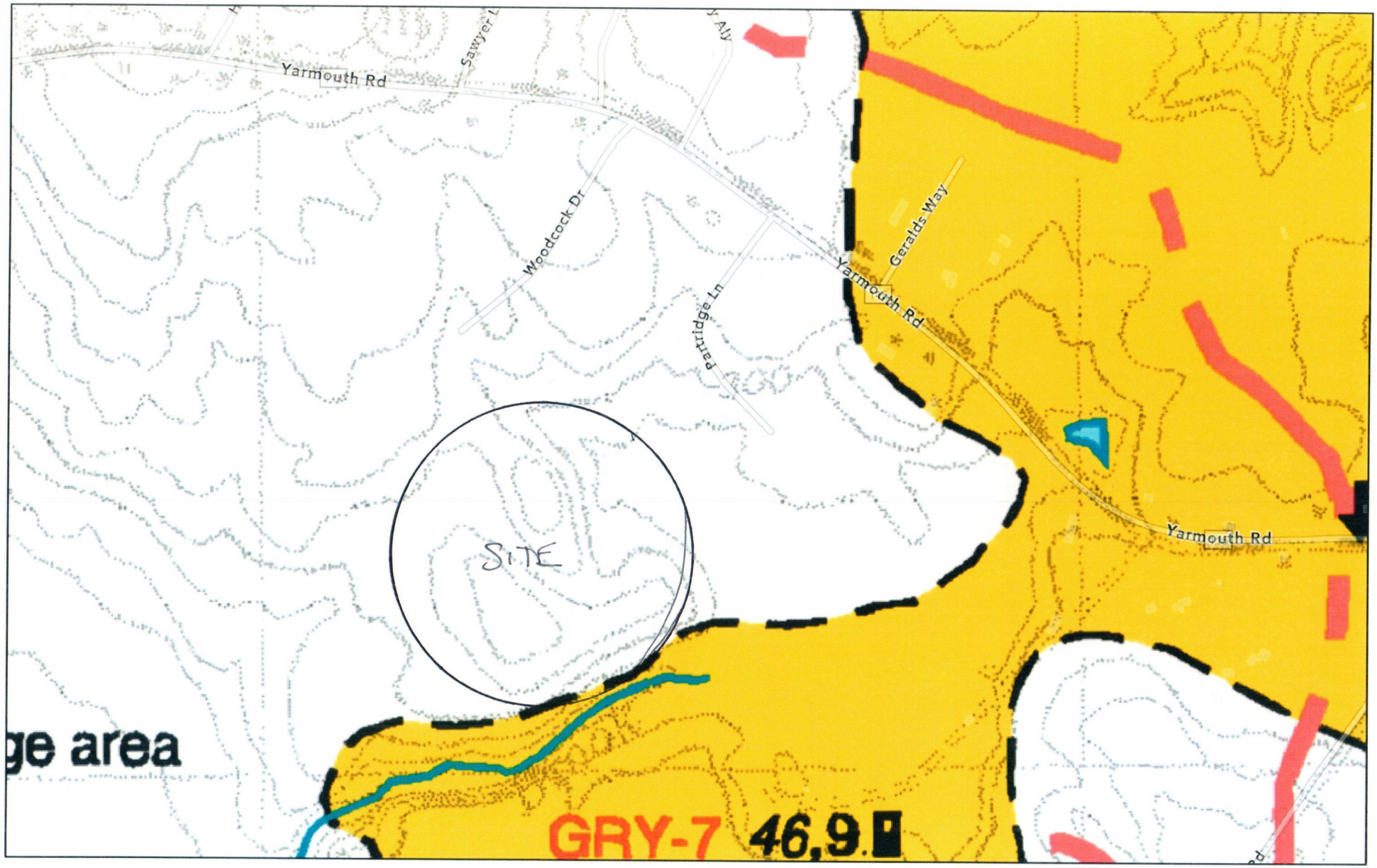
0 0.35 0.7 1.4 km

Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Maine Geological Survey

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Figure 4. Significant Aquifers 24K



9/13/2023, 8:10:36 PM

Image

Red: Band_1

Green: Band_2

1:9,028

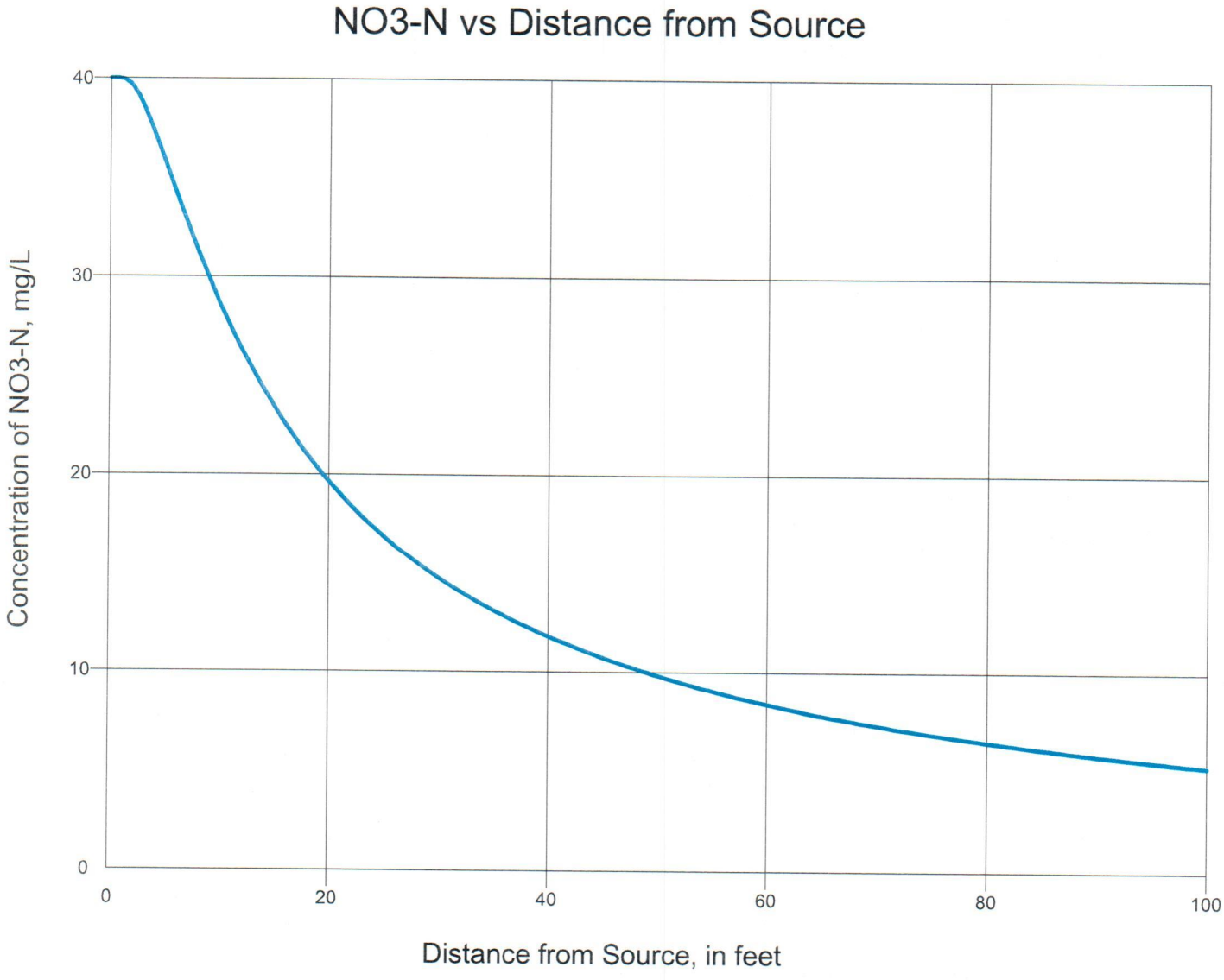
0 0.05 0.1 0.2 mi

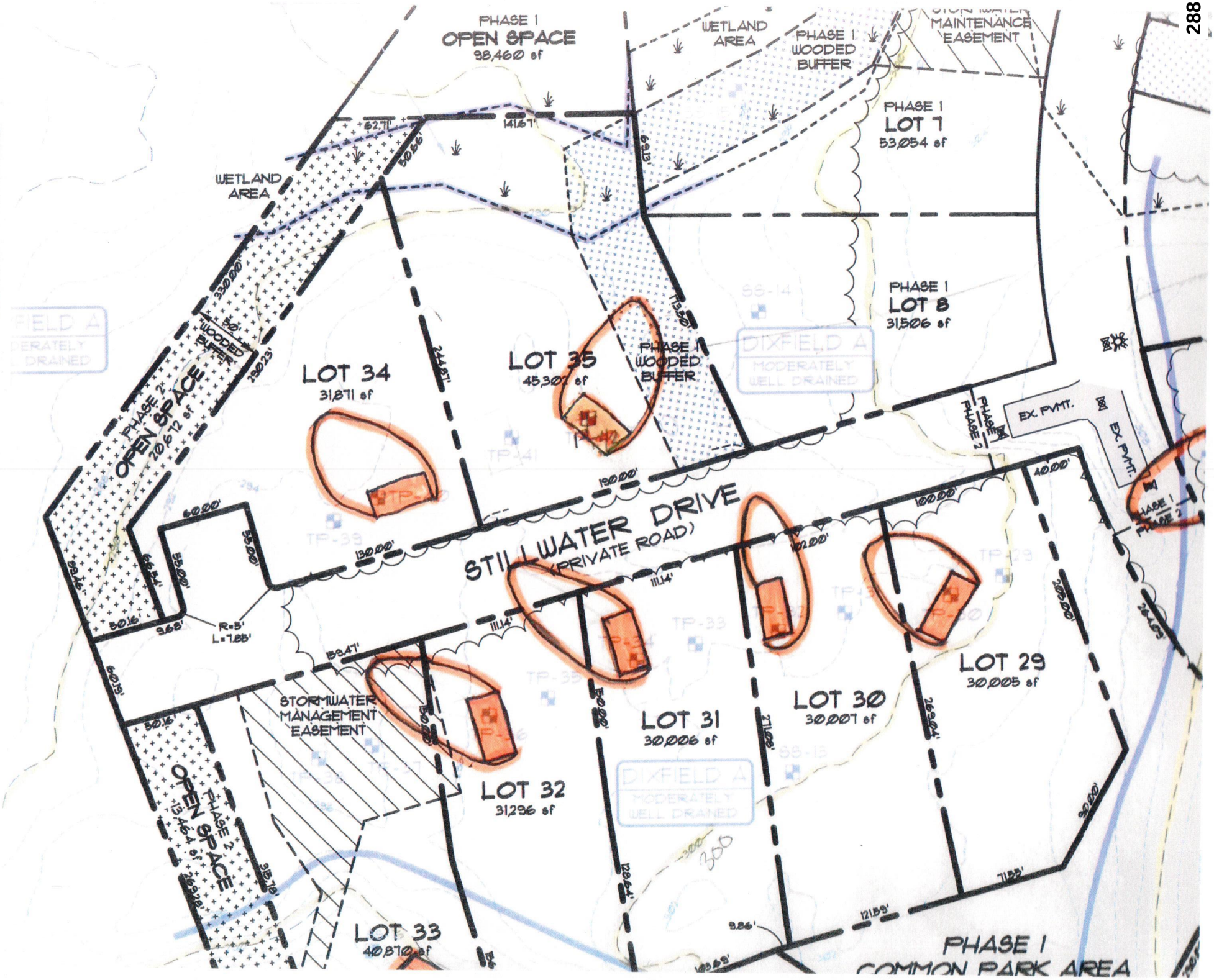
0 0.07 0.15 0.3 km

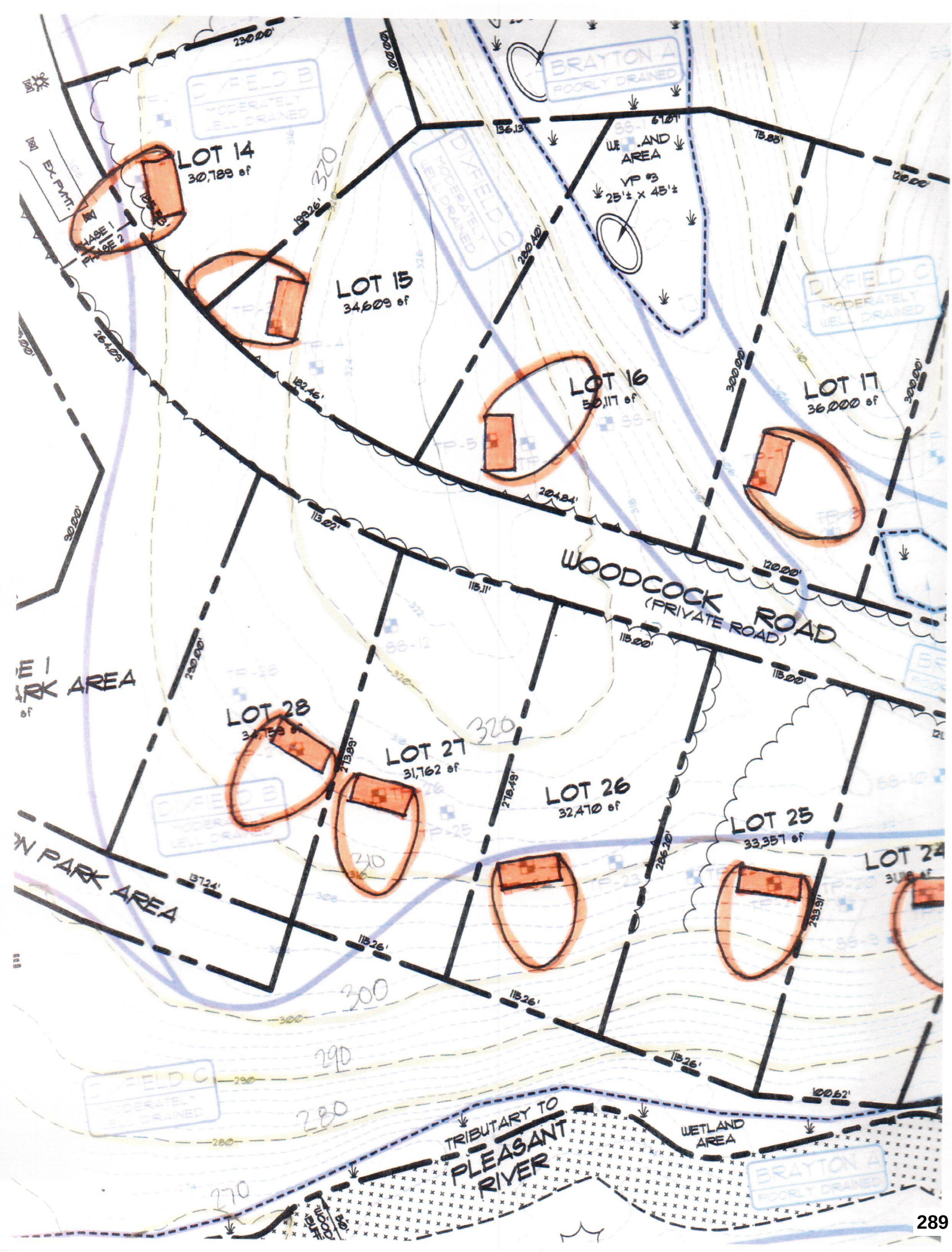
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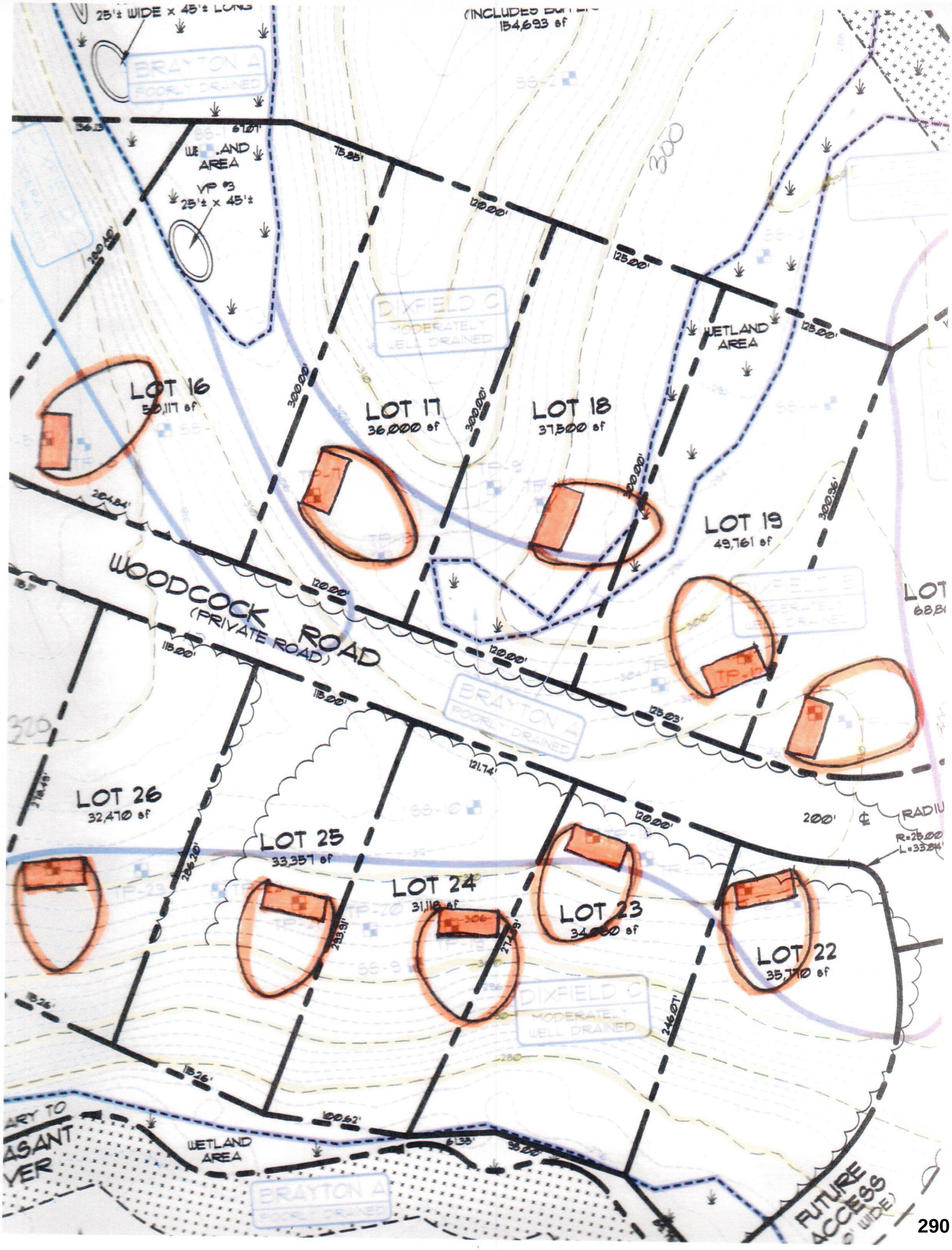
Maine Geological Survey

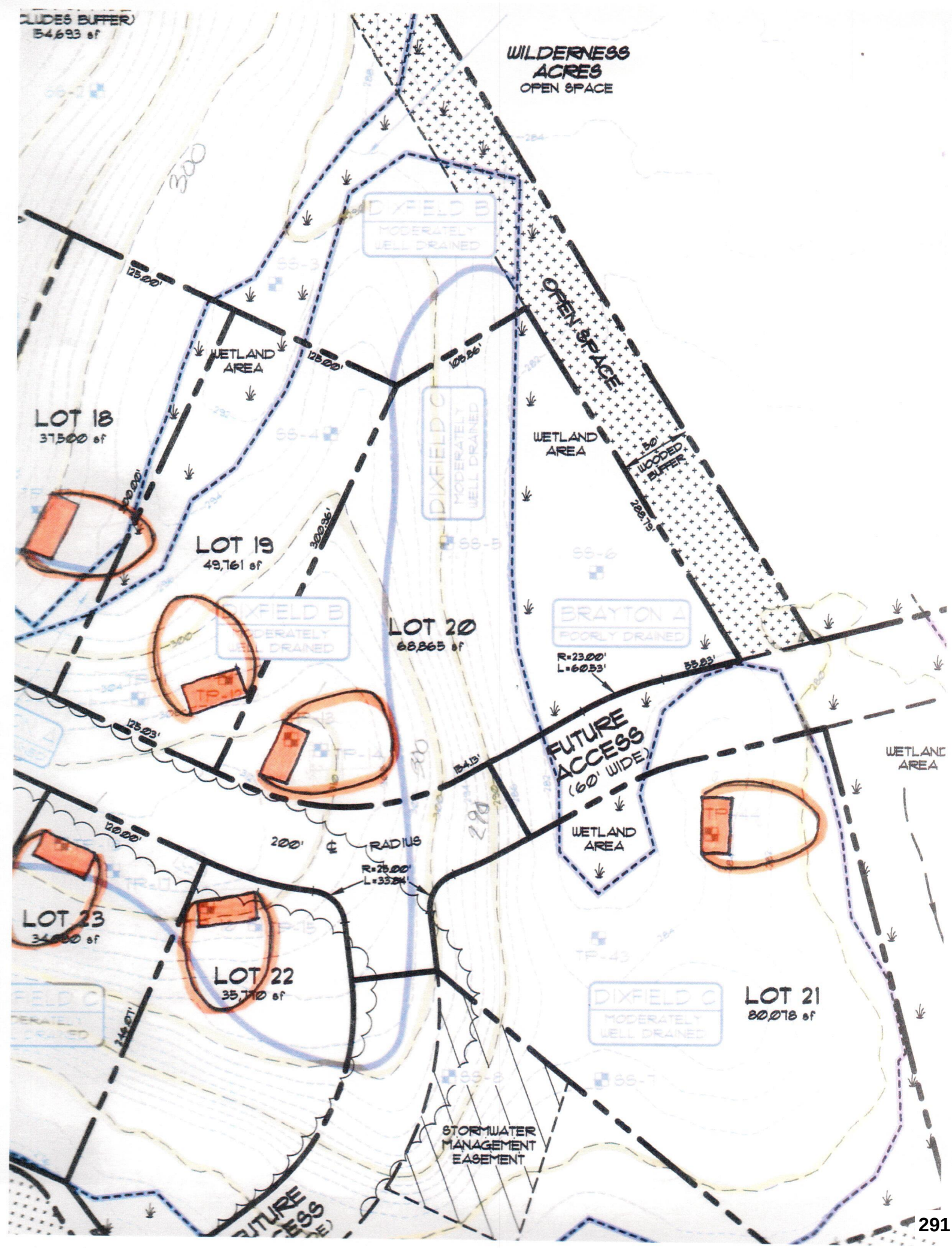
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NO3-N vs Distance from Source
Concentration of NO3-N, mg/L
40
30
20
10
0
0
20
40
60
80
100
Distance from Source, in feet


PHASE 1
OPEN SPACE
98,460 sf
WETLAND AREA
PHASE 1
WOODED BUFFER
STORM WATER MAINTENANCE EASEMENT
PHASE 1
LOT 7
53,054 sf
PHASE 1
LOT 8
31,506 sf
WETLAND AREA
LOT 34
31,871 sf
LOT 35
45,307 sf
PHASE 1
WOODED BUFFER
DIXFIELD A
MODERATELY WELL DRAINED
EX. PVMT.
EX. PVMT.
PHASE 2
OPEN SPACE
PHASE 2
206,772 sf
STILLWATER DRIVE
(PRIVATE ROAD)
R=5'
L=7.85'
STORMWATER MANAGEMENT EASEMENT
LOT 31
30,006 sf
LOT 30
30,007 sf
LOT 29
30,005 sf
LOT 32
31,296 sf
OPEN SPACE
PHASE 2
13,464 sf
LOT 33
40,870 sf
PHASE 1
COMMON PARK AREA


LOT 14
30,789 sf
LOT 15
34,609 sf
LOT 16
30,117 sf
LOT 17
36,000 sf
LOT 28
LOT 27
31,762 sf
LOT 26
32,470 sf
LOT 25
33,357 sf
WOODCOCK ROAD
(PRIVATE ROAD)
TRIBUTARY TO
PLEASANT
RIVER
WETLAND
AREA
EX. PVMT.
PHASE 1
PHASE 2
VP #3
25'± x 45'±
DIXFIELD B
MODERATELY WELL DRAINED
DIXFIELD C
MODERATELY WELL DRAINED
BRAYTON A
POORLY DRAINED
320
300
290
280
270


25'± WIDE x 45'± LONG
(INCLUDED BUFFER)
154,693 sf
BRAYTON A
POORLY DRAINED
WETLAND AREA
VP #3
25'± x 45'±
DIXFIELD C
MODERATELY WELL DRAINED
WETLAND AREA
LOT 16
50,117 sf
LOT 17
36,000 sf
LOT 18
37,500 sf
LOT 19
49,761 sf
WOODCOCK ROAD
(PRIVATE ROAD)
LOT 26
32,470 sf
LOT 25
33,357 sf
LOT 24
31,118 sf
LOT 23
34,000 sf
LOT 22
35,770 sf
BRAYTON A
POORLY DRAINED
DIXFIELD C
MODERATELY WELL DRAINED
WETLAND AREA
BRAYTON A
POORLY DRAINED
FUTURE ACCESS


CLUDES BUFFER)
54,693 sf
WILDERNESS ACRES
OPEN SPACE
DIXFIELD B
MODERATELY WELL DRAINED
125.00'
WETLAND AREA
125.00'
103.86'
OPEN SPACE
LOT 18
37,500 sf
DIXFIELD C
MODERATELY WELL DRAINED
WETLAND AREA
50' WOODED BUFFER
229.79'
LOT 19
49,761 sf
300.36'
DIXFIELD B
MODERATELY WELL DRAINED
LOT 20
68,865 sf
BRAYTON A
POORLY DRAINED
R=23.00'
L=60.33'
55.23'
TP-12
125.03'
FUTURE ACCESS (60' WIDE)
84.13'
WETLAND AREA
WETLAND AREA
100.00'
200' ℄ RADIUS
R=25.00'
L=33.24'
LOT 23
34,000 sf
LOT 22
35,770 sf
DIXFIELD C
MODERATELY WELL DRAINED
LOT 21
80,078 sf
STORMWATER MANAGEMENT EASEMENT
FUTURE ACCESS

FIRE CHIEF RESPONSE

From: William Gardner
To: steve@sjreng.com
Subject: Re: Stillwater Pines Phase 2 water line design review
Date: Monday, August 14, 2023 9:15:08 AM

The Gray Water district has reviewed the plans for Stillwater drive Phase 2 subdivision for a water main extension. At this time the plans are approved as presented. We look forward to providing potable water for this project.

Bill Gardner
Superintendent
Gray Water District
207-650-0519
w.gardner@graywaterdistrict.org

On Sat, Aug 12, 2023 at 7:13 AM <steve@sjreng.com> wrote:

> Hi Will,
>
> The Planning Board, Town Review Engineer, and the Fire Chief have all requested that I send a copy of my Stillwater Pines Phase 2 Subdivision plans to you for water line review. Can you perform that review and get back to me with any changes that you would like to see? We will be submitting comments and updated plans for PB preliminary subdivision review in September.
>
> **Steve Roberge, PE**
>
> **SJR Engineering Inc.**
>
> **16 Thurston Drive**
>
> **Monmouth, Maine 04259**
>
> **Cell: 207-242-6248**
>
> **http://www.sjreng.com**
>
> **Be kinder than necessary, for everyone you meet is fighting some kind of battle.**

steve@sjreng.com

From: steve@sjreng.com
Sent: Thursday, August 31, 2023 3:12 PM
To: 'Kristen Muszynski'
Cc: 'whaskell@gorrillpalmer.com'; 'Ben Grover'
Subject: RE: 2344.183 Stillwater Pines Phase II - Technical Peer Review Comments
Attachments: Re: Stillwater Pines Phase 2 water line design review

Hi Kristen,
See comments in red below.

Steve Roberge, PE
SJR Engineering Inc.
16 Thurston Drive
Monmouth, Maine 04259
Cell: 207-242-6248

http://www.sjreng.com

Be kinder than necessary, for everyone you meet is fighting some kind of battle.

From: Kristen Muszynski <kmuszynski@graymaine.org>
Sent: Thursday, August 31, 2023 2:31 PM
To: steve@sjreng.com
Cc: whaskell@gorrillpalmer.com; Ben Grover <ben@ahgrover.com>
Subject: RE: 2344.183 Stillwater Pines Phase II - Technical Peer Review Comments

Thank you for sending along these updates, Steve.

Below are a few items to catch up on, in preparation for the October submittal deadline:

We know the hydrogeological study is outstanding and is in the works. The board found the preliminary submittals otherwise complete, with the two waivers issued for the phosphorous and high-intensity soil study. Streetlights are now shown as added at end of Stillwater and Woodcock, so that requirement is addressed. I see the street trees are now reflected on the plan as well.

- Engineering comments are addressed to date; the Lot 33 driveway is very close to the stormwater area now; will want engineering confirmation that there is no issue with having no buffer between the driveway and that infrastructure.

- Where are we with the engineered driveways? We have added an additional sheet to the plan set showing some driveways, other driveways are shown fully graded on the previous drawings. Per my notes, Will was going to identify which ones would necessitate engineering to ensure required grading limits and management of stormwater impacts, and review those submittals for the board to consider.

- What is the status of the DEP permitting? The impact of the significant vernal pool setback on several proposed lots and the wetland impact for one or more driveways will be key parts of the final approval process. We

haven't submitted a SLODA permit application to DEP yet. We are waiting until the PB approves a preliminary plan so we can submit that as part of our DEP application...

- Monumentation to mark the lot lines is not shown on the updated sheets. Maybe they are shown on a different one that was not part of this latest update? We have added/shown additional monumentation per your request on other previous plans (not the ones submitted today)

- The board had requested GWD confirmation of water line viability as designed, if you could please provide a letter or have them email me. I have attached correspondence from Bill Gardner that the GWD has approved the plans. That email will be included with our PB submission.

- We will address the board's authority to approve a 20' road width and the CZA language, as the question was raised by our council liaison. OK, good.

- I believe item #2 below is close to done, if not done, and awaiting inspection, per Ben's latest email. Any updates on these other Phase I items?

1. **Phase I wrap-up/ CZA:** Per 401.11.5, all requirements associated within Phase I of Stillwater Pines subdivision approval must be completed before final approval of lots in Phase II. Staff have identified the following items that may be outstanding/pending at this time for completion of Phase I:
   1. Note #20 on the approved subdivision plan for Phase I: all wetlands will be protected as forested buffer, which must be delineated with signs every 100' around the perimeter.
   2. Per item #8 of the CZA, permitting and construction of the stream crossing to the playing field area is required as part of the construction of Phase I. This has been done as is now complete.
   3. Per Exhibit #3 of the CZA, trails are shown in both Phase I and II, with a note that the markings are intended to show "connectivity and not trail location." Phase I trails should thus be cut as part of finalization of Phase I requirements.

Those are the elements that I have flagged to date, based on the board's input and the review from the July meeting. I will have further review comments for you after seeing the formal updated submittal for October, and whatever we can check out in the meantime will keep things moving along to prepare for the final approval process.

Thanks,
Kristen

From: steve@sjreng.com <steve@sjreng.com>
Sent: Thursday, August 31, 2023 12:52 PM
To: Kristen Muszynski <kmuszynski@graymaine.org>; Will Haskell <whaskell@gorrillpalmer.com>
Cc: Ben Grover <Ben@ahgrover.com>
Subject: RE: 2344.183 Stillwater Pines Phase II - Technical Peer Review Comments

Hi Kristen/Will,
I've edited the 4 attached plans for the 3 items noted below. Please let me know if you have other concerns. Our hydrogeologist confirms he will have the hydrogeologic report ready for the Sept 15th PB submission.

Steve Roberge, PE
SJR Engineering Inc.
16 Thurston Drive
Monmouth, Maine 04259
Cell: 207-242-6248

http://www.sjreng.com

Be kinder than necessary, for everyone you meet is fighting some kind of battle.

From: Kristen Muszynski <kmuszynski@graymaine.org>
Sent: Monday, August 28, 2023 9:44 AM
To: steve@sjreng.com
Subject: FW: 2344.183 Stillwater Pines Phase II - Technical Peer Review Comments

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From: Will Haskell <whaskell@gorrillpalmer.com>
Sent: Monday, August 28, 2023 7:32 AM
To: Kristen Muszynski <kmuszynski@graymaine.org>
Cc: James Attianese <jattianese@gorrillpalmer.com>
Subject: 2344.183 Stillwater Pines Phase II - Technical Peer Review Comments

Hi Kristen,

We reviewed the following submitted by the Applicant. We assume you will forward these comments to the design engineer/applicant.

- Plan Set, prepared by SJR Engineering, Inc., dated 8-19-2023.
- Response to Comments prepared by SJR Engineering, Inc., dated 8-22-2023

We have reviewed the materials for conformance with the technical engineering portions of the Town of Gray Ordinance and generally accepted civil engineering standards and offer the following comments:

1) The driveway shown on the Phase I Common Park Area between Lots 29 and 28 depicts proposed grading for a "Possible Driveway". Plan Sheet 6 shows a level lip spreader at the end of the driveway. Provide the length of the level lip spreader.
2) Provide depth of the 1 ½ to 3" stone on the dispersion berm detail on Sheet 8.
3) The driveway for Lot 33 is closer than the 10' allowable distance to the property line, (Subdivision ordinance Section 401.13.17.H)
4) The other driveways appear to meet the requirements of the Subdivision ordinance. The driveway to Lot 18 is subject to MDEP NRPA approval for the wetland disturbance. The driveway for Lot 21 appears to allow for snowplowing/storage, but is subject to review by the Public Works Director, (Subdivision ordinance Section 401.13.17.E)

Thank you,

William C. Haskell | Principal

GORRILL PALMER

300 Southborough Drive, Suite 200 | South Portland, ME 04106
207.772.2515 x235 (office) | 207.800.4511 (direct) | 207.318.7052 (mobile)
www.gorrillpalmer.com

steve@sjreng.com

From: steve@sjreng.com
Sent: Tuesday, August 22, 2023 6:58 AM
To: 'Kristen Muszynski'; Will Haskell (whaskell@gorrillpalmer.com)
Cc: Ben Grover (Ben@ahgrover.com)
Subject: RE: 2344.183 Stillwater Pines Phase II - Technical Peer Review
Attachments: Plan Set 08202023.pdf

Hi Kristen and Will,
I've attached updated plans per Will's email comments below. We still do not have the hydrogeologic study completed yet so I can't submit to the PB for completeness. However, I want to be able to have plans that pass the Town Engineers review when we can submit. Can you have Will review the plans again? I've made some quick comments in red in Wills comments below.

Steve Roberge, PE
SJR Engineering Inc.
16 Thurston Drive
Monmouth, Maine 04259
Cell: 207-242-6248

http://www.sjreng.com

Be kinder than necessary, for everyone you meet is fighting some kind of battle.

From: Kristen Muszynski <kmuszynski@graymaine.org>
Sent: Friday, August 11, 2023 9:35 AM
To: steve@sjreng.com
Subject: Fw: 2344.183 Stillwater Pines Phase II - Technical Peer Review

Hi Steve: I'll be back on Monday and we can followup on this and any other elements that need to be addressed before your next time with the board.
best,
Kristen

From: Will Haskell <whaskell@gorrillpalmer.com>
Sent: Thursday, August 10, 2023 11:10 AM
To: Kristen Muszynski <kmuszynski@graymaine.org>
Subject: 2344.183 Stillwater Pines Phase II - Technical Peer Review

Hi Kristen,

We reviewed the following submitted by the Applicant. We assume you will forward these comments to the design engineer/applicant.

- Updated Stillwater Pines Preliminary Application, prepared by SJR Engineering, Inc., dated 7-25-2023.

We have reviewed the materials for conformance with the technical engineering portions of the Town of Gray Ordinance and generally accepted civil engineering standards and offer the following comments:

1. Provide a detail for the dispersion berm at the filter basins. Added to sheet 8
2. Call out the length of the Level Lip Spreader below the "Possible Driveway". I'm not sure which level spreader is noted?
3. The Applicant has included a stormwater time of concentration segment across both soil filter pond bottoms. We disagree with having a time of concentration segment across the pond bottoms, but the conclusion of the stormwater analysis is unlikely to appreciably change due to removal of these segments. No response needed
4. We recommend that grading plans with culvert sizes and location revisions for the following driveways be provided for review by the Town. We have edited the plans (and added sheet 12) to show the driveways noted below with spot grades (slopes less than 6%), wetland impacts (needs approval from DEP), and 50' tangent distance from edge of pavement radius (we are assuming the future road to the Town parcel will be created allowing for the Lot 21 driveway). All lots can be assessed with appropriate driveways (house design by others).
    - Lots 18, 20 and 21 due to steep slopes and wetland impacts in accordance with the Subdivision Ordinance Section 401.13.17.C.
    - Lot 33 driveway, and the turnaround section of driveways on Lots 32, 31, 29, 26, 24 due to proximity to property line in accordance with the Subdivision Ordinance Section 401.13.17.H.
    - Lots 21 and 22 due to proximity to intersection of the Future Access in accordance with the Subdivision Ordinance Section 401.13.17.D.

Thank you,

William C. Haskell | Principal

GORRILL PALMER

300 Southborough Drive, Suite 200 | South Portland, ME 04106
207.772.2515 x235 (office) | 207.800.4511 (direct) | 207.318.7052 (mobile)
www.gorrillpalmer.com

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July 25, 2023

Kristen Muszinski
Planning Department
Town of Gray
Gray, Maine,

Re Phase 2 Stillwater Pines

Hi Kristen,

I have received and reviewed the July 19, 2023 comments from the Town reviewing Engineer. I haven't seen a reply from the first set of review comments (July 6, 2023) so I'm assuming those have been addressed. This second set of review comments are generally clean-up items and should be the end of review edits. We have made the appropriate edits to the plans. I have copied Will's email narrative into this reply to make my comments to each item of concern.

1. Provide copies of the MDEP SLODA and NRPA permit applications and permits (once received) to the Town.
   The approval documents (SLODA, NRPA) from DEP will be provided once they have been obtained from DEP.

2. If the area within the 250' vernal pool setback on lots 14, 15, 16 is proposed as undisturbed area, we recommend revising the building envelopes to exclude the vernal pool setback.
   We have depicted the lot setback lines as required by the land use ordinance. We have added proposed building windows to the subdivision plan for each lot. Lot setback lines are different than building envelopes.

3. Building envelopes should end at the clearing limits shown on each lot. Building envelopes are currently shown within the 75' stream setback and the 25' wetland setback on some lots, which would be corrected if the envelopes end at the clearing limit.
   We have not previously shown building envelopes on the plans, but have added them with this update. Please see note 19 on the subdivision plan indicating the building envelopes can be modified with appropriate permits from DEP.

4. We recommend that the note requiring drip edge infiltration for all houses and garages be added to the subdivision plan.
   We have added note 23 to the subdivision plan requiring roof drip strip infiltration for houses and garages.

5. Show storm drain outlet aprons for the storm drain inlets to the underdrained soil filters.
   We have added storm drain outlet protection and rocked energy suppresion berm for each inlet to the soil filter ponds.

SJR ENGINEERING, INC.
STEVE@SJRENG.COM. 16 THURSTON DRIVE, MONMOUTH, ME. TEL: (207) 242-6248

6. Remove the reference to the new hydrant at Sta. 15+55 from the profile on sheet 5. The new hydrant at 19+75 +/- has the wrong station label on the profile.
   We have removed the erroneous label and added the correct information to the plan.

7. The spillway from pond 2A/2B may have a flow of 5.3 cfs during a 25-year storm. We recommend that a culvert under the driveway be constructed rather than allowing this to flow over the surface of the driveway.
   We have added an 18" culvert to the plans under the driveway of Lot 33.

8. Call out the length of level lip spreader below the Possible Driveway, and below ponds 2A/2B.
   We have added the level lip spreader length to the outflow from Pond 2.

9. We recommend that a note be added requiring that the contractor stake out the level lip spreaders in advance of constructing them and reviewing the locations and topography with the Town Engineer to ensure that the runoff will be dispersed as sheet flow.
   We have added this note to the plans.

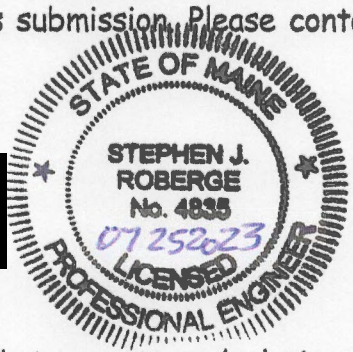
10. The Tc for post WS 2 in HydroCAD should end at the edge of the pond, and segment 4 should be modeled as shallow concentrated flow, not sheet flow.
    It is my opinion flows within the soil filter pond should be modelled as sheet flow as the water within the pond is spread out over the entire basin area as it infiltrates into the ground surface. Although I disagree with this item 10 request, we have revised the stormwater model to show flows within the pond as shallow concentrated flow to keep the project review moving along. The stormwater analysis has been revised showing flows in the pond as shallow concentrated with a shorter time of concentration. The pond control structure was slightly edited to reduce the discharge from the pond to acceptable levels at the design point.

I believe we have provided acceptable responses and plan updates to the comments provided with this submission. Please contact me if you have any other questions.

Sincerely yours,

[redacted]

Stephen Roberge, PE



Enclosures: updated plans and stormwater calculations

July 10, 2023

Kristen Muszinski
Planning Department
Town of Gray
Gray, Maine,

Re Phase 2 Stillwater Pines

Hi Kristen,

I have received and reviewed the comments from the Town reviewing Engineer and want to compliment Will Haskell of Gorrill Palmer for his excellent in-depth review and comments. There is a lot of information presented in the 13-page plan set and sorting through all that information is impressive. I agree with his comments and have made appropriate edits to the plans. I have copied his email narrative into this reply to make my comments to each item of concern.

1. As noted in the application packet, this project will require a Maine DEP Site Location of Development Act permit (401.13.12.B).
   We have added to note 19 on the subdivision plan indicating the project will require a Maine SLODA permit approval.

2. The final subdivision plan should be sealed by the professional engineer and a professional licensed surveyor.
   We will provide engineering and surveying seals to the subdivision plan once preliminary approval is obtained.

3. Note 19 on the subdivision plan should be modified to include impacts associated with significant vernal pool #1.
   We have modified note 19 and added note 20 to the subdivision plan to include impacts associated with the significant vernal pool.

4. A 250' buffer around significant vernal pool #1 should be shown on the subdivision plan and other pertinent plans in the plan set.
   We have shown a 250' buffer around the significant vernal pool (dash line with affected area hatch) on the subdivision plan.

5. Provide calculations of the disturbance and unfragmented forest within the 250' critical habitat buffer around the significant vernal pool #1. Determine whether a Maine DEP NRPA permit by rule or individual permit will be required for the proposed/existing disturbance within the critical habitat buffer.
   We have attached calculations within note 20 shown on the subdivision plan. We have calculated a presumed area impact from development of Phase 1 and a proposed impact to Phase 2 on the 250' buffer. Rules allow for up to 25% impact to the habitat buffer area. This item will need to be approved by Maine DEP. In summary, we have less than

SJR ENGINEERING, INC.
STEVE@SJRENG.COM. 16 THURSTON DRIVE, MONMOUTH, ME. TEL: (207) 242-6248

25% impacts (in total) to the buffer area as shown by the clearing limits within proposed lots 14/15/16.

6. The grading for Filter Basin 2B on Lot 33 extends onto lot 32. Either revise the grading or extend the grading/stormwater easement on lot 32.
   We have revised the stormwater easement area to include all grading for soil filter basin 2.

7. In the stormwater calculations for pre-development conditions, subcatchment DP1, the sheet flow component of the time of concentration consists of 2 segments, totaling 200' of length. We typically see sheet flow lengths limited to 100' or at most 150', as water tends to concentrate after those distances. We recommend that the sheet flow calculation be revised for the pre-development stormwater calculations for subcatchment DP-1.
   I agree with this statement and have changed the stormwater model accordingly.

8. In the stormwater calculations for pre-development conditions, subcatchment DP1, it appears that a 420' length of shallow concentrated flow is missing from the time of concentration flow path entered into the HydroCAD model. This segment is shown on the watershed plan. Similarly, in the stormwater calculations for post-development conditions, subcatchment WS3, this segment appears to be missing in the model.
   I agree with this statement and have changed the stormwater model accordingly.

9. In the stormwater calculations for the post-development conditions, subcatchment WS3, the sheet flow component of the time of concentration consists of 3 segments, totaling 410' of length. We recommend that the sheet flow calculation be revised for the post-development stormwater calculations for subcatchment WS-3.
   I agree with this statement and have changed the stormwater model accordingly (lawn condition, and somewhat different flow path).

10. In the post-development stormwater calculations, the storage for Filter Basin pond 2 appears to be incorrect. The areas for elevations 288 and 291 do not appear to match what is shown on the plan.
    Great catch! We have updated the stormwater storage area and volumes for pond 2 to that shown on the plan. New stormwater calculations have been run resulting in minor changes to control structure within Pond 2.

11. On Sheet WS-1, the time of concentration for watershed 2 is not shown correctly and does not match what is included in the HydroCAD calculations. It appears that what is shown in the HydroCAD calculations is correct.
We have edited the plan to show what has been modelled within the HydroCad model.

12. In the stormwater calculations for the post-development conditions, it appears that proposed roof areas are not included in the impervious area breakout. To accurately reflect the proposed conditions the proposed roof areas should be included to meet Ordinance Section 401.13.12.A.
We have not included proposed roof areas within the model. There are notes on the plan indicating all roof water for a 25 year storm event is to be infiltrated into roof drip strip area, pass through the filter media into foundation drains outletting to daylight. We assume the water entering the underdrain is groundwater and has already been detained for stormwater purposes. This is a concept idea as we have no knowledge of the type of house being constructed. I do want to point out the proposed buildings are shown "in concept only" and hope that the eventual Owner of the lot will be more creative in designing the house than constructing the same building as shown on all 22 proposed lots.

13. The spillway of filter ponds 2A and 2B on Lot 33 is located very close to the proposed garage/house on that lot. If the overflow spillway is activated, there may be flooding issues at this house and driveway. We recommend reconfiguring the overflow spillway. **We have redesigned the control manhole structure (1 structure only within the middle berm of the pond), and have relocated the emergency spillway to the side of the proposed paved driveway.**

14. The emergency spillway detail should have minimum 15" of rip rap thickness.
We have edited that detail as noted above.

15. Spillway detail on Sheet 9 is labelled for Filter Basin #1. Need to relabel or add detail for the other Filter Basin.
We have added additional labeling for filter basin 2.

16. Spillway detail should show an impermeable barrier set at the desired invert elevation. **We have added a 2" by 12" board set on posts within the riprap spillway. See detail on sheet 9.**

17. Provide a detail for the level lip spreader.
A level spreader is now shown on sheet 8.

18. The orifice inlet of the outlet control structure at filter basin 2A is very close to the spillway. If spillway is activated, flow may follow the stone material around the outlet structure and associated outlet pipe resulting in failure.
We have relocated the outlet control structure to inside the pond. We have also relocated the emergency spillway to the corner of the pond.

19. We recommend showing the lot setbacks on plan and profile sheets.
We have turned on the lot setback layer on the plan/profile sheets.

20. Check and confirm that there is adequate sight distance for the residential driveways on either side of the vertical curve at station 14+13.
We have checked the sight distance for the driveways as shown on the plan. All exceed 250' sight distance for the assumed 25MPH speed limit.

21. Add silt fence/erosion control berm around filter basins 2A and 2B.
We have added silt fence/erosion control berm around Pond 2 basin.

22. Add silt fence/erosion control berm along both sides of Stillwater Drive.
We have added silt fence/erosion control berm along both sides of Stillwater Drive.

23. Add silt fence/erosion control berm along the southerly side of Woodcock Drive.
We have added silt fence/erosion control berm along the southerly side of Woodcock Drive.

24. Provide documentation on ditch design and whether any ditches require erosion control blankets or riprap.
I'm not sure where your concern lies...the road is to be curbed with drainage entering into the stormwater system. Water being discharged from each pond is to have a level spreader at the outlet end of culvert. We have expanded the erosion control blanket along the ditch at the end of Woodcock Road to insure no erosion in that small subwatershed.

25. Section 401.7.2.C.20 and 401.13.12.A - Add a note describing the assumed impervious and developed area for each lot to Subdivision Plan.
We have copied the information shown on sheet 3 and placed it on the subdivision plan.

26. Add a note to Subdivision Plan that lots are not to be further subdivided.
We have added note 21 on the subdivision plan.

27. Show water service to Lot 33 along driveway to avoid the filter basins.
We have revised the water service to Lot 33 to run along the driveway.

28. Show water valve at connection to existing water main on profile Sta 11+00.
We have provided additional text to the existing water valve at Station 11+00.

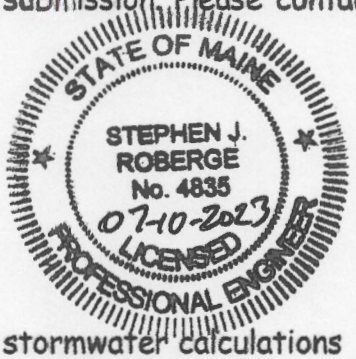
29. Show air release valve at watermain high point station 14+00 to 15+00 Woodcock Road. Water main design should be reviewed by Gray Water District.
We have relocated the proposed fire hydrant to the high point of the water line which can be opened for air release purposes. A set of plans will be provided to the Gray Water District for review and comment.

I believe we have provided acceptable responses and plan updates to the comments provided with this submission. Please contact me if you have any other questions.

Sincerely yours,

[redacted]

Stephen Roberge, PE



Enclosures: updated plans and stormwater calculations

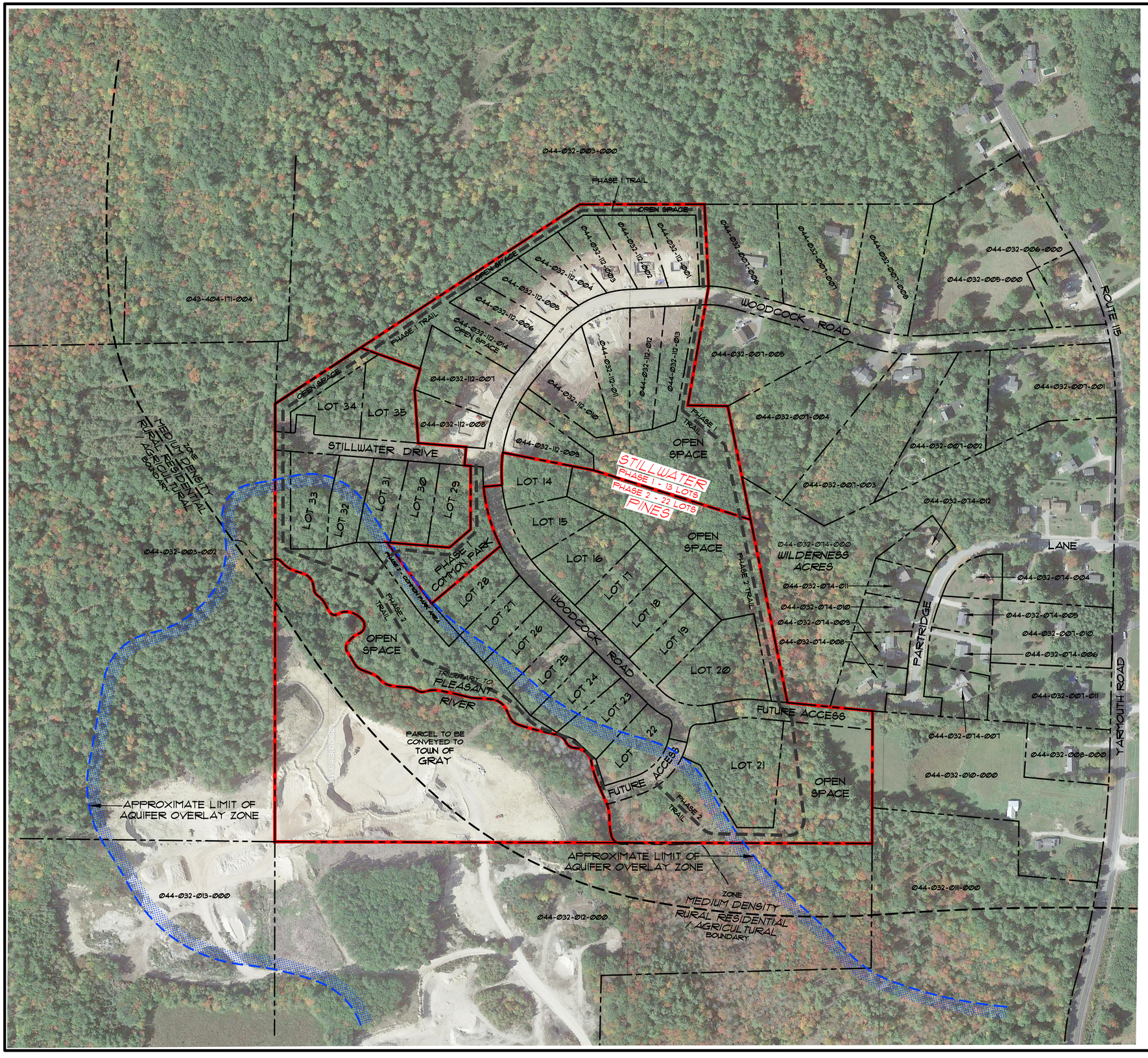
From: William Gardner
To: steve@sjreng.com
Subject: Re: Stillwater Pines Phase 2 water line design review
Date: Monday, August 14, 2023 9:15:08 AM

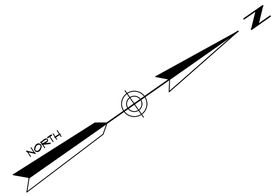
The Gray Water district has reviewed the plans for Stillwater drive Phase 2 subdivision for a water main extension. At this time the plans are approved as presented. We look forward to providing potable water for this project.

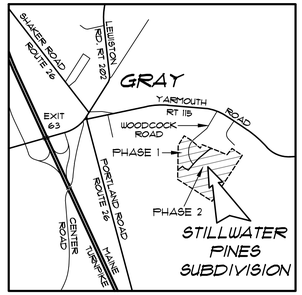
Bill Gardner
Superintendent
Gray Water District
207-650-0519
w.gardner@graywaterdistrict.org

On Sat, Aug 12, 2023 at 7:13 AM <steve@sjreng.com> wrote:

> Hi Will,
>
> The Planning Board, Town Review Engineer, and the Fire Chief have all requested that I send a copy of my Stillwater Pines Phase 2 Subdivision plans to you for water line review. Can you perform that review and get back to me with any changes that you would like to see? We will be submitting comments and updated plans for PB preliminary subdivision review in September.
>
> **Steve Roberge, PE**
>
> **SJR Engineering Inc.**
>
> **16 Thurston Drive**
>
> **Monmouth, Maine 04259**
>
> **Cell: 207-242-6248**
>
> **http://www.sjreng.com**
>
> **Be kinder than necessary, for everyone you meet is fighting some kind of battle.**







LOCATION MAP

NOTES

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   A) PLAN ENTITLED "FINAL PLAN - STILLWATER PINES SUBDIVISION", DATED JULY 2021, RECORDED AT SAID REGISTRY IN PLAN BOOK 221, PAGE 432.
   B) TOWN OF GRAY TAX MAPS AND G.I.S. MAPPING
   C) AERIAL IMAGES (OCTOBER 2021) OBTAINED FROM GOOGLE EARTH.

3) OWNER OF RECORD - A.H. GROVER, INC.
   DEED REFERENCE - BOOK 39,951, PAGE 265
   TAX MAP 44, LOT 32-112 (PHASE 2)

4) PARCEL AREA = 36.29± ACRES (PHASE 2)

5) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY PANEL #230048 0015A, EFFECTIVE DATE JANUARY 6, 1982.

SCALE : 1" = 150'

0 75 150 300 450 600

STATE OF MAINE
STEPHEN J. [redacted]
PROFESSIONAL ENGINEER
FOR APPROVALS ONLY

REV:	BY:	DATE:	CHANGES:
2	SJR	8-18-2023	ADJUST LOT 21
1	SJR	6-16-2023	SUBMITTED FOR PLANNING BOARD REVIEW

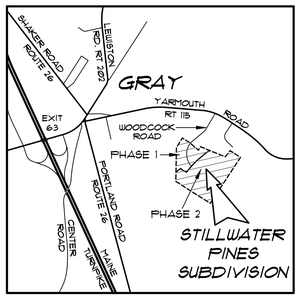
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SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONTMOUTH, MAINE 04259
(207) 242-6248 tel & fax
steve@sjreng.com
SJR ENGINEERING

AERIAL OVERVIEW
STILLWATER PINES, PHASE 2
WOODCOCK DRIVE, GRAY, MAINE
PREPARED FOR
A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

DATE	PROJECT
JUNE 2023	2023-04
DRAWN BY	SCALE
SJR	1" = 150'

SHEET 1



LOCATION MAP

LOT DEVELOPMENT AREAS

LOT #	IMPERVIOUS AREA (±)	CLEARED AREA (±)	LOT #	IMPERVIOUS AREA (±)	CLEARED AREA (±)
14	3675 sf	13,008 sf	25	4515 sf	13,575 sf
15	3912 sf	13,551 sf	26	4669 sf	15,215 sf
16	3799 sf	15,168 sf	27	4783 sf	14,821 sf
17	4366 sf	11,044 sf	28	4731 sf	14,345 sf
18	6099 sf	16,750 sf	29	4811 sf	15,577 sf
19	3863 sf	11,941 sf	30	4759 sf	16,510 sf
20	4623 sf	14,506 sf	31	4554 sf	16,752 sf
21	5518 sf	15,945 sf	32	4395 sf	16,868 sf
22	4489 sf	11,762 sf	33	5780 sf	31,315 sf
23	4543 sf	13,249 sf	34	4658 sf	20,425 sf
24	4546 sf	12,208 sf	35	4841 sf	17,930 sf

LEGEND

- BOUNDARY LINE (SUBJECT PARCELS)
- BOUNDARY LINE (OTHER)
- N/F — NOW OR FORMERLY
- 35200/356 — BOOK AND PAGE NUMBER
- STONE MONUMENT TO BE SET
- IRON ROD TO BE SET WITH SURVEYOR I.D. CAP
- IRON ROD FOUND (PHASE 1)
- EXISTING HYDRANT
- EXISTING TREE LINE
- WETLAND AREA (SEE NOTE 17)

NOTES

1) ALL BEARINGS REFER TO GRID NORTH AS OBSERVED BY ST. CLAIR ASSOCIATES AND SHOWN ON THEIR ENTITLED "EXISTING CONDITIONS PLAN, STILLWATER PINES SUBDIVISION, PHASE 2", DATED JANUARY 13, 2023.

2) ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

3) OWNER OF RECORD - A.H. GROVER, INC.
DEED REFERENCE - BOOK 39,951, PAGE 269
TAX MAP 44, LOT 32-1112 (PHASE 2)

4) PARCEL AREAS -
PHASE 2 SUBDIVISION = 36.29± ACRES
PARCEL TO BE CONVEYED TO TOWN OF GRAY = 12.82± ACRES

5) THE PERIMETER BOUNDARIES OF PHASE 2 WERE TAKEN FROM A PLAN ENTITLED "FINAL PLAN - STILLWATER PINES SUBDIVISION", DATED JULY 2021, RECORDED AT SAID REGISTRY IN PLAN BOOK 221, PAGE 432. THIS SURVEY CERTIFICATION EXTENDS ONLY TO THE CREATION OF THE PARCELS WITHIN THOSE PERIMETER BOUNDARIES.

6) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY PANEL #230048 0015A, EFFECTIVE DATE JANUARY 6, 1982.

7) PARCEL IS LOCATED IN THE MEDIUM DENSITY DISTRICT.
MIN. LOT AREA = 30,000 sf, MIN. FRONTAGE = 100', MIN. LOT WIDTH = 100'
BUILDING SETBACKS - FRONT = 35', SIDE & REAR = 15'

8) THESE LOTS ARE TO BE SERVICED BY PUBLIC WATER AND INDIVIDUAL ON-SITE SEPTIC SYSTEMS.

9) THERE ARE NO AREAS WITHIN THIS PROPERTY THAT ARE LISTED OR ELIGIBLE TO BE LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES.

10) WOODCOCK ROAD AND STILLWATER DRIVE ARE TO REMAIN PRIVATE ROADS.

11) ALL ROADS IN THIS SUBDIVISION SHALL REMAIN PRIVATE ROADS TO BE MAINTAINED BY THE DEVELOPER OR THE LOT OWNERS AND SHALL NOT BE ACCEPTED OR MAINTAINED BY THE TOWN EXCEPT FOR ROADS THAT MEET THE REQUIREMENTS FOR WINTER MAINTENANCE UNDER A PUBLIC EASEMENT. ROAD STRIPING IS CONSIDERED TO BE A PART OF THE ROAD MAINTENANCE.

12) REFERENCE IS MADE TO ROADWAY AND SITE DEVELOPMENT PLANS FOR STILLWATER PINES, PHASE 2, PREPARED BY SJR ENGINEERING, INC.

13) SEE THE STILLWATER PINES HOMEOWNERS ASSOCIATION DOCUMENTS FOR THE FUTURE MAINTENANCE OF WOODCOCK DRIVE AND THE ASSOCIATED STORMWATER INFRASTRUCTURE AND TRAIL SYSTEM.

14) LOT USES IN THIS RESIDENTIAL OPEN SPACE SUBDIVISION ARE LIMITED TO THOSE SINGLE-FAMILY RESIDENTIAL USES THAT ARE PERMITTED IN THE ZONING ORDINANCE.

15) ONLY ONE SINGLE-FAMILY DUELLING SHALL BE PERMITTED ON EACH INDIVIDUALLY OWNED LOT. ACCESSORY APARTMENTS ARE SPECIFICALLY PROHIBITED IN RESIDENTIAL OPEN SPACE SUBDIVISIONS.

16) USE OF COMMON OPEN SPACE IS LIMITED TO USES SPECIFIED IN SECTION 401.13.13 OF THE GRAY SUBDIVISION ORDINANCE.

17) WETLAND DELINEATION AND LOCATION WAS DETERMINED BY MARK HAMPTON ASSOCIATES, INC. IN 2021.

18) BUILDING AREAS FOR LOTS 14-16 ARE WITHIN THE 250' VERNAL POOL SETBACK. MAINE D.E.P. REQUIRES THAT 75% OF THE LAND AREA WITHIN THIS SETBACK REMAINS UNDISTURBED.

TOTAL LAND AREA WITHIN THE SETBACK	= 248,846 sf
75% NO DISTURBANCE REQUIREMENT	= 186,634 sf
PHASE 1 - NO DISTURBANCE (BLD SETBACKS & WETLAND)	= 103,609 sf
PHASE 2 - REQUIRED NO DISTURBANCE	= 83,025 sf

19) A MAINE D.E.P. SITE LOCATION OF DEVELOPMENT PERMIT IS REQUIRED FOR THIS PROJECT. AN NRPA PERMIT IS REQUIRED FOR LAND DISTURBANCE WITHIN 25' OF A WETLAND AND WITHIN 250' OF THE SIGNIFICANT VERNAL POOL, BOTH OF WHICH ARE SHOWN ON THIS PLAN. BUILDING WINDOWS SHOWN ON THIS PLAN MAY BE MODIFIED WITH APPROPRIATE PERMITS.

20) LOTS ON THIS PLAN SHALL NOT BE FURTHER SUBDIVIDED.

21) ONE STREET TREE (1½"-2" DBH, FLOWERING PEAR OR LILAC) SHALL BE PLANTED ALONG FRONTAGE OF EACH LOT (14 THROUGH 35).

22) PER THE CZA (PROVISION #10), TRAILS ARE TO BE OPEN TO THE PUBLIC.

23) ROOF DRIP EDGE INFILTRATION IS REQUIRED FOR EACH HOUSE/GARAGE ON EACH LOT.

WAIVERS GRANTED

- PHOSPHORUS MANAGEMENT PLAN (SECTION 401.7.3.D)
- HIGH-INTENSITY SOIL SURVEY (SECTION 401.7.4.A)

SCALE : 1" = 100'

0 50 100 200 300 400

RECORDING DATA

CUMBERLAND COUNTY
REGISTRY OF DEEDS

RECEIVED _____

AT _____ h. _____ m. _____ M.

RECORDED IN

PLAN BOOK _____ PAGE _____

ATTEST _____
REGISTRAR

APPROVAL

APPROVED BY THE TOWN OF GRAY PLANNING BOARD

_____ _____

_____ _____

_____ _____

_____ _____
CHAIRMAN

_____
DATE

PRELIMINARY
SEE NOTE 1

REV:	BY:	DATE:	CHANGES:
5	SJR	8-15-2023	ADJUST LOT 21 AND STORMWATER EASEMENT
4	SJR	7-27-2023	SHOW BUILDING WINDOWS PER TOWN REVIEW COMMENTS
3	SJR	7-15-2023	PER PLANNING AND PLANNING BOARD COMMENTS
2	SJR	7-8-2023	PEER TOWN REVIEW COMMENTS
1	SJR	6-16-2023	SUBMITTED FOR PLANNING BOARD REVIEW

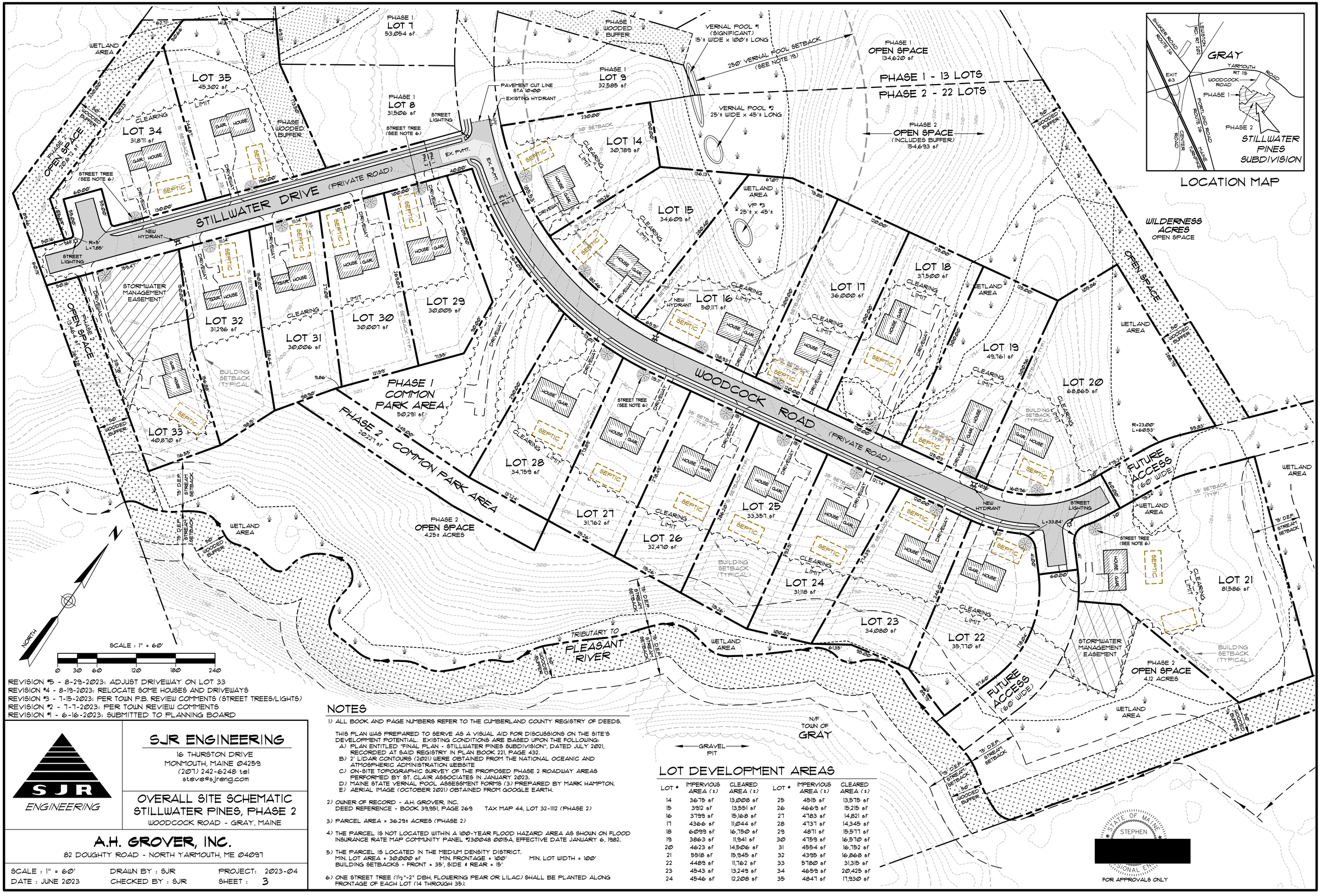
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SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel
steve@sjreng.com

SUBDIVISION PLAN
STILLWATER PINES, PHASE 2
WOODCOCK DRIVE, GRAY, MAINE
OWNER OF RECORD
A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

DATE	PROJECT
JUNE 2023	2022-12
DRAWN BY	SCALE
SJR	1" = 100'

SHEET 2



LOCATION MAP

REVISION #5 - 8-29-2023: ADJUST DRIVEWAY ON LOT 33
REVISION #4 - 8-19-2023: RELOCATE SOME HOUSES AND DRIVEWAYS
REVISION #3 - 7-15-2023: PER TOWN P.B. REVIEW COMMENTS (STREET TREES/LIGHTS)
REVISION #2 - 7-7-2023: PER TOWN REVIEW COMMENTS
REVISION #1 - 6-16-2023: SUBMITTED TO PLANNING BOARD

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   B) 2' LIDAR CONTOURS (2021) WERE OBTAINED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION WEBSITE
   C) ON-SITE TOPOGRAPHIC SURVEY OF THE PROPOSED PHASE 2 ROADWAY AREAS PERFORMED BY ST. CLAIR ASSOCIATES IN JANUARY 2023.
   D) MAINE STATE VERNAL POOL ASSESSMENT FORMS (3) PREPARED BY MARK HAMPTON.
   E) AERIAL IMAGE (OCTOBER 2021) OBTAINED FROM GOOGLE EARTH.

2) OWNER OF RECORD - A.H. GROVER, INC.
   DEED REFERENCE - BOOK 39,951, PAGE 269 TAX MAP 44, LOT 32-1112 (PHASE 2)

3) PARCEL AREA = 36.29± ACRES (PHASE 2)

4) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY PANEL #230048 0015A, EFFECTIVE DATE JANUARY 6, 1982.

5) THE PARCEL IS LOCATED IN THE MEDIUM DENSITY DISTRICT.
   MIN. LOT AREA = 30,000 sf MIN. FRONTAGE = 100' MIN. LOT WIDTH = 100'
   BUILDING SETBACKS - FRONT = 35', SIDE & REAR = 15'

6) ONE STREET TREE (1½"-2" DBH, FLOWERING PEAR OR LILAC) SHALL BE PLANTED ALONG FRONTAGE OF EACH LOT (14 THROUGH 35).

LOT DEVELOPMENT AREAS

LOT #	IMPERVIOUS AREA (±)	CLEARED AREA (±)	LOT #	IMPERVIOUS AREA (±)	CLEARED AREA (±)
14	3675 sf	13,008 sf	25	4515 sf	13,575 sf
15	3912 sf	13,551 sf	26	4669 sf	15,215 sf
16	3799 sf	15,168 sf	27	4783 sf	14,821 sf
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18	6099 sf	16,750 sf	29	4871 sf	15,577 sf
19	3863 sf	11,941 sf	30	4759 sf	16,570 sf
20	4623 sf	14,506 sf	31	4554 sf	16,752 sf
21	5518 sf	15,945 sf	32	4395 sf	16,868 sf
22	4489 sf	11,762 sf	33	5780 sf	31,315 sf
23	4543 sf	13,249 sf	34	4659 sf	20,425 sf
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SJR ENGINEERING
ENGINEERING
16 THURSTON DRIVE
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steve@sjreng.com

OVERALL SITE SCHEMATIC STILLWATER PINES, PHASE 2

WOODCOCK ROAD - GRAY, MAINE

A.H. GROVER, INC.

82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

SCALE : 1" = 60' DRAWN BY : SJR PROJECT: 2023-04
DATE : JUNE 2023 CHECKED BY : SJR SHEET : 3

STATE OF MAINE
STEPHEN
[redacted]
PROFESSIONAL ENGINEER
FOR APPROVALS ONLY

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- D) MAINE STATE VERNAL POOL ASSESSMENT FORMS (3) PREPARED BY MARK HAMPTON.
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2) OWNER OF RECORD - A.H. GROVER, INC.
DEED REFERENCE - BOOK 39,951, PAGE 265
TAX MAP 44, LOT 32-112 (PHASE 2)

3) PARCEL AREA = 36.29± ACRES (PHASE 2)

4) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY PANEL #230048 0015A, EFFECTIVE DATE JANUARY 6, 1982.

5) THE PARCEL IS LOCATED IN THE MEDIUM DENSITY DISTRICT.
MIN. LOT AREA = 30,000 sf MIN. FRONTAGE = 100' MIN. LOT WIDTH = 100'
BUILDING SETBACKS - FRONT = 35', SIDE & REAR = 15'

LEGEND

- BOUNDARY LINE (SUBJECT PARCELS)
- BOUNDARY LINE (OTHER PARCELS)
- N/F — NOW OR FORMERLY
- 1122/184 — BOOK AND PAGE NUMBER
- EXISTING TREELINE
- 356 — EXISTING CONTOUR
- EXISTING PAVED AREA
- WETLAND AREA
- SS-2 — SOIL MAPPING TEST PIT
- SOIL TYPE BOUNDARY
- TP-2 — SOIL MAPPING TEST PIT

SCALE : 1" = 80'
0 40 80 160 240 320

6	SJR	8-19-2023	REVISE LOT 21 AND STORMWATER EASEMENT AREA
5	SJR	7-8-2023	PEER TOWN REVIEW COMMENTS
4	SJR	6-16-2023	SUBMITTED FOR PLANNING BOARD REVIEW
3	SJR	6-2-2023	ADD TEST PITS 43 & 44
2	SJR	5-21-2023	REVISE STORMWATER MANAGEMENT AREAS
1	SJR	3-28-2023	PLACE BUFFER ALONG PLEASANT RIVER TRIBUTARY
REV:	BY:	DATE:	CHANGES:

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SJR ENGINEERING, INC.

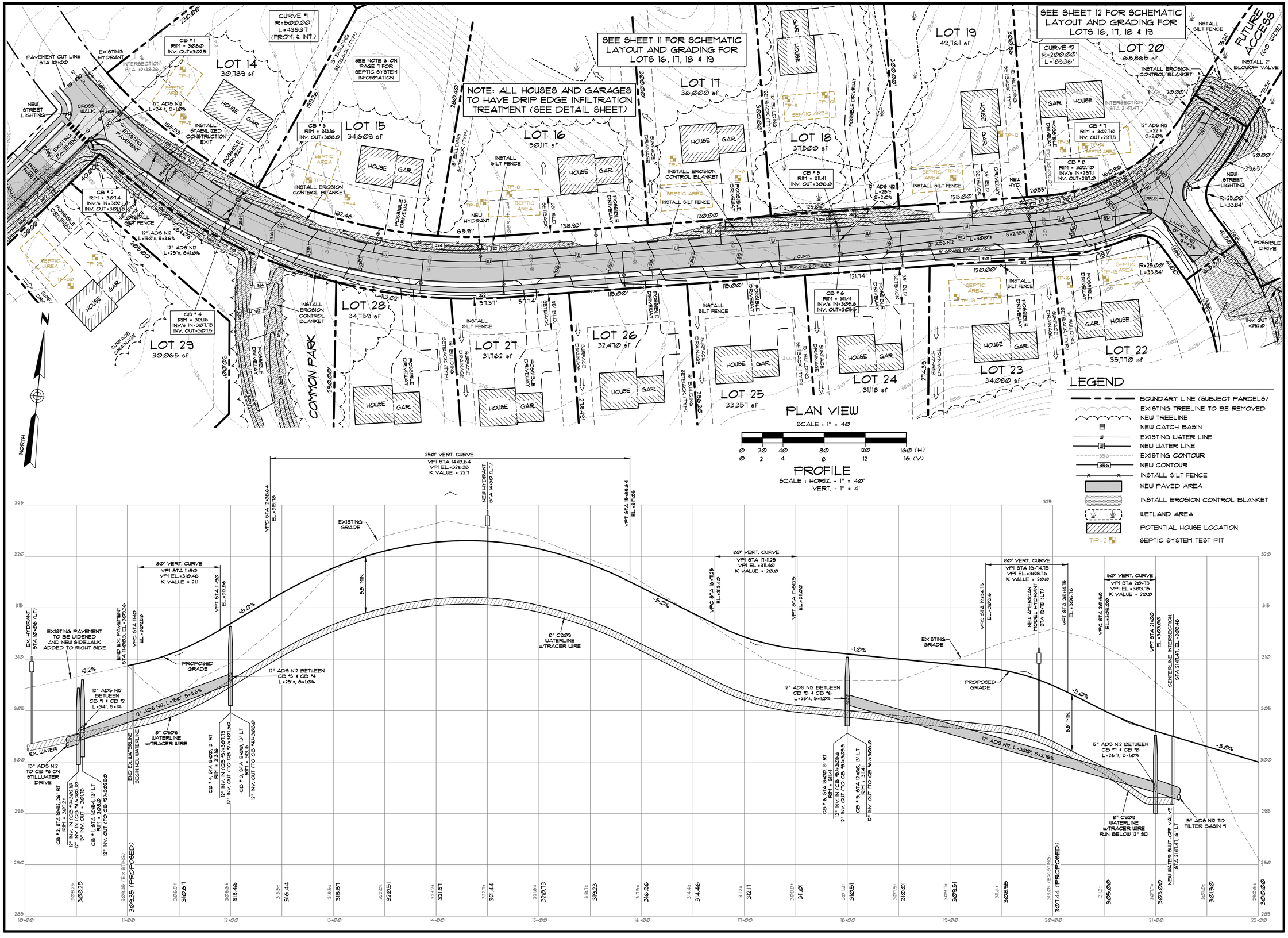
SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONTMOUTH, MAINE 04259
(207) 242-6248 tel & fax
steve@sjreng.com
SJR ENGINEERING

SOILS MAP
STILLWATER PINES, PHASE 2
WOODCOCK DRIVE, GRAY, MAINE

PREPARED FOR
A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

DATE	PROJECT
JUNE 2023	2023-04
DRAWN BY	SCALE
SJR	1" = 80'

SHEET 4



REV:	BY:	DATE:	CHANGES:
4	SJR	8-19-2023	RELOCATE SOME DRIVEWAYS/HOUSES, ADD SURFACE DRAIN ARROWS
3	SJR	7-22-2023	PEER TOWN REVIEW COMMENTS
2	SJR	7-7-2023	PEER TOWN REVIEW COMMENTS
1	SJR	6-16-2023	SUBMITTED FOR PLANNING BOARD REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SJR ENGINEERING, INC.

STATE OF MAINE
STEPHEN J. RICE
#10729
REGISTERED PROFESSIONAL ENGINEER

[redacted]
FOR APPROVALS ONLY

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel & fax
stevesjreng.com
SJR ENGINEERING

PLAN AND PROFILE
WOODCOCK ROAD
STILLWATER PINES SUBDIVISION - GRAY, MAINE
PREPARED FOR
A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

DATE	PROJECT
JUNE 2023	2023-04
DRAWN BY	SCALE
SJR	AS NOTED

SHEET 5

NOTE: ALL HOUSES AND GARAGES TO HAVE DRIP EDGE INFILTRATION TREATMENT (SEE DETAIL SHEET)

LOT 28 34,759 sf

COMMON PARK AREA 50,291 sf

LOT 33 40,870 sf

LOT 32 31,296 sf

LOT 31 30,006 sf

LOT 30 30,007 sf

LOT 29 30,005 sf

LOT 15 34,609 sf

LOT 14 30,789 sf

PHASE 1 LOT 9 32,585 sf

PHASE 1 LOT 8 31,506 sf

LOT 35 45,302 sf

LOT 34 31,871 sf

PHASE 2 OPEN SPACE 20,672 sf

PHASE 2 OPEN SPACE

FILTER BASIN #2B
SURFACE EL.=288.0
SURFACE AREA=2609 sf
BERM EL. = 295.0

FILTER BASIN #2A
SURFACE EL.=288.0
SURFACE AREA=2609 sf
BERM EL. = 295.0

STILLWATER DRIVE

PLAN VIEW
SCALE : 1" = 40'

PROFILE
SCALE : HORIZ. - 1" = 40'
VERT. - 1" = 4'

LEGEND

- BOUNDARY LINE (SUBJECT PARCELS)
- EXISTING TREELINE TO BE REMOVED
- NEW TREELINE
- NEW CATCH BASIN
- EXISTING WATER LINE
- NEW WATER LINE
- EXISTING CONTOUR
- NEW CONTOUR
- INSTALL SILT FENCE
- NEW PAVED AREA
- INSTALL EROSION CONTROL BLANKET
- WETLAND AREA
- POTENTIAL HOUSE LOCATION
- TP-2 SEPTIC SYSTEM TEST PIT

PLAN VIEW
SCALE : 1" = 40'

PROFILE
SCALE : HORIZ. - 1" = 40'
VERT. - 1" = 4'

SITE NOTES

1) ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

THIS PLAN WAS PREPARED TO SERVE AS A VISUAL AID FOR DISCUSSIONS ON THE SITE'S DEVELOPMENT POTENTIAL. EXISTING CONDITIONS ARE BASED UPON THE FOLLOWING:
A) PLAN ENTITLED "FINAL PLAN - STILLWATER PINES SUBDIVISION", DATED JULY 2021, RECORDED AT SIAD REGISTRY IN PLAN BOOK 221, PAGE 432.
B) 2' LIDAR CONTOURS (2021) WERE OBTAINED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION WEBSITE
C) ON-SITE TOPOGRAPHIC SURVEY OF THE PROPOSED PHASE 2 ROADWAY AREAS PERFORMED BY ST. CLAIR ASSOCIATES IN JANUARY 2023.
D) MAINE STATE VERNAL POOL ASSESSMENT FORMS (3) PREPARED BY MARK HAMPTON.
E) AERIAL IMAGE (OCTOBER 2021) OBTAINED FROM GOOGLE EARTH.

2) OWNER OF RECORD - A.H. GROVER, INC.
DEED REFERENCE - BOOK 39,951, PAGE 269
TAX MAP 44, LOT 32-1112 (PHASE 2)

3) PARCEL AREA = 36.29± ACRES (PHASE 2)

4) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY PANEL #230048 0015A, EFFECTIVE DATE JANUARY 6, 1982.

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MIN. LOT AREA = 30,000 sf MIN. FRONTAGE = 100' MIN. LOT WIDTH = 100'
BUILDING SETBACKS - FRONT = 35', SIDE & REAR = 15'

CONSTRUCTION SEQUENCE NOTE

CONTRACTOR SHALL STAKE OUT THE LEVEL LIP SPREADERS IN ADVANCE OF CONSTRUCTING THEM. THE LOCATIONS AND TOPOGRAPHY SHALL BE REVIEWED WITH THE TOWN ENGINEER TO ENSURE THAT THE RUNOFF WILL BE DISPERSED AS SHEET FLOW.

STATE OF MAINE — STEPHEN J. REGAN — 10134 — LICENSED PROFESSIONAL ENGINEER

FOR APPROVALS ONLY

REV:	BY:	DATE:	CHANGES:
5	SJR	8-29-2023	DRIVEWAY ON LOT 33 & LEVEL SPREADER LENGTH LABEL
4	SJR	8-14-2023	RELOCATE SOME DRIVEWAYS/HOUSES, ADD CULVERTS
3	SJR	7-22-2023	PEER TOWN REVIEW COMMENTS
2	SJR	7-7-2023	PEER TOWN REVIEW COMMENTS
1	SJR	6-16-2023	SUBMITTED FOR PLANNING BOARD REVIEW

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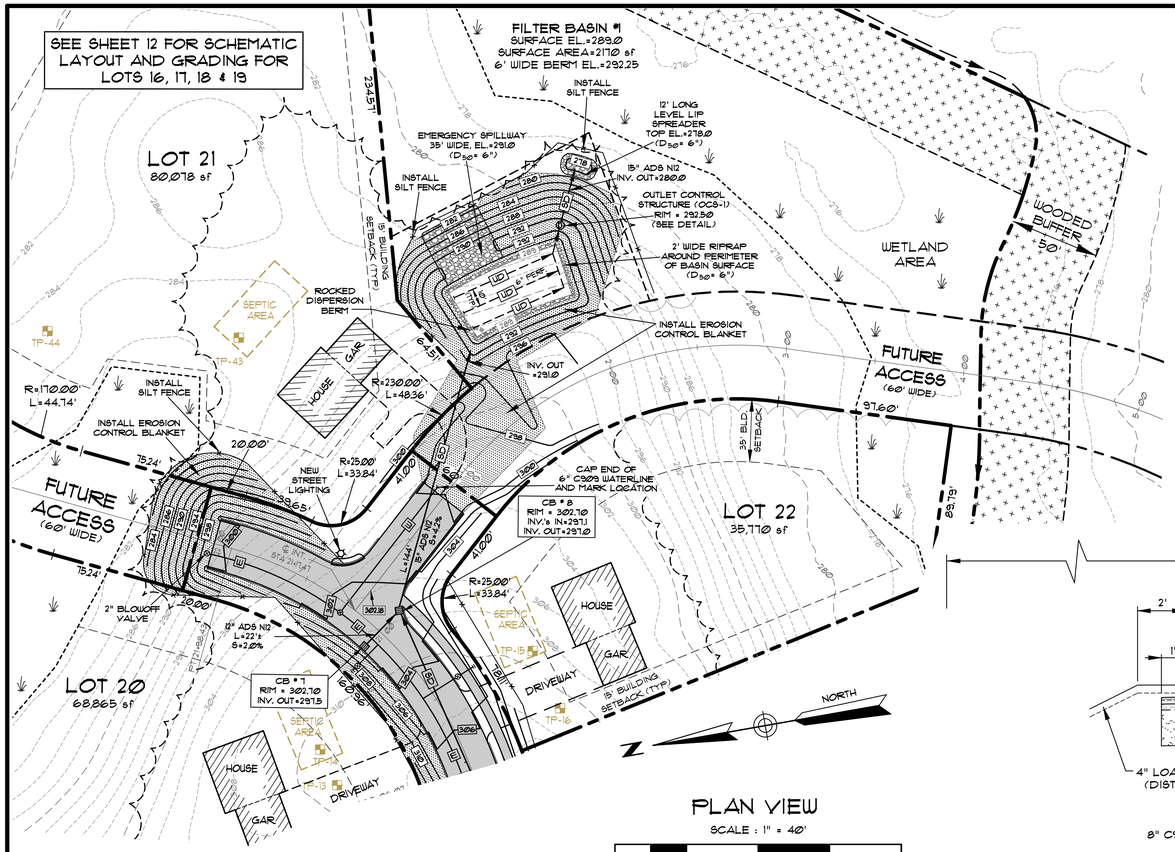
SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel & fax
steves@rjreg.com

PLAN AND PROFILE
STILLWATER DRIVE
STILLWATER PINES SUBDIVISION - GRAY, MAINE

PREPARED FOR
A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

DATE	PROJECT
JUNE 2023	2023-04
DRAWN BY	SCALE
SJR	AS NOTED

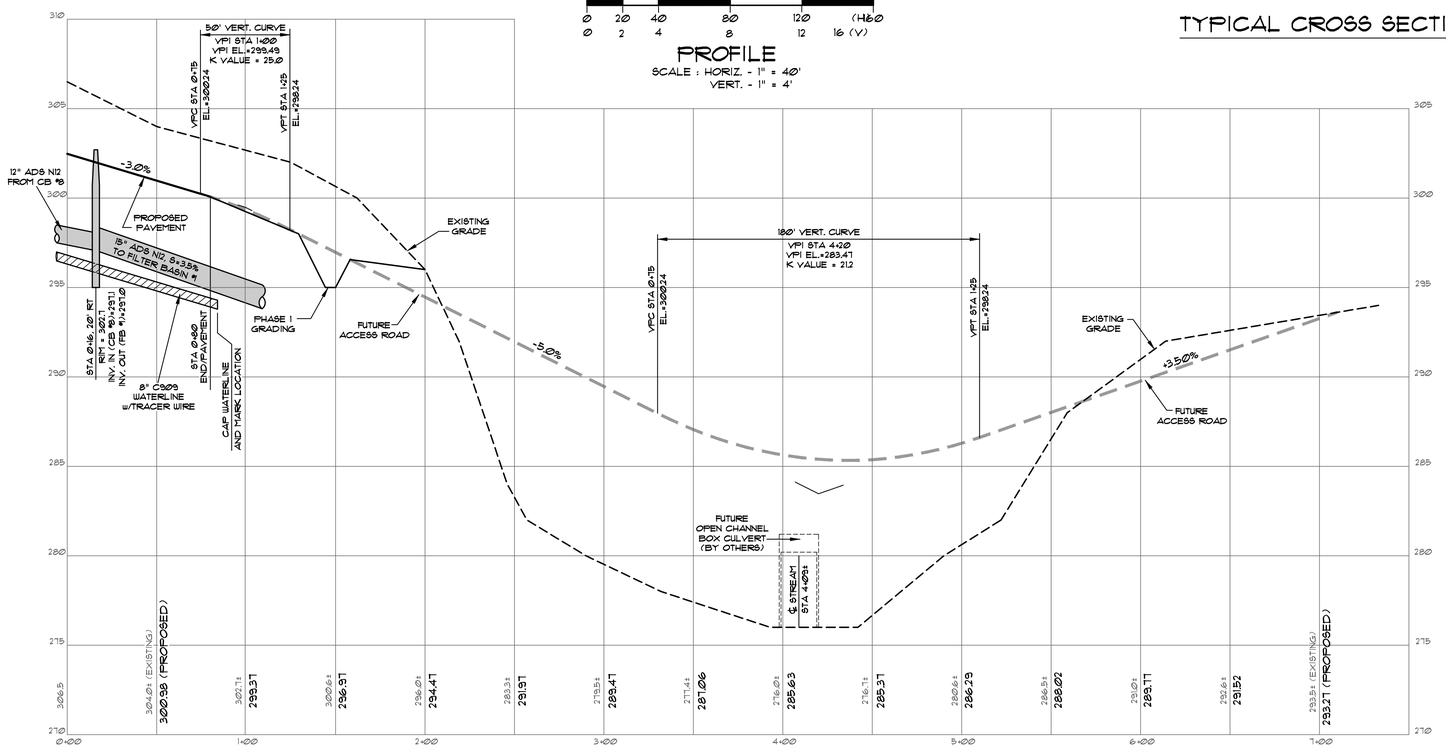
SHEET 6



PLAN VIEW

SCALE : 1" = 40'

0 20 40 80 120 (H&O)
0 2 4 8 12 16 (V)



PROFILE

SCALE : HORIZ. - 1" = 40'
VERT. - 1" = 4'

CONSTRUCTION SEQUENCE NOTE

CONTRACTOR SHALL STAKE OUT THE LEVEL LIP SPREADERS IN ADVANCE OF CONSTRUCTING THEM. THE LOCATIONS AND TOPOGRAPHY SHALL BE REVIEWED WITH THE TOWN ENGINEER TO ENSURE THAT THE RUNOFF WILL BE DISPERSED AS SHEET FLOW.

UTILITIES NOTE

ALL UTILITY CONSTRUCTION AND MATERIALS (WATERLINES, HYDRANTS, CATCH BASINS, ETC) SHALL CONFORM TO THE STANDARDS OF TOWN OF GRAY PUBLIC WORKS DEPARTMENT.

ROADS NOTE

ALL ROADS IN THIS SUBDIVISION SHALL REMAIN PRIVATE ROADS TO BE MAINTAINED BY THE DEVELOPER OR THE LOT OWNERS AND SHALL NOT BE ACCEPTED OR MAINTAINED BY THE TOWN EXCEPT FOR ROADS THAT MEET REQUIREMENTS FOR WINTER MAINTENANCE UNDER A PUBLIC EASEMENT.

OTHER REQUIREMENTS

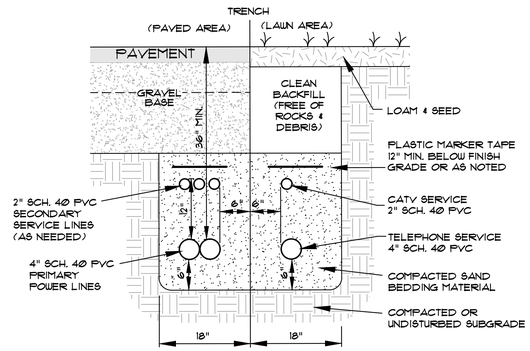
6% MAXIMUM SLOPE FOR PRIVATE DRIVEWAYS WITHIN 30' OF EDGE OF ROAD.

DRIVEWAYS SHALL BE CONSTRUCTED TO NOT DISRUPT THE FLOW OF SURFACE WATER ALONG THE CURB LINE OF THE ROAD.

DRIVEWAYS TO HAVE 10' RADIUS ON EDGE OF PAVEMENT AT ROAD INTERSECTION.

MINIMUM DRIVEWAY CULVERT SIZE IS 15".

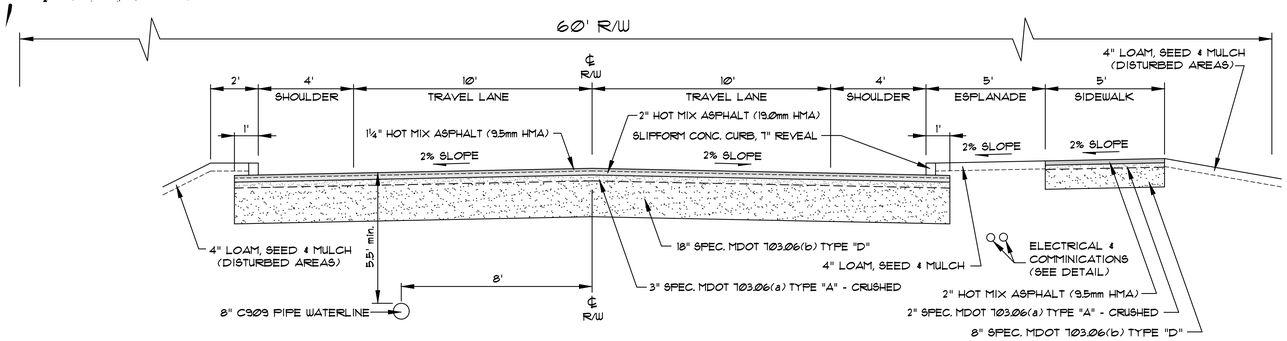
SIDEWALKS TO HAVE 7' LONG TIP DOWNS AT DRIVEWAY AND ROAD INTERSECTIONS.



NOTE: ALL WORK IS TO COMPLY WITH THE RESPECTIVE UTILITY COMPANY STANDARDS

UNDERGROUND ELECTRICAL AND COMMUNICATIONS UTILITY TRENCH

NOT TO SCALE



TYPICAL CROSS SECTION - WOODCOCK ROAD & STILLWATER DRIVE

NOT TO SCALE

LEGEND

- BOUNDARY LINE (SUBJECT PARCELS)
- EXISTING TREELINE TO BE REMOVED
- NEW TREELINE
- NEW CATCH BASIN
- EXISTING WATER LINE
- NEW WATER LINE
- EXISTING CONTOUR
- NEW CONTOUR
- INSTALL SILT FENCE
- NEW PAVED AREA
- INSTALL EROSION CONTROL BLANKET
- WETLAND AREA
- POTENTIAL HOUSE LOCATION
- TP-2 SEPTIC SYSTEM TEST PIT

SITE NOTES

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   BUILDING SETBACKS - FRONT = 35', SIDE & REAR = 15'

6) SEPTIC SYSTEM LOCATIONS SHOWN ARE SCHEMATIC ONLY. EACH SYSTEM WILL BE DESIGNED BY A MAINE LICENSED SITE EVALUATOR. EACH SYSTEM MUST BE A MINIMUM OF 10' FROM A RIGHT OF WAY OR PROPERTY LINE AND 20' FROM THE PROPOSED HOUSE LOCATION.

[redacted]
STATE OF MAINE
STEPHEN J. RIOUX
FOR APPROVALS ONLY

REV.:	DATE:	CHANGES:
4	8-19-2023	RELOCATE SOME DRIVEWAYS/HOUSES, ADD SURFACE DRAIN ARROWS
3	7-22-2023	PEER TOWN REVIEW COMMENTS
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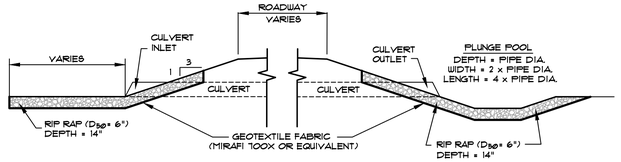
SJR ENGINEERING, INC.
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PLAN AND PROFILE
FUTURE ACCESS (GRAY LAND)
STILLWATER PINES SUBDIVISION - GRAY, MAINE

PREPARED FOR
A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

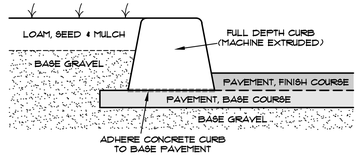
DATE	PROJECT
JUNE 2023	2023-04
DRAWN BY	SCALE
SJR	AS NOTED

SHEET 7



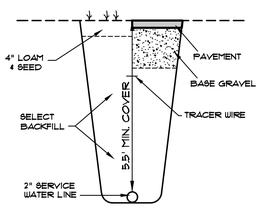
TYPICAL CULVERT INLET & OUTLET DETAIL

NOT TO SCALE



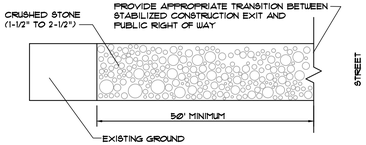
CONCRETE CURB CROSS SECTION

NOT TO SCALE



WATER SERVICE TRENCH DETAIL

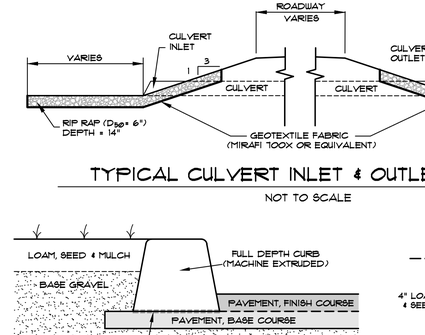
NOT TO SCALE



1. STONE SIZE - AASHTO DESIGNATION M 43, SIZE #2 (2½" - 1½") USE CRUSHED STONE
2. LENGTH - AS EFFECTIVE BUT NOT LESS THAN 50'
3. THICKNESS - NOT LESS THAN 6"
4. WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS
5. WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
6. MAINTENANCE - THE STABILIZED CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.

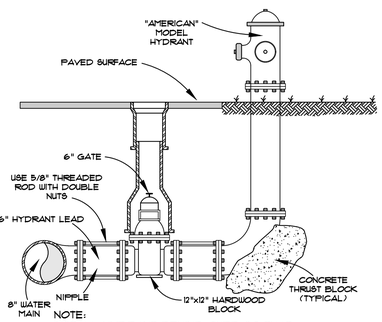
STABILIZED CONSTRUCTION EXIT DETAIL

NOT TO SCALE



4'-0" DIA. CATCH BASIN

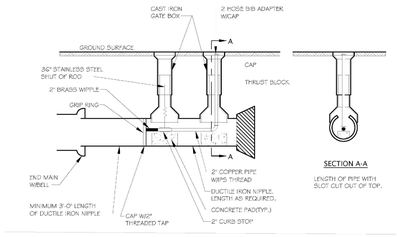
NOT TO SCALE



NOTE:
INSTALL HYDRANT BEHIND CURB SO THAT
NO PART OF HYDRANT EXTENDS BEYOND CURB.

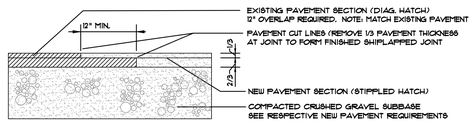
HYDRANT DETAIL

NOT TO SCALE



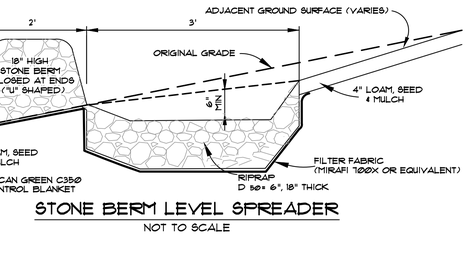
TYPICAL BLOW-OFF DETAIL

NOT TO SCALE



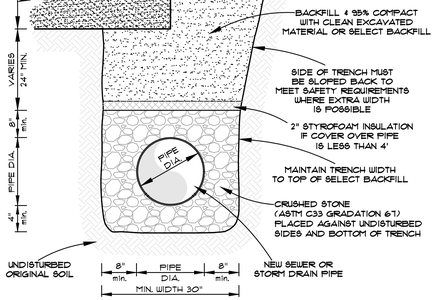
PAVEMENT SAWCUT JOINT DETAIL

NOT TO SCALE



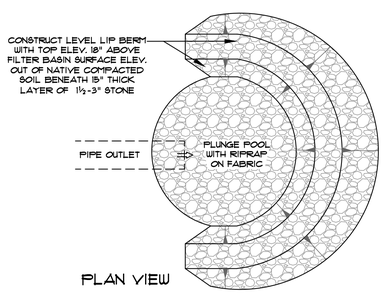
STONE BERM LEVEL SPREADER

NOT TO SCALE



STORM DRAIN TRENCH DETAIL

NOT TO SCALE



PLAN VIEW

DISPERSION BERM DETAIL

NOT TO SCALE

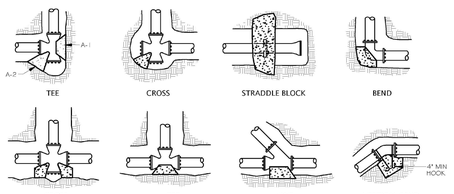
(HORIZONTAL) BEARING AREA OF THRUST BLOCKS IN SQUARE FEET

FITTING SIZE	TEE, WYE, DEAD END AND HYDRANT	STRADDLE BLOCK	90D BEND PLUGGED CROSS	TEE PLUGGED ON RUN A-1	TEE PLUGGED ON RUN A-2	45D BEND	22-1/2D BEND	11-1/4D BEND
4	1.0	1.6	1.4	1.9	1.4	1.0	---	---
6	2.1	3.7	3.0	4.3	3.0	1.6	1.0	---
8	3.6	6.5	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	10.2	8.4	11.6	8.4	4.6	2.4	1.2
12	8.5	14.7	12.0	17.0	12.0	6.6	3.4	1.7
14	11.5	---	16.3	23.0	16.3	8.9	4.6	2.3
16	15.0	26.1	21.3	30.0	21.3	11.6	6.0	3.0
18	19.0	---	27.0	38.0	27.0	14.6	7.6	3.8
20	23.5	40.8	33.3	47.0	33.3	18.1	9.4	4.7
24	34.0	58.8	48.0	68.0	48.0	26.2	13.6	6.8

(VERTICAL) VOLUME OF THRUST BLOCK IN CUBIC YARDS

90D BEND	45D BEND	22-1/2D BEND	11-1/4D BEND
---	---	---	---
---	---	---	---
1.3	---	---	---
2.3	1.1	---	---
3.7	1.8	---	---
5.5	2.8	1.2	---
7.6	3.9	1.7	---
9.9	5.1	2.3	0.9
---	---	---	---
---	---	---	---
---	---	---	---

NOTES:
1. ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:
BEARING AREA = (TEST PRESSURE / 150) x (2000 / SOIL BEARING STRESS) x (TABLE VALUE)
2. ABOVE VOLUMES BASED ON TEST PRESSURE OF 150 PSI AND THE WEIGHT OF CONCRETE = 4050 POUNDS PER CUBIC YARD. TO COMPUTE FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION:
VOLUME = (TEST PRESSURE / 150) x (TABLE VALUE)

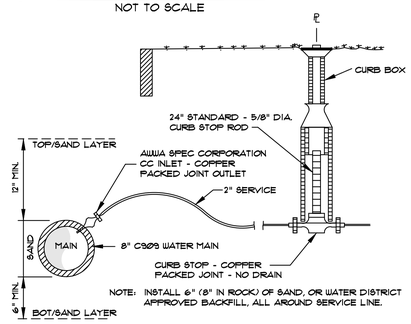


NOTES:
1. CONCRETE BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. ALL CONCRETE TO BE CLASS 2400 MINIMUM.
3. INSTALL ISOLATION MATERIAL BETWEEN PIPE AND/OR FITTINGS BEFORE POURING CONCRETE BLOCKING.
4. CONCRETE SHALL BE KEPT CLEAR OF ALL JOINTS AND ACCESSORIES.
5. TIE RODS SHALL BE CORPORATED GALVANIZED COLD ROLLED STEEL, 40,000 PSI TENSILE STRENGTH.

RODS FOR VERTICAL BENDS		
FITTING SIZE	ROD SIZE	EMBEDMENT
12" AND LESS	#6	30"
14"-16"	#8	36"

THRUST BLOCKING DETAIL

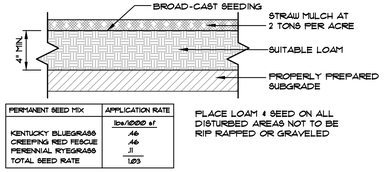
NOT TO SCALE



NOTE: INSTALL 6" (8" IN ROCK) OF SAND, OR WATER DISTRICT APPROVED BACKFILL, ALL AROUND SERVICE LINE.

TYPICAL DOMESTIC WATER SERVICE

NOT TO SCALE

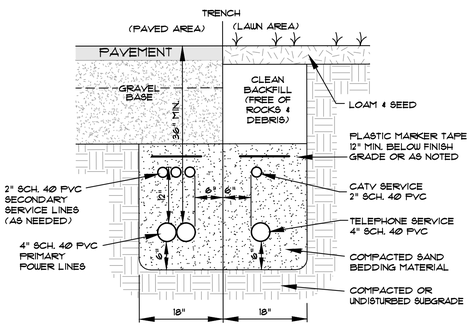


PERMANENT SEED MIX	APPLICATION RATE
	lbs/1000 sf
KENTUCKY BLUEGRASS	.46
CREEPING RED FESCUE	.46
PERENNIAL RYEGRASS	.11
TOTAL SEED RATE	1.03

PLACE LOAM & SEED ON ALL DISTURBED AREAS NOT TO BE RIP RAPPED OR GRAVELED

LOAM & SEED DETAIL

NOT TO SCALE



NOTE: ALL WORK IS TO COMPLY WITH THE RESPECTIVE UTILITY COMPANY STANDARDS

UNDERGROUND UTILITY TRENCH DETAIL

NOT TO SCALE

GENERAL NOTES

1) SEE SHEET 1 FOR SITE SPECIFIC NOTES.

2) THE CONTRACT WORK TO BE PERFORMED ON THIS PROJECT CONSISTS OF FURNISHING ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, IMPLEMENTS, PARTS AND SUPPLIES NECESSARY FOR OR APPURTENANT TO, THE INSTALLATION OF CONSTRUCTION IMPROVEMENTS IN ACCORDANCE WITH THESE DRAWINGS AND AS FURTHER ELABORATED IN ANY ACCOMPANYING SPECIFICATIONS.

3) THE WORK SHALL BE PERFORMED IN A THOROUGH WORKMANLIKE MANNER. ALL CONTRACTORS TO CONFORM TO ALL APPLICABLE OSHA STANDARDS. ANY REFERENCE TO A SPECIFICATION OR DESIGNATION OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, FEDERAL SPECIFICATIONS, OR OTHER STANDARDS, CODES OR ORDERS, REFERS TO THE MOST RECENT OR LATEST SPECIFICATION OR DESIGNATION.

4) ALL CONSTRUCTION WITHIN THE TOWN OF GRAY RIGHT OF WAY SHALL COMPLY WITH TOWN PUBLIC WORKS STANDARDS. ALL UTILITY CONSTRUCTION SHALL CONFORM TO RESPECTIVE UTILITY STANDARDS.

5) THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY THE TOWN OF GRAY PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE TOWN OF GRAY AND/OR MDOT, REQUIRED TO PERFORM ALL THE WORK (STREET OPENINGS, BUILDING PERMIT, ETC.). THE CONTRACTOR SHALL POST ALL BONDS AS REQUIRED, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.

6) PRIOR TO CONSTRUCTION, THE SITE CONTRACTOR IS TO INFORM ALL AREA UTILITY COMPANIES AND GOVERNMENTAL AGENCIES OF PLANNED CONSTRUCTION. THE SITE CONTRACTOR IS REQUIRED TO CONTACT DIG-SAFE (811) AT LEAST 3 BUSINESS DAYS PRIOR TO ANY EXCAVATION TO VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY LOCATIONS.

7) THE PROJECT DRAWINGS ARE GENERALLY SCHEMATIC AND INDICATE THE POSSIBLE LOCATION OF EXISTING UNDERGROUND UTILITIES. INFORMATION ON EXISTING UTILITIES HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY MAPS, MUNICIPAL RECORD MAPS, AND FIELD SURVEY. IT IS NOT GUARANTEED TO BE CORRECT OR COMPLETE. UTILITIES ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING SERVICES, WHEN THOSE SERVICES ARE TO BE LEFT IN PLACE. THE CONTRACTOR IS TO PROVIDE ADEQUATE MEANS OF SUPPORT AND PROTECTION DURING THE EXCAVATING AND BACKFILLING OPERATIONS. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED UTILITIES BE FOUND, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH THE WORK IN THIS AREA.

8) OSHA REGULATIONS MAKE IT UNLAWFUL TO OPERATE CRANES, BOOMS, HOISTS, ETC. WITHIN TEN FEET (10') OF ANY ELECTRIC LINE. IF THE CONTRACTOR MUST OPERATE CLOSER THAN 10', THE CONTRACTOR MUST CONTACT THE POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS BEFORE ENCROACHING ON THIS REQUIREMENT.

9) IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLANS, APPROVALS, AND DETAILS FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL THE SITE CONDITIONS IN THE FIELD AND CONTACT THE DESIGN ENGINEER IF THERE ARE ANY DISCREPANCIES REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT AN APPROPRIATE REVISION CAN BE MADE PRIOR TO BIDDING.

10) ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED IN WRITING BY THE OWNER, DESIGN ENGINEER, AND APPROPRIATE GOVERNMENTAL AGENCY PRIOR TO INSTALLATION.

11) THE CONTRACTOR SHALL RESTORE ALL UTILITY STRUCTURES, PIPE, UTILITIES, PAVEMENT, CURBS, SIDEWALKS, AND LANDSCAPED AREAS DISTURBED BY CONSTRUCTION TO AS GOOD AS BEFORE BEING DISTURBED AS DETERMINED BY THE TOWN OF MANCHESTER CEO. ANY DAMAGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

12) TRAFFIC CONTROL MEASURES SHALL BE UTILIZED IN ACCORDANCE WITH MAINE DOT STANDARDS. THE CONTRACTOR SHALL PROVIDE, MAINTAIN AND PROTECT TRAFFIC CONTROL DEVICES TO THE EXTENT REQUIRED BY LAW FOR THE PROTECTION OF THE PUBLIC CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, AND UNIFORMED TRAFFIC CONTROL PERSONNEL AS REQUIRED OR ORDERED BY THE DESIGN ENGINEER OR CODE ENFORCEMENT PERSONNEL. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC LANES AND PEDESTRIAN WALKWAYS AT ALL TIMES UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE TOWN. PAVEMENT MARKINGS SHALL BE FAST DRYING TYPE IN ACCORDANCE WITH MDOT SPECIFICATIONS. TWELVE INCH (12") WIDE STOP BAR AND FOUR INCH (4") WIDE STRIPES SHALL BE LOCATED AS SHOWN ON THE PLANS.

13) THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL PRODUCT, MATERIALS AND PLANT SPECIFICATIONS TO THE OWNER AND DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 10 WORKING DAYS FOR REVIEW.

14) THE CONTRACTOR SHALL RETAIN AN INDEPENDENT TESTING LABORATORY FOR SOIL AND PAVEMENT MATERIALS AND COMPACTION TESTING AT NO COST TO THE OWNER. RESULTS OF THE TESTING ARE TO BE SUPPLIED TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS ASSOCIATED WITH ANY RECONSTRUCTION AND RE-TESTING OF UNSATISFACTORY SOILS.

15) ALL EXCAVATION SHALL BE BACKFILLED TO EXISTING GRADE BEFORE THE END OF THE DAY OR ADEQUATELY PROTECTED FROM DANGER TO HUMANS AND ANIMALS.

16) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE OWNER WILL PROVIDE A BENCH MARK AT THE CONSTRUCTION SITE FROM WHICH TO BEGIN LAYOUT.

17) THE CONTRACTOR SHALL FURNISH ELECTRICAL POWER, WATER, AND SANITARY FACILITIES FOR HIS EXCLUSIVE USE AT THE CONSTRUCTION SITE SHOULD THE CONTRACTOR DEEM THIS ESSENTIAL FOR THE PROPER PERFORMANCE OF THE CONTRACT.

18) WORK MAY PROGRESS MONDAY THROUGH SATURDAY 7:00 AM TO 7:00 PM. WORK AT OTHER TIMES MAY PROCEED UPON WRITTEN APPROVAL BY THE OWNER AND THE TOWN OF GRAY. THE CONTRACTOR SHALL BE REQUIRED TO CONFORM WITH ALL RULES AND REGULATIONS SET FORTH IN THE CITY LAND USE ORDINANCE REGULATIONS.

19) THE CONTRACTOR SHALL GUARANTEE THE FAITHFUL REMEDY OF ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP AND GUARANTEES PAYMENT FOR ANY RESULTING DAMAGE WHICH SHALL APPEAR WITHIN A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.

20) THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.

21) A PRE-CONSTRUCTION CONFERENCE WITH THE OWNER, DESIGNERS, TOWN OFFICIALS AND CONTRACTOR SHALL BE REQUIRED BEFORE ANY CONSTRUCTION OCCURS ON THE PROJECT. DURING CONSTRUCTION, THERE SHALL BE WEEKLY PROGRESS MEETINGS WITH THE OWNER (ON SITE OR TELECONFERENCE) UNTIL PROJECT COMPLETION.

22) PROPER IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES ARE OF PARAMOUNT IMPORTANCE FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ONSITE INSPECTIONS OF THE OWNER, THEIR REPRESENTATIVES, OR STATE/LOCAL/ FEDERAL INSPECTORS AT NO ADDITIONAL COST TO THE OWNER.

23) ALL MATERIAL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULES BASED UPON PLAN REVIEWALL SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING THE WORK. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO MDOT STANDARD SPECIFICATIONS, LATEST REVISION.

GRADING AND DRAINAGE NOTES

1) UNLESS OTHERWISE NOTED, STORM DRAIN PIPE SHALL BE IN ACCORDANCE WITH MDOT SPECIFICATIONS SECTION 603 PIPE CULVERTS AND STORM DRAINS, LATEST REVISION WITH THE EXCEPTION THAT THE ONLY ACCEPTABLE TYPES OF PIPE ARE AS FOLLOWS: REINFORCED CONCRETE PIPE, HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE.

2) HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE (SICP) MAY ONLY BE USED FOR PIPE SIZES 48" DIAMETER AND SMALLER.

3) TOPSOIL STRIPPED IN AREAS OF CONSTRUCTION THAT IS SUITABLE FOR REUSE AS LOAM SHALL BE STOCKPILED ON SITE AT A LOCATION TO DESIGNATED BY THE OWNER. UNSUITABLE SOIL SHALL BE SEPARATED, REMOVED AND DISPOSED OF AT AN APPROVED DISPOSAL LOCATION OFFSITE.

4) ALL EXISTING STRUCTURES, FENCING, TREES, ETC., WITHIN THE CONSTRUCTION AREA, UNLESS OTHERWISE NOTED TO REMAIN, SHALL BE REMOVED AND DISPOSED OF OFFSITE. ANY BURNING ONSITE SHALL BE SUBJECT TO TO LOCAL ORDINANCES AND PROJECT SPECIFICATIONS.

5) THE SITE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES HAVING UNDERGROUND PIPING ON-SITE OR IN THE RIGHT OF WAY PRIOR TO EXCAVATION. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING COMPANY AND LOCATE ALL UTILITIES PRIOR TO GRADING/EXCAVATION START.

6) SITE EXCAVATION AND FILL-IN-PLACE TO ESTABLISH THE DESIRED SUB-GRADE SHALL BE SCHEDULED SUCH THAT EROSION CONTROL PRACTICES ARE IN PLACE AND FUNCTIONING DOWN-GRADIENT OF THE EARTHWORK PRIOR TO THE START OF EARTHMOVING ACTIVITIES.

7) BASED ON FEMA MAPPING, NO AREA WITHIN THE SITE BOUNDARIES IS IN THE 100 YEAR FLOOD PLAIN.

LAYOUT NOTES

1) ALL SIGNS INDICATED ON THE PLANS ARE TO MEET ALL REQUIREMENTS AND STANDARDS OF THE MDOT AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

2) PROPERTY LINE AND RIGHT OF WAY MONUMENTS SHALL NOT BE DISTURBED BY CONSTRUCTION. IF DISTURBED, THEY SHALL BE RESET TO THEIR ORIGINAL LOCATIONS AT THE CONTRACTORS EXPENSE BY A MAINE PROFESSIONAL LAND SURVEYOR.

STATE OF MAINE — STEPHEN — LICENSED PROFESSIONAL ENGINEER — FOR APPROVALS ONLY

REV.:	DATE:	CHANGES:
4	8/29/2023	UPDATE TO DISPERSION BERM DETAIL PER REVIEWER.
3	8/19/2023	ADD DISPERSION BERM DETAIL
2	7-8-2023	PER TOWN REVIEW COMMENTS (LEVEL SPREADER)
1	6/6/2023	SUBMITTED FOR PLANNING BOARD REVIEW

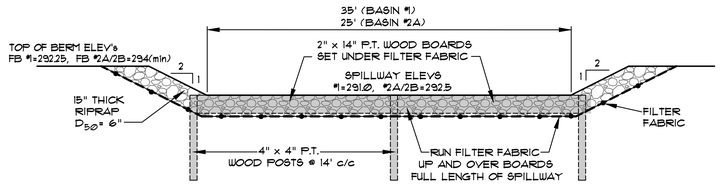
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SJR ENGINEERING, INC.

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel & fax
steve@sjreng.com

CONSTRUCTION NOTES & DETAILS
STILLWATER DRIVE
STILLWATER PINES SUBDIVISION - GRAY, MAINE
PREPARED FOR
A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

DATE	PROJECT
JUNE 2023	2023-04
DRAWN BY	SCALE
SJR	AS NOTED

SHEET 8



FILTER BASIN
EMERGENCY SPILLWAY DETAIL

NOT TO SCALE

STORMWATER CONSTRUCTION OVERSIGHT NOTES

THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES TO BE BUILT AS PART OF THIS PROJECT. IF NECESSARY, THE INSPECTING ENGINEER WILL INTERPRET THE CONSTRUCTION PLANS FOR THE CONTRACTOR. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER SHALL NOTIFY THE TOWN OF MANCHESTER AND THE DEPARTMENT OF ENVIRONMENTAL PROTECTION IN WRITING WITHIN 30 DAYS TO STATE THAT THE STRUCTURES HAVE BEEN COMPLETED. ACCOMPANYING THE ENGINEER'S NOTIFICATION SHALL BE A COPY OF THE TEST RESULTS FOR ANY SOIL FILL, AGGREGATE OR MULCH MATERIALS USED IN THE CONSTRUCTION OF THE STORMWATER MANAGEMENT STRUCTURES AND A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION AND THE TIME INSPECTED ON EACH VISIT.

VEGETATED UNDERDRAINED SOIL FILTER BASINS

CONSTRUCTION INSPECTIONS - AT A MINIMUM, THE PROFESSIONAL ENGINEER'S INSPECTION SHALL OCCUR AFTER FOUNDATION SOIL PREPARATION BUT PRIOR TO PLACEMENT OF THE EMBANKMENT FILL, AFTER THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED, AFTER THE PIPE BEDDING IS PLACED BUT PRIOR TO THE PLACEMENT OF THE FILTER MEDIA, AND AFTER THE FILTER MEDIA HAS BEEN PLACED AND THE FILTER SURFACE SEEDED.

TESTING AND SUBMITTALS - ALL THE SOIL, MULCH, AND AGGREGATE USED FOR THE CONSTRUCTION OF THE VEGETATED UNDERDRAINED SOIL FILTER BASIN SHALL BE CONFIRMED AS SUITABLE BY TESTING. THE CONTRACTOR SHALL IDENTIFY THE SOURCE OF EACH MATERIAL AND OBTAIN SAMPLES FROM EACH MATERIAL FOR TESTING. ALL TESTING SHALL BE DONE BY A CERTIFIED LABORATORY. ALL RESULTS OF FIELD AND LABORATORY TESTING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR CONFIRMATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLETION OF THE FOLLOWING SAMPLING AND TESTING BEFORE THE FILL OR AGGREGATE IS PLACED AS PART OF THE VEGETATED UNDERDRAINED SOIL FILTER BASIN'S CONSTRUCTION.

OBTAIN A SAMPLE OF THE FILTER MEDIA CONSISTING OF A BLEND OF SAND, TOPSOIL AND WOOD FIBER MULCH (OR OTHER APPROVED ORGANIC SOURCE). THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM ANALYSES OF THE BLENDED FILTER MEDIA SHOWING IT HAS 8% TO 12% BY WEIGHT PASSING THE #200 SIEVE AS DETERMINED BY ASTM C136 (SIEVE ANALYSIS OF FINE AND COURSE AGGREGATES 1996A), HAS A CLAY CONTENT OF LESS THAN 2% AND HAS AN ORGANIC MATTER CONTENT OF NO LESS THAN 10% BY DRY WEIGHT.

IF THE UNDERDRAIN PIPES WILL BE BEDDED IN GRAVEL, OBTAIN A SAMPLE OF THE GRAVEL FILL TO BE USED FOR THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE OR PIT FACE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COURSE AGGREGATES 1996A) OF THE GRAVEL TO BE USED FOR THE UNDERDRAIN PIPE BEDDING. THE GRAVEL FILL MUST CONFORM TO MEDOT SPECIFICATION 703.22 UNDERDRAIN TYPE B.

IF THE UNDERDRAIN PIPE WILL BE BEDDED IN CRUSHED STONE, OBTAIN A SAMPLE OF THE CRUSHED STONE TO BE USED FOR THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COURSE AGGREGATES 1996A) OF THE CRUSHED STONE TO BE USED FOR THE UNDERDRAIN PIPE BEDDING. THE CRUSHED STONE FILL MUST CONFORM TO MEDOT SPECIFICATION 703.22 UNDERDRAIN TYPE C.

SOIL FILTER NOTES

1) THE SOIL FILTER IS PART OF A TOWN OF MANCHESTER PERMIT. CONSTRUCTION SHALL FOLLOW CURRENT MAINE DEP GUIDELINES WHICH INCLUDE APPROVAL OF MATERIAL PRIOR TO PLACEMENT AND CONSTRUCTION OVERSIGHT BY THE DESIGN ENGINEER.

2) SUBMIT SAMPLES AND GRADATIONS FOR EACH MATERIAL TO BE USED. PROVIDE EXPECTED DESIGN MIX. PERFORM AND PROVIDE STANDARD PROCTOR ON COMBINED MIXTURE AS WELL AS A PERMEABILITY TEST.

3) SCARIFY TO LOOSEN EXISTING SOIL AT LEAST 8" PRIOR TO LAYING FIRST LAYER OF THE SOIL FILTER SECTION.

4) MAXIMUM SPACING OF UNDERDRAIN PIPING IS 10' O.C. END CAPS SHALL BE INSTALLED ON ALL UNDER DRAIN PIPES.

5) AFTER APPROVAL OF MATERIAL, PLACE FILTER MEDIA IN TWO LIFTS WITH LOW WEIGHT VEHICLES TO 90-92% STANDARD PROCTOR.

6) PROVIDE 2" OF BARK MULCH OR EROSION CONTROL MIX ON TOP OF THE FILTER BED UNTIL THE SITE HAS PROPOSED HARDSCAPE PLACED AND HAS VEGETATION WELL ESTABLISHED EVERYWHERE ELSE. ONCE THE SITE IS STABILIZED, REMOVE THE MULCH AND ACCUMULATED SEDIMENT FROM THE FILTER AND ESTABLISH VEGETATION PER THE FILTER BED SEEDING PLAN.

7) PRIOR TO TURNING OVER TO OWNER, REMOVE SEDIMENT AND DEBRIS FROM FILTER SURFACE, OVERFLOW WEIR, INSIDE OVERFLOW STRUCTURE AND DISCHARGE PIPE.

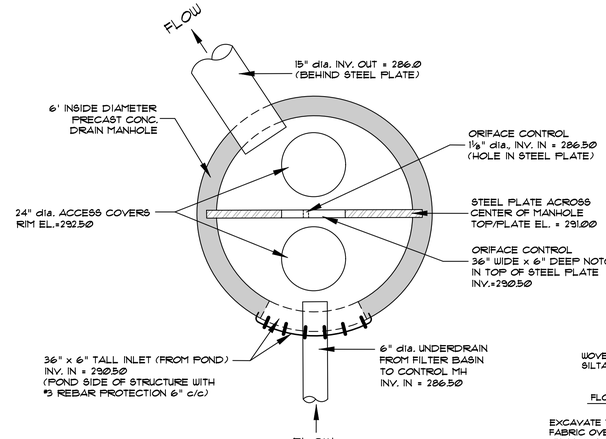
SOIL FILTER MEDIA SPECIFICATIONS *

FILTER MEDIA	SAND	TOPSOIL	MULCH
MIXTURE BY VOL.	50% (±5%)	25% (±5%)	25% (±5%)
SPECIFICATION	MEDOT SPEC. #703.01 FINE AGGREGATE FOR CONCRETE	USDA LOAMY SANDY TOPSOIL	WOODY FIBER & MODERATELY FINE, SHREDDED BARK SUPERHUMUS OR EQUAL, ADJUSTED FOR MINERAL SOIL CONTENT WITH LESS THAN 5% PASSING THE #200 SIEVE
GRADATION			
SIEVE SIZE	% BY WEIGHT	% BY WEIGHT	% BY WEIGHT
3/8"	100	-	-
4	90-100	75-95	-
8	80-100	-	-
10	-	60-90	-
16	50-85	-	-
30	25-60	-	-
40	-	35-85	-
60	10-30	-	-
100	2-10	-	-
200	0-5	15-25	-
200 CLAY	< 2% * *	< 2% * *	< 2% * *

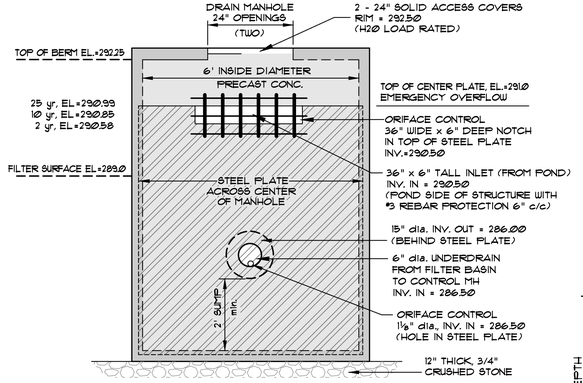
* FOR GRASSED UNDERDRAINED SOIL FILTER BMP, PER THE MAINE DEP VOLUME III : BMP's TECHNICAL DESIGN MANUAL, MAY 2014

* * COMBINED MIXTURE CLAY CONTENT SHALL NOT EXCEED 2%

NOTE: THE SOIL FILTER SHALL DRAIN IN NO LESS THAN 24 hrs BUT NOT MORE THAN 48 hrs.



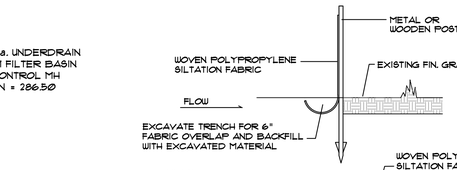
PLAN VIEW



ELEVATION VIEW FROM INLET SIDE OF STRUCTURE

FILTER BASIN #1
OUTLET CONTROL STRUCTURE #1 DETAIL

(NOT TO SCALE)

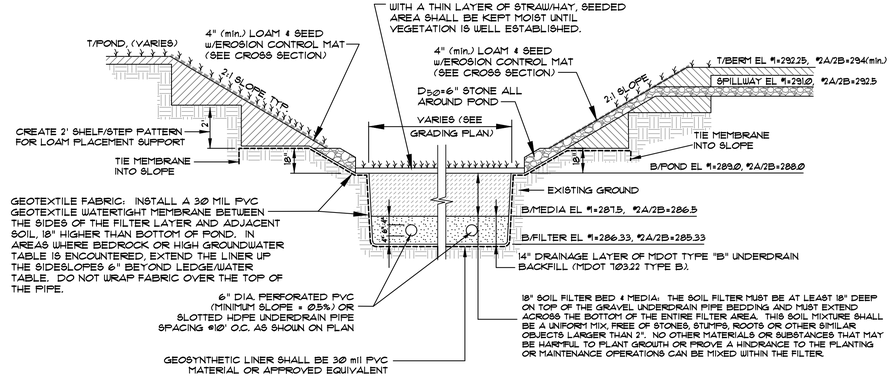


STONE DRIP EDGE DETAIL

NOT TO SCALE

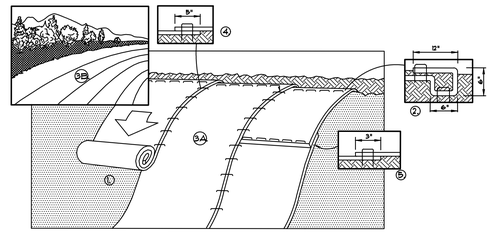
NOTE:
FILTER POND SOIL FILTER DETAILS DEPICTS ELEVATIONS AT THE BOTTOM PERIMETER OF THE POND AND NOT THE LOW POINT OF THE POND. SEE SITE PLAN GRADING AND SECTION FOR LOW POINT OF ELEVATION (TYPICALLY NEAR THE CONTROL STRUCTURE)

VEGETATION: THE SOIL FILTER SURFACE MUST BE PLANTED WITH 2" SANDY LOAM & SEEDED WITH MIXTURE SHOWN BELOW :
CREEPING RED FESCUE - 15 lbs/ACRE
TALL FESCUE - 15 lbs/ACRE
BIRDSFOOT TREFOIL - 8 lbs/ACRE
PERENNIAL RYE GRASS - 5 lbs/ACRE
REDTOP OR CLOVER - 5 lbs/ACRE
TOTAL - 48 lbs/ACRE
NOTE: SEEDED LAYER SHALL BE COVERED WITH A THIN LAYER OF STRAW/HAY. SEEDED AREA SHALL BE KEPT MOIST UNTIL VEGETATION IS WELL ESTABLISHED.



SOIL FILTER BASIN #1 & #2 DETAIL

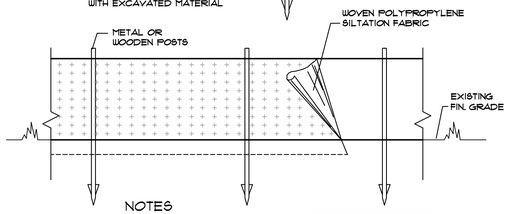
NOT TO SCALE



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROX. 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH. NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION CONTROL BLANKET DETAIL

NOT TO SCALE

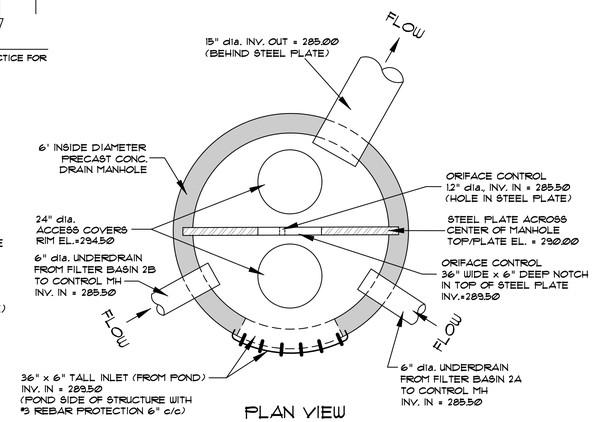


NOTES

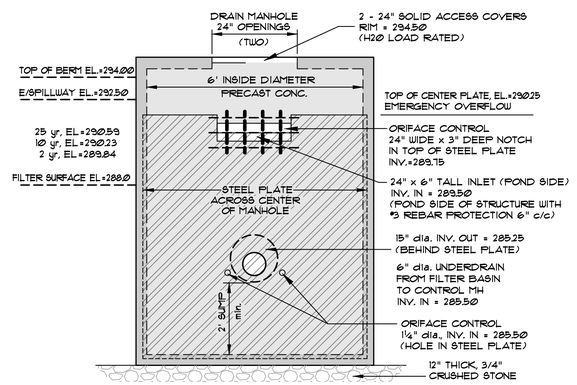
REFERENCE IS MADE TO THE BEST MANAGEMENT PRACTICE FOR EROSION AND SEDIMENT CONTROL.

SILT FENCE DETAIL

NOT TO SCALE



PLAN VIEW



ELEVATION VIEW FROM INLET SIDE OF STRUCTURE

FILTER BASIN #2A & 2B
OUTLET CONTROL STRUCTURE #1 DETAIL

(NOT TO SCALE)

STATE OF MAINE — STEPHEN J. RIEMER — REGISTERED PROFESSIONAL ENGINEER — FOR APPROVALS ONLY

REV.:	BY:	DATE:	CHANGES:
1	SJR	7-8-2023	PEER TOWN REVIEW COMMENTS
2	SJR	8-16-2023	SUBMITTED FOR PLANNING BOARD REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SJR ENGINEERING, INC.

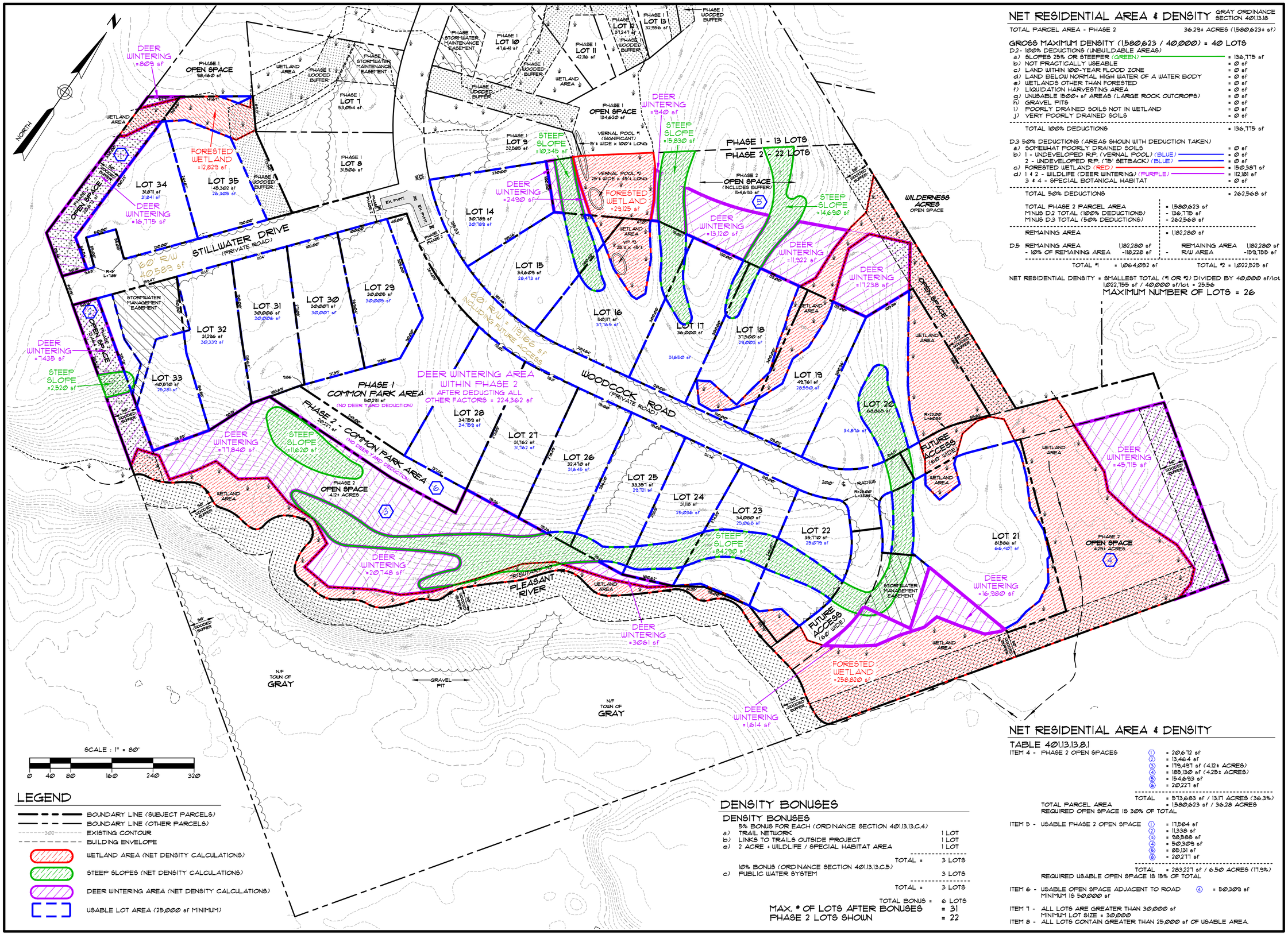
SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONTCOUTH, MAINE 04259
(207) 242-6248 tel & fax
steve@sjreng.com

FILTER BASIN NOTES & DETAILS
STILLWATER DRIVE
STILLWATER PINES SUBDIVISION - GREAT, MAINE
PREPARED FOR
A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

DATE	PROJECT
JUNE 2023	2023-04
DRAWN BY	SCALE
SJR	AS NOTED

SHEET 9

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SJR ENGINEERING, INC.



SCALE : 1" = 80'

0 40 80 160 240 320

LEGEND

- BOUNDARY LINE (SUBJECT PARCELS)
- BOUNDARY LINE (OTHER PARCELS)
- 302 EXISTING CONTOUR
- BUILDING ENVELOPE
- WETLAND AREA (NET DENSITY CALCULATIONS)
- STEEP SLOPES (NET DENSITY CALCULATIONS)
- DEER WINTERING AREA (NET DENSITY CALCULATIONS)
- USABLE LOT AREA (25,000 sf MINIMUM)

NET RESIDENTIAL AREA & DENSITY

GRAY ORDINANCE SECTION 401.13.18

TOTAL PARCEL AREA - PHASE 2 — 36.29± ACRES (1,580,623± sf)

GROSS MAXIMUM DENSITY (1,580,623 / 40,000) = 40 LOTS

D.2 - 100% DEDUCTIONS (UNBUILDABLE AREAS)

a)	SLOPES 25% OR STEEPER (GREEN)	= 136,775 sf
b)	NOT PRACTICALLY USEABLE	= 0 sf
c)	LAND WITHIN 100-YEAR FLOOD ZONE	= 0 sf
d)	LAND BELOW NORMAL HIGH WATER OF A WATER BODY	= 0 sf
e)	WETLANDS OTHER THAN FORESTED	= 0 sf
f)	LIQUIDATION HARVESTING AREA	= 0 sf
g)	UNUSABLE 1500+ sf AREAS (LARGE ROCK OUTCROPS)	= 0 sf
h)	GRAVEL PITS	= 0 sf
i)	POORLY DRAINED SOILS NOT IN WETLAND	= 0 sf
j)	VERY POORLY DRAINED SOILS	= 0 sf
	TOTAL 100% DEDUCTIONS	= 136,775 sf

D.3 50% DEDUCTIONS (AREAS SHOWN WITH DEDUCTION TAKEN)

a)	SOMEWHAT POORLY DRAINED SOILS	= 0 sf
b)	1 - UNDEVELOPED RP. (VERNAL POOL) (BLUE)	= 0 sf
	2 - UNDEVELOPED RP. (75' SETBACK) (BLUE)	= 0 sf
c)	FORESTED WETLAND (RED)	= 150,387 sf
d)	1 & 2 - WILDLIFE (DEER WINTERING) (PURPLE)	= 112,181 sf
	3 & 4 - SPECIAL BOTANICAL HABITAT	= 0 sf
	TOTAL 50% DEDUCTIONS	= 262,568 sf

TOTAL PHASE 2 PARCEL AREA		= 1,580,623 sf
MINUS D.2 TOTAL (100% DEDUCTIONS)		- 136,775 sf
MINUS D.3 TOTAL (50% DEDUCTIONS)		- 262,568 sf
REMAINING AREA		= 1,182,280 sf
D.5 REMAINING AREA	1,182,280 sf	REMAINING AREA 1,182,280 sf
- 10% OF REMAINING AREA	-118,228 sf	- R/W AREA -159,755 sf
TOTAL #1	= 1,064,052 sf	TOTAL #2 = 1,022,525 sf

NET RESIDENTIAL DENSITY = SMALLEST TOTAL (#1 OR #2) DIVIDED BY 40,000 sf/lot
1,022,755 sf / 40,000 sf/lot = 25.56
MAXIMUM NUMBER OF LOTS = 26

DENSITY BONUSES

DENSITY BONUSES

5% BONUS FOR EACH (ORDINANCE SECTION 401.13.13.C.4)

a)	TRAIL NETWORK	1 LOT
b)	LINKS TO TRAILS OUTSIDE PROJECT	1 LOT
c)	2 ACRE + WILDLIFE / SPECIAL HABITAT AREA	1 LOT
	TOTAL =	3 LOTS
	10% BONUS (ORDINANCE SECTION 401.13.13.C.5)	
c)	PUBLIC WATER SYSTEM	3 LOTS
	TOTAL =	3 LOTS
	TOTAL BONUS =	6 LOTS

MAX. # OF LOTS AFTER BONUSES = 31
PHASE 2 LOTS SHOWN = 22

NET RESIDENTIAL AREA & DENSITY

TABLE 401.13.13.B.1

ITEM 4 - PHASE 2 OPEN SPACES

①	= 20,672 sf
②	= 13,464 sf
③	= 179,491 sf (4.12± ACRES)
④	= 185,130 sf (4.25± ACRES)
⑤	= 154,693 sf
⑥	= 20,227 sf
TOTAL	= 573,683 sf / 13.17 ACRES (36.3%)
TOTAL PARCEL AREA	= 1,580,623 sf / 36.28 ACRES

REQUIRED OPEN SPACE IS 30% OF TOTAL

ITEM 5 - USABLE PHASE 2 OPEN SPACE

①	= 17,584 sf
②	= 11,338 sf
③	= 98,588 sf
④	= 50,309 sf
⑤	= 85,131 sf
⑥	= 20,277 sf
TOTAL	= 283,221 sf / 6.50 ACRES (17.9%)

REQUIRED USABLE OPEN SPACE IS 15% OF TOTAL

ITEM 6 - USABLE OPEN SPACE ADJACENT TO ROAD ④ = 50,309 sf
MINIMUM IS 50,000 sf

ITEM 7 - ALL LOTS ARE GREATER THAN 30,000 sf
MINIMUM LOT SIZE = 30,000

ITEM 8 - ALL LOTS CONTAIN GREATER THAN 25,000 sf OF USABLE AREA.

REV'S:	DATE:	CHANGES:
4	8.JR 7-8-2023	REVISE LOT 21 AND STORMWATER MAINTENANCE EASEMENT
3	8.JR 7-8-2023	PEER TOWN REVIEW COMMENTS
2	8.JR 6-16-2023	SUBMITTED FOR PLANNING BOARD REVIEW
1	8.JR 3-28-2023	PLACE BUFFER ALONG PLEASANT RIVER TRIBUTARY

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SJR ENGINEERING, INC.

STATE OF MAINE STEPHEN J. RICE 10789 REGISTERED PROFESSIONAL ENGINEER
FOR APPROVALS ONLY

SJR ENGINEERING, INC.
16 THURSTON DRIVE
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(207) 242-6248 tel & fax
steve@sjreng.com

SJR ENGINEERING

NET RESIDENTIAL DENSITY PLAN

(WITH BUILDING ENVELOPES & USABLE LOT SPACE)

STILLWATER PINES, PHASE 2

WOODCOCK DRIVE, GRAY, MAINE

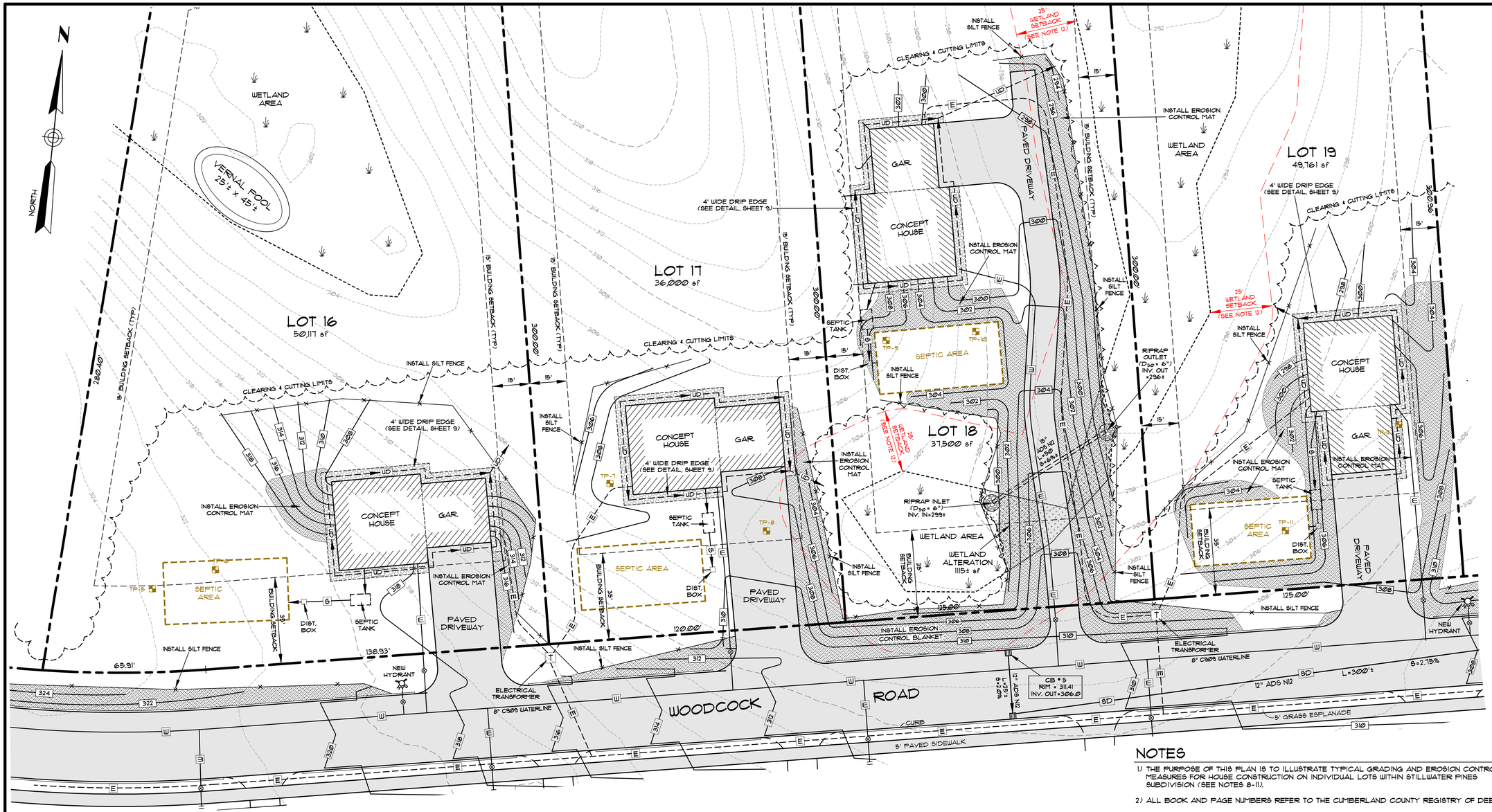
PREPARED FOR

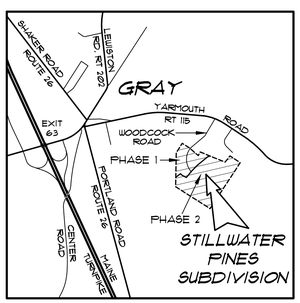
A.H. GROVER, INC.

82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

DATE	PROJECT
JUNE 2023	2023-04
DRAWN BY	SCALE
SJR	1" = 80'

SHEET 10





LOCATION MAP

SCALE : 1" = 20'

0 10 20 40 60 80

LEGEND

- BOUNDARY LINE (SUBJECT PARCELS)
- NEW TREELINE
- NEW CATCH BASIN
- NEW HYDRANT
- NEW WATER SHUT OFF VALVE
- NEW WATER LINE
- NEW UNDERGROUND ELECTRIC LINE
- 6" PERFORATED UNDERDRAIN LINE
- NEW STORM DRAIN LINE
- EXISTING CONTOUR
- NEW CONTOUR
- NEW PAVED AREA
- INSTALL SILT FENCE
- INSTALL EROSION CONTROL BLANKET
- WETLAND AREA
- POTENTIAL HOUSE LOCATION
- TP-2 SEPTIC SYSTEM TEST PIT

NOTES

1) THE PURPOSE OF THIS PLAN IS TO ILLUSTRATE TYPICAL GRADING AND EROSION CONTROL MEASURES FOR HOUSE CONSTRUCTION ON INDIVIDUAL LOTS WITHIN STILLWATER PINES SUBDIVISION (SEE NOTES 8-11).

2) ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

3) THIS PLAN WAS PREPARED TO SERVE AS A VISUAL AID FOR DISCUSSIONS ON THE SITE'S DEVELOPMENT POTENTIAL. EXISTING CONDITIONS ARE BASED UPON THE FOLLOWING:
   A) PLAN ENTITLED "FINAL PLAN - STILLWATER PINES SUBDIVISION", DATED JULY 2021, RECORDED AT SAID REGISTRY IN PLAN BOOK 221, PAGE 432.
   B) 2' LIDAR CONTOURS (2021) WERE OBTAINED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION WEBSITE
   C) ON-SITE TOPOGRAPHIC SURVEY OF THE PROPOSED PHASE 2 ROADWAY AREAS PERFORMED BY ST. CLAIR ASSOCIATES IN JANUARY 2023.
   D) MAINE STATE VERNAL POOL ASSESSMENT FORMS (3) PREPARED BY MARK HAMPTON.
   E) AERIAL IMAGE (OCTOBER 2021) OBTAINED FROM GOOGLE EARTH.

4) OWNER OF RECORD - A.H. GROVER, INC.
   DEED REFERENCE - BOOK 39,951, PAGE 269
   TAX MAP 44, LOT 32-1112 (PHASE 2)

5) PARCEL AREA = 36.29± ACRES (PHASE 2)

6) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY PANEL #230048 0015A, EFFECTIVE DATE JANUARY 6, 1982.

7) THE PARCEL IS LOCATED IN THE MEDIUM DENSITY DISTRICT.
   MIN. LOT AREA = 30000 sf MIN. FRONTAGE = 100' MIN. LOT WIDTH = 100'
   BUILDING SETBACKS - FRONT = 35', SIDE & REAR = 15'

8) SEPTIC SYSTEM LOCATIONS SHOWN ARE SCHEMATIC ONLY. EACH SYSTEM WILL BE DESIGNED BY A MAINE LICENSED SITE EVALUATOR. EACH SYSTEM MUST BE A MINIMUM OF 10' FROM A RIGHT OF WAY OR PROPERTY LINE AND 20' FROM THE PROPOSED HOUSE LOCATION.

9) ELECTRIC SERVICE TO EACH HOUSE SHALL BE UNDERGROUND. LOCATION OF THE MAIN LINE IN WOODCOCK ROAD SHALL BE IN THE GRASSED AREA BETWEEN THE STREET AND SIDEWALK.

10) SEE EROSION CONTROL NOTES AND DETAILS ON SHEETS 8 & 9.

11) A 4' WIDE DRIP EDGE SHALL BE CONSTRUCTED ALL AROUND HOUSE AND GARAGE EXCEPT FOR THE DRIVEWAY. REFER TO DETAIL ON SHEET 9.

12) AN NRPA PERMIT IS REQUIRED FOR LAND DISTURBANCE WITHIN 25' OF A WETLAND SHOWN ON THIS PLAN.

STATE OF MAINE STEPHEN J. ROBERGE 10121 REGISTERED PROFESSIONAL ENGINEER

FOR APPROVALS ONLY

REV:	BY:	DATE:	CHANGES:
1	SJR	6-16-2023	SUBMITTED FOR PLANNING BOARD REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SJR ENGINEERING, INC.

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONTMOUTH, MAINE 04259
(207) 242-6348 tel & fax
steve@sjreng.com

TYPICAL HOUSE LOT LAYOUT AND EROSION CONTROL
STILLWATER PINES SUBDIVISION

PREPARED FOR
A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

DATE	PROJECT
JUNE 2023	2023-04
DRAWN BY	SCALE
SJR	AS NOTED

SHEET 11

NOTES

1) THE PURPOSE OF THIS PLAN IS TO ILLUSTRATE TYPICAL GRADING AND EROSION CONTROL MEASURES FOR HOUSE CONSTRUCTION ON INDIVIDUAL LOTS WITHIN STILLWATER PINES SUBDIVISION (SEE NOTES 8-11).

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   C) ON-SITE TOPOGRAPHIC SURVEY OF THE PROPOSED PHASE 2 ROADWAY AREAS PERFORMED BY ST. CLAIR ASSOCIATES IN JANUARY 2023.
   D) MAINE STATE VERNAL POOL ASSESSMENT FORMS (3) PREPARED BY MARK HAMPTON.
   E) AERIAL IMAGE (OCTOBER 2021) OBTAINED FROM GOOGLE EARTH.

4) OWNER OF RECORD - A.H. GROVER, INC.
   DEED REFERENCE - BOOK 39,951, PAGE 269
   TAX MAP 44, LOT 32-1112 (PHASE 2)

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   MIN. LOT AREA = 30,000 sf MIN. FRONTAGE = 100' MIN. LOT WIDTH = 100'
   BUILDING SETBACKS - FRONT = 35', SIDE & REAR = 15'

8) SEPTIC SYSTEM LOCATIONS SHOWN ARE SCHEMATIC ONLY. EACH SYSTEM WILL BE DESIGNED BY A MAINE LICENSED SITE EVALUATOR. EACH SYSTEM MUST BE A MINIMUM OF 10' FROM A RIGHT OF WAY OR PROPERTY LINE AND 20' FROM THE PROPOSED HOUSE LOCATION.

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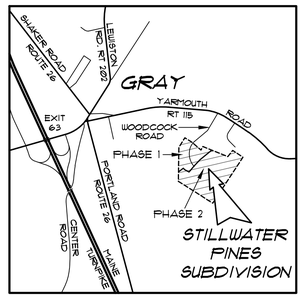
10) SEE EROSION CONTROL NOTES AND DETAILS ON SHEETS 8 & 9.

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12) AN NRPA PERMIT IS REQUIRED FOR LAND DISTURBANCE WITHIN 25' OF A WETLAND SHOWN ON THIS PLAN.

LEGEND

- BOUNDARY LINE (SUBJECT PARCELS)
- NEW TREELINE
- NEW CATCH BASIN
- NEW HYDRANT
- NEW WATER SHUT OFF VALVE
- NEW WATER LINE
- NEW UNDERGROUND ELECTRIC LINE
- 6" PERFORATED UNDERDRAIN LINE
- NEW STORM DRAIN LINE
- EXISTING CONTOUR
- NEW CONTOUR
- NEW PAVED AREA
- INSTALL SILT FENCE
- INSTALL EROSION CONTROL BLANKET
- WETLAND AREA
- POTENTIAL HOUSE LOCATION
- TP-2 SEPTIC SYSTEM TEST PIT



LOCATION MAP

SCALE : 1" = 20'

0 10 20 40 60 80

STATE OF MAINE
STEPHEN J. RIOUX
2174
REGISTERED PROFESSIONAL ENGINEER

FOR APPROVALS ONLY

REV.:	BY:	DATE:	CHANGES:

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SJR ENGINEERING, INC.

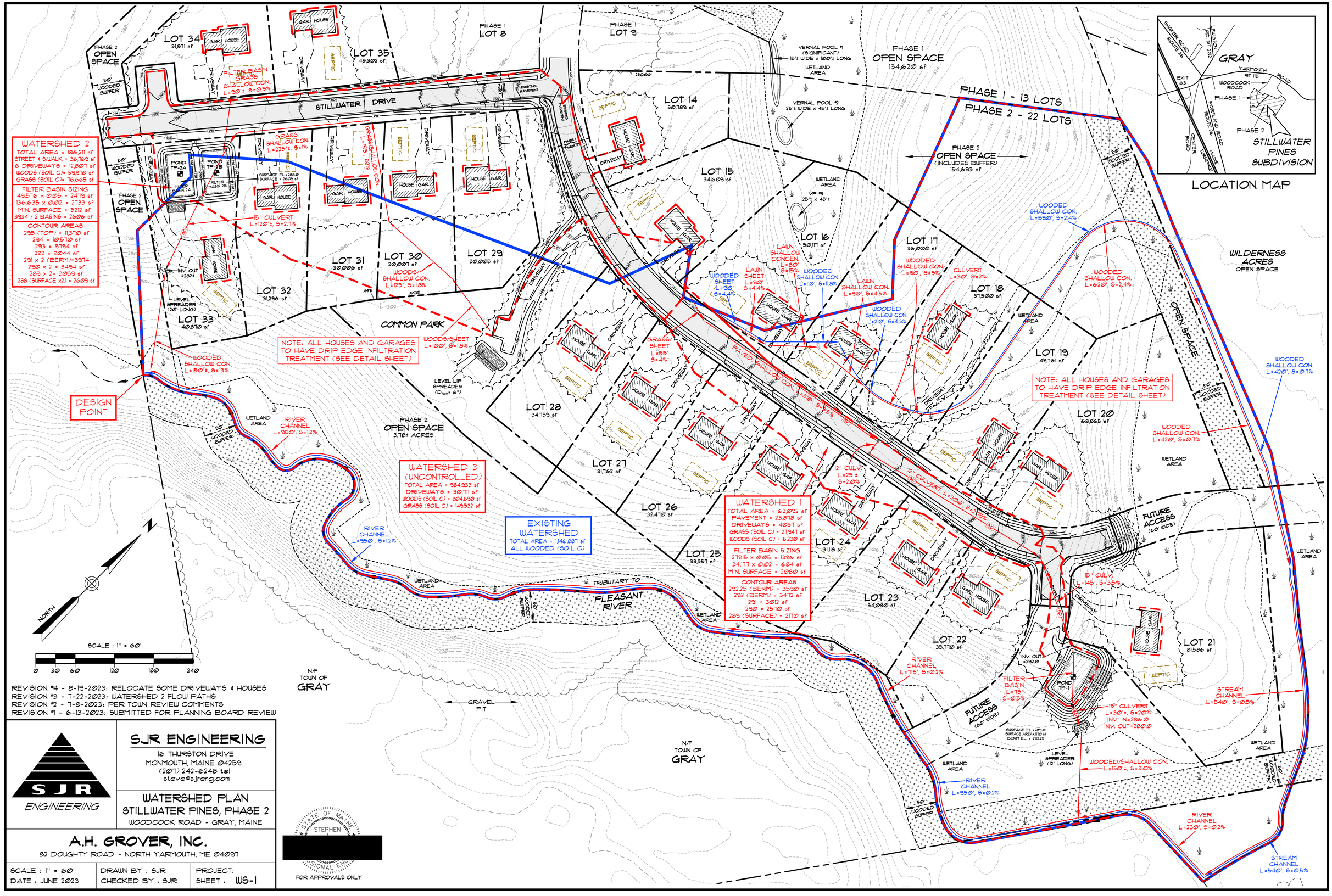
SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel & fax
steve@sjreng.com

TYPICAL LAYOUT, LOTS 20-22 AND EROSION CONTROL
STILLWATER PINES SUBDIVISION

PREPARED FOR
A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

DATE	PROJECT
8-19-2023	2023-04
DRAWN BY	SCALE
SJR	AS NOTED

SHEET 12



WATERSHED 2
TOTAL AREA = 186,211 sf
STREET & S/WALK = 36,769 sf
6 DRIVEWAYS = 12,807 sf
WOODS (SOIL C)= 59,970 sf
GRASS (SOIL C)= 76,665 sf

FILTER BASIN SIZING
49,576 x 0.05 = 2479 sf
136,635 x 0.02 = 2733 sf
MIN. SURFACE = 5212 sf
3834 / 2 BASINS = 2606 sf

CONTOUR AREAS
295 (TOP) = 11,370 sf
294 = 10,570 sf
293 = 9794 sf
292 = 9044 sf
291 x 2 (BERM)=3974
290 x 2 = 3494 sf
289 x 2= 3039 sf
288 (SURFACE x2) = 1609 sf

WATERSHED 3 (UNCONTROLLED)
TOTAL AREA = 984,933 sf
DRIVEWAYS = 30,711 sf
WOODS (SOIL C) = 804,690 sf
GRASS (SOIL C) = 149,532 sf

EXISTING WATERSHED
TOTAL AREA = 1,146,887 sf
ALL WOODED (SOIL C)

WATERSHED 1
TOTAL AREA = 62,092 sf
PAVEMENT = 23,878 sf
DRIVEWAYS = 4037 sf
GRASS (SOIL C) = 27,941 sf
WOODS (SOIL C) = 6,230 sf

FILTER BASIN SIZING
21,915 x 0.05 = 1396 sf
34,177 x 0.02 = 684 sf
MIN. SURFACE = 2080 sf

CONTOUR AREAS
292.25 (BERM) = 3590 sf
292 (BERM) = 3472 sf
291 = 3012 sf
290 = 2570 sf
289 (SURFACE) = 2170 sf

REVISION #4 - 8-19-2023: RELOCATE SOME DRIVEWAYS & HOUSES
REVISION #3 - 7-22-2023: WATERSHED 2 FLOW PATHS
REVISION #2 - 7-8-2023: PER TOWN REVIEW COMMENTS
REVISION #1 - 6-13-2023: SUBMITTED FOR PLANNING BOARD REVIEW

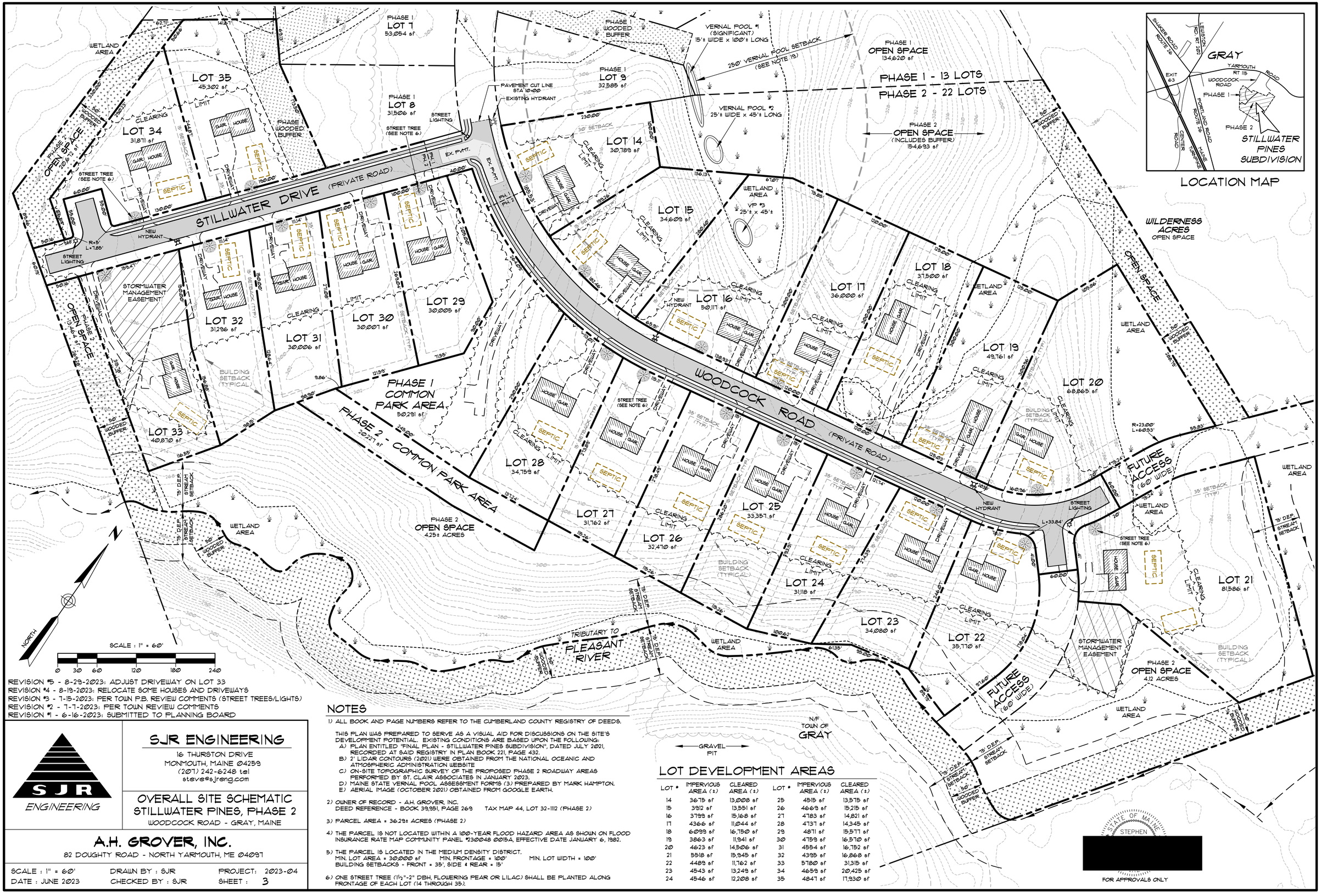
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WATERSHED PLAN
STILLWATER PINES, PHASE 2
WOODCOCK ROAD - GRAY, MAINE

A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

SCALE : 1" = 60'
DATE : JUNE 2023
DRAWN BY : SJR
CHECKED BY : SJR
PROJECT:
SHEET : WS-1

STATE OF MAINE
STEPHEN
[redacted]
PROFESSIONAL ENGINEER
FOR APPROVALS ONLY



LOCATION MAP

REVISION #5 - 8-29-2023: ADJUST DRIVEWAY ON LOT 33
REVISION #4 - 8-19-2023: RELOCATE SOME HOUSES AND DRIVEWAYS
REVISION #3 - 7-15-2023: PER TOWN P.B. REVIEW COMMENTS (STREET TREES/LIGHTS)
REVISION #2 - 7-7-2023: PER TOWN REVIEW COMMENTS
REVISION #1 - 6-16-2023: SUBMITTED TO PLANNING BOARD

NOTES

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2) OWNER OF RECORD - A.H. GROVER, INC.
   DEED REFERENCE - BOOK 39,951, PAGE 269 TAX MAP 44, LOT 32-1112 (PHASE 2)

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5) THE PARCEL IS LOCATED IN THE MEDIUM DENSITY DISTRICT.
   MIN. LOT AREA = 30,000 sf MIN. FRONTAGE = 100' MIN. LOT WIDTH = 100'
   BUILDING SETBACKS - FRONT = 35', SIDE & REAR = 15'

6) ONE STREET TREE (1½"-2" DBH, FLOWERING PEAR OR LILAC) SHALL BE PLANTED ALONG FRONTAGE OF EACH LOT (14 THROUGH 35).

LOT DEVELOPMENT AREAS

LOT #	IMPERVIOUS AREA (±)	CLEARED AREA (±)	LOT #	IMPERVIOUS AREA (±)	CLEARED AREA (±)
14	3675 sf	13,008 sf	25	4515 sf	13,575 sf
15	3912 sf	13,551 sf	26	4669 sf	15,215 sf
16	3799 sf	15,168 sf	27	4783 sf	14,821 sf
17	4366 sf	11,044 sf	28	4737 sf	14,345 sf
18	6099 sf	16,750 sf	29	4871 sf	15,577 sf
19	3863 sf	11,941 sf	30	4759 sf	16,570 sf
20	4623 sf	14,506 sf	31	4554 sf	16,752 sf
21	5518 sf	15,945 sf	32	4395 sf	16,868 sf
22	4489 sf	11,762 sf	33	5780 sf	31,315 sf
23	4543 sf	13,249 sf	34	4659 sf	20,425 sf
24	4546 sf	12,208 sf	35	4847 sf	17,930 sf

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OVERALL SITE SCHEMATIC
STILLWATER PINES, PHASE 2
WOODCOCK ROAD - GRAY, MAINE

A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

SCALE : 1" = 60' DRAWN BY : SJR PROJECT: 2023-04
DATE : JUNE 2023 CHECKED BY : SJR SHEET : 3

STATE OF MAINE
STEPHEN
[redacted]
FOR APPROVALS ONLY

NOTE: ALL HOUSES AND GARAGES TO HAVE DRIP EDGE INFILTRATION TREATMENT (SEE DETAIL SHEET)

LOT 28 34,759 sf
COMMON PARK AREA 50,291 sf
LOT 29 30,005 sf
LOT 30 30,007 sf
LOT 31 30,006 sf
LOT 32 31,296 sf
LOT 33 40,870 sf
LOT 15 34,609 sf
LOT 14 30,789 sf
PHASE 1 LOT 9 32,585 sf
PHASE 1 LOT 8 31,506 sf
LOT 35 45,302 sf
LOT 34 31,871 sf
PHASE 2 OPEN SPACE 20,672 sf

FILTER BASIN #2B
SURFACE EL.=288.0
SURFACE AREA=2609 sf
BERM EL. = 295.0

FILTER BASIN #2A
SURFACE EL.=288.0
SURFACE AREA=2609 sf
BERM EL. = 295.0

STILLWATER DRIVE

CB #1 RIM = 308.0 INV. OUT=302.5
CB #2 RIM = 307.4 INV.'s IN=302.1 INV. OUT=301.75
CB #3 RIM = 313.16 INV. OUT=308.0
CB #4 RIM = 313.16 INV.'s IN=307.75 INV. OUT=307.5
CB #9 RIM = 298.70 INV. IN=294.5 INV. OUT=294.4
CB #10 RIM = 298.10 INV. IN=294.15 INV. OUT=294.05
CB #11 RIM = 295.75 INV. IN=291.3 INV. OUT=291.2
CB #12 RIM = 295.38 INV. IN=290.55 INV. OUT=290.45
CB #13 RIM = 295.38 12" INV. IN=290.3 15" INV. IN=290.3 INV. OUT=290.2
DMH #1 RIM = 295.01 INV. IN=289.4 INV.'s OUT=289.3
OCS #2 RIM = 292± INV.'s IN=285.0 INV. OUT=285.25
OCS #2B RIM = 295.01± INV. OUT=285.0

12" ADS N12 L=25'±, S=1.0%
12" ADS N12 L=150'±, S=3.6%
12" ADS N12 L=34'± S=1.0%
15" CPP w/RIPRAP INLET/OUTLET (SCHEMATIC)
15" ADS N12 L=270', S=2.7%
15" ADS N12 L=274'±, S=1%
18" ADS N12 L=80', S=1.0%
18" ADS N12 L=64', S=1%
18" ADS N12 L=23'±, S=1.0% w/2" STYROFOAM INSULATION (4' WIDE)
18" CPP L=40'±, S=1% RIPRAP INLET/OUTLET (D50=6") INV. IN=288± INV. OUT=287.6±
18" ADS N12 FROM CB #3 TO FILTER BASIN #2 L=72'±, S=1.2%
18" ADS N12 BETWEEN CB #2 & CB #3 L=25'±, S=1.0% w/2" STYROFOAM INSULATION (4' WIDE)
15" ADS N12 BETWEEN CB #9 & CB #10 L=25'±, S=1.0% w/2" STYROFOAM INSULATION (4' WIDE)
2" STYROFOAM INSULATION (4' WIDE)
20' LONG LEVEL LIP SPREADER (D50= 6")
LEVEL LIP SPREADER (D50= 6") L=40'±
ROCKED DISPERSION PAD
25' WIDE EMERGENCY SPILLWAY EL.=293.5
2" BLOWOFF VALVE
2" BLOWOFF VALVE BEYOND END OF PVMT.
T/BERM=294(min)
INSTALL SILT FENCE
INSTALL EROSION CONTROL BLANKET
INSTALL STABILIZED CONSTRUCTION EXIT
SURFACE DRAINAGE
BUILDING SETBACK (TYP)
35' BLD SETBACK
15' BUILDING SETBACK (TYP)
50' WOODED BUFFER
5' GRASS EMPLANADE
5' PAVED SIDEWALK
EXISTING PAVEMENT
CROSS WALK
NEW STREET LIGHTING
EXISTING HYDRANT
NEW HYDRANT
NEW AMERICAN MODEL HYDRANT STA 4+83 LT
POSSIBLE DRIVEWAY
SEPTIC AREA
TP-1 TP-2 TP-3 TP-4 TP-29 TP-30 TP-31 TP-32 TP-33 TP-34 TP-35 TP-36 TP-40 TP-41 TP-42 TP-43 TP-44
INTERSECTION STA 10+38.26 (WOODCOCK) = 0+00 (STILLWATER)
230.00'
PHASE 1
PHASE 2

LEGEND

- BOUNDARY LINE (SUBJECT PARCELS)
- EXISTING TREELINE TO BE REMOVED
- NEW TREELINE
- NEW CATCH BASIN
- EXISTING WATER LINE
- NEW WATER LINE
- EXISTING CONTOUR
- NEW CONTOUR
- INSTALL SILT FENCE
- NEW PAVED AREA
- INSTALL EROSION CONTROL BLANKET
- WETLAND AREA
- POTENTIAL HOUSE LOCATION
- TP-2 SEPTIC SYSTEM TEST PIT

NORTH

PLAN VIEW
SCALE : 1" = 40'

0 20 40 80 120 160 (H)
0 2 4 8 12 16 (V)

PROFILE
SCALE : HORIZ. - 1" = 40'
VERT. - 1" = 4'

PROFILE
SCALE : HORIZ. - 1" = 40'
VERT. - 1" = 4'

80' VERT. CURVE
VPI STA 2+00
VPI EL.=300.00
K VALUE = 20.0

50' VERT. CURVE
VPI STA 0+84
VPI EL.=305.30
K VALUE = 25.0

50' VERT. CURVE
VPI STA 6+44.50
VPI EL.=295.55
K VALUE = 26.0

12" ADS N12 FROM CB #1 L=34', S=1%
12" ADS N12 FROM CB #4 L=150', S=3.6%
EXISTING WATERLINE
EXISTING GRADE
PROPOSED GRADE
8" C909 WATERLINE w/TRACER WIRE
END EX. WATERLINE BEGIN NEW WATERLINE
5.5' MIN.
-3.0%
-1.0%
+1.0%
306.21 (EXISTING)
306.62 (PROPOSED)
296.50 (PROPOSED)
295.5± (EXISTING)

SITE NOTES

1) ALL BOOK AND PAGE NUMBERS REFER TO THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

THIS PLAN WAS PREPARED TO SERVE AS A VISUAL AID FOR DISCUSSIONS ON THE SITE'S DEVELOPMENT POTENTIAL. EXISTING CONDITIONS ARE BASED UPON THE FOLLOWING:
A) PLAN ENTITLED "FINAL PLAN - STILLWATER PINES SUBDIVISION", DATED JULY 2021, RECORDED AT SIAD REGISTRY IN PLAN BOOK 221, PAGE 432.
B) 2' LIDAR CONTOURS (2021) WERE OBTAINED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION WEBSITE
C) ON-SITE TOPOGRAPHIC SURVEY OF THE PROPOSED PHASE 2 ROADWAY AREAS PERFORMED BY ST. CLAIR ASSOCIATES IN JANUARY 2023.
D) MAINE STATE VERNAL POOL ASSESSMENT FORMS (3) PREPARED BY MARK HAMPTON.
E) AERIAL IMAGE (OCTOBER 2021) OBTAINED FROM GOOGLE EARTH.

2) OWNER OF RECORD - A.H. GROVER, INC.
DEED REFERENCE - BOOK 39,951, PAGE 269
TAX MAP 44, LOT 32-1112 (PHASE 2)

3) PARCEL AREA = 36.29± ACRES (PHASE 2)

4) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY PANEL #230048 0015A, EFFECTIVE DATE JANUARY 6, 1982.

5) THE PARCEL IS LOCATED IN THE MEDIUM DENSITY DISTRICT.
MIN. LOT AREA = 30,000 sf MIN. FRONTAGE = 100' MIN. LOT WIDTH = 100'
BUILDING SETBACKS - FRONT = 35', SIDE & REAR = 15'

CONSTRUCTION SEQUENCE NOTE

CONTRACTOR SHALL STAKE OUT THE LEVEL LIP SPREADERS IN ADVANCE OF CONSTRUCTING THEM. THE LOCATIONS AND TOPOGRAPHY SHALL BE REVIEWED WITH THE TOWN ENGINEER TO ENSURE THAT THE RUNOFF WILL BE DISPERSED AS SHEET FLOW.

STATE OF MAINE STEPHEN J. ROWAN 10121 REGISTERED PROFESSIONAL ENGINEER
FOR APPROVALS ONLY

REV:	BY:	DATE:	CHANGES:
5	SJR	8-29-2023	DRIVEWAY ON LOT 33 & LEVEL SPREADER LENGTH LABEL
4	SJR	8-14-2023	RELOCATE SOME DRIVEWAYS/HOUSES, ADD CULVERTS
3	SJR	7-22-2023	PEER TOWN REVIEW COMMENTS
2	SJR	7-7-2023	PEER TOWN REVIEW COMMENTS
1	SJR	6-16-2023	SUBMITTED FOR PLANNING BOARD REVIEW

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SJR ENGINEERING, INC.

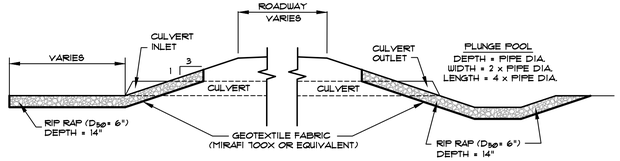
SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel & fax
steves@rjreng.com

PLAN AND PROFILE
STILLWATER DRIVE
STILLWATER PINES SUBDIVISION - GRAY, MAINE

PREPARED FOR
A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

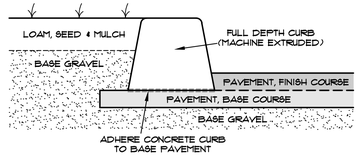
DATE	PROJECT
JUNE 2023	2023-04
DRAWN BY	SCALE
SJR	AS NOTED

SHEET 6



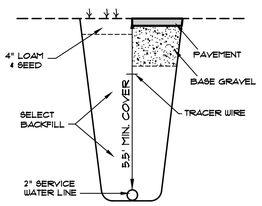
TYPICAL CULVERT INLET & OUTLET DETAIL

NOT TO SCALE



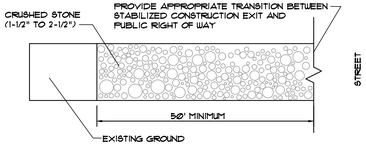
CONCRETE CURB CROSS SECTION

NOT TO SCALE



WATER SERVICE TRENCH DETAIL

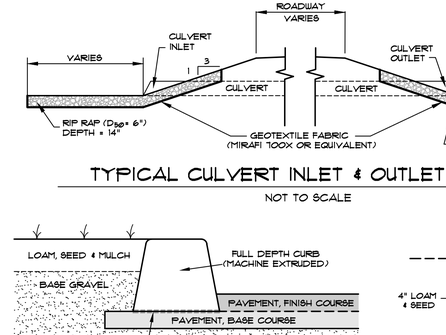
NOT TO SCALE



1. STONE SIZE - AASHTO DESIGNATION M 43, SIZE #2 (2½" - 1½") USE CRUSHED STONE
2. LENGTH - AS EFFECTIVE BUT NOT LESS THAN 50'
3. THICKNESS - NOT LESS THAN 6"
4. WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS
5. WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
6. MAINTENANCE - THE STABILIZED CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.

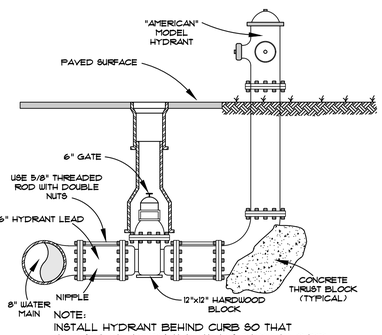
STABILIZED CONSTRUCTION EXIT DETAIL

NOT TO SCALE



4'-0" DIA. CATCH BASIN

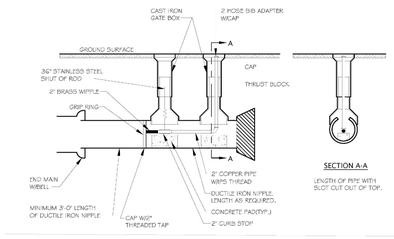
NOT TO SCALE



NOTE:
INSTALL HYDRANT BEHIND CURB SO THAT
NO PART OF HYDRANT EXTENDS BEYOND CURB.

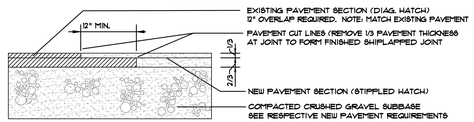
HYDRANT DETAIL

NOT TO SCALE



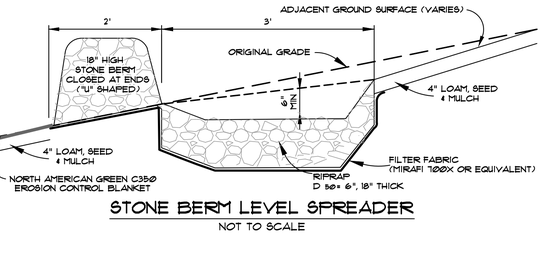
TYPICAL BLOW-OFF DETAIL

NOT TO SCALE



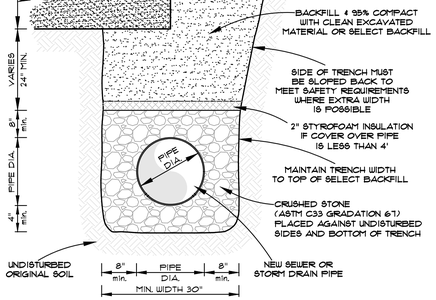
PAVEMENT SAWCUT JOINT DETAIL

NOT TO SCALE



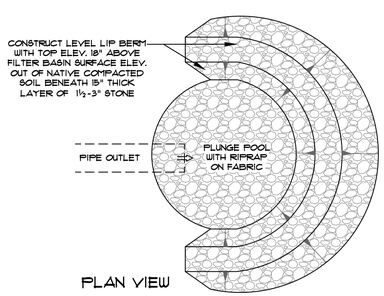
STONE BERM LEVEL SPREADER

NOT TO SCALE



STORM DRAIN TRENCH DETAIL

NOT TO SCALE



PLAN VIEW

DISPERSION BERM DETAIL

NOT TO SCALE

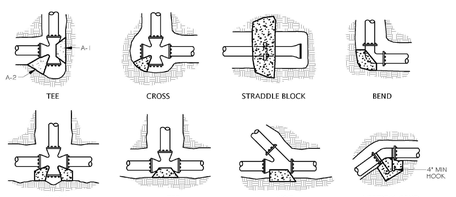
(HORIZONTAL) BEARING AREA OF THRUST BLOCKS IN SQUARE FEET

FITTING SIZE	TEE, WYE, DEAD END AND HYDRANT	STRADDLE BLOCK	90D BEND PLUGGED CROSS	TEE PLUGGED ON RUN A-1	TEE PLUGGED ON RUN A-2	45D BEND	22-1/2D BEND	11-1/4D BEND
4	1.0	1.6	1.4	1.9	1.4	1.0	---	---
6	2.1	3.7	3.0	4.3	3.0	1.6	1.0	---
8	3.6	6.5	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	10.2	8.4	11.6	8.4	4.6	2.4	1.2
12	8.5	14.7	12.0	17.0	12.0	6.6	3.4	1.7
14	11.5	---	16.3	23.0	16.3	8.9	4.6	2.3
16	15.0	26.1	21.3	30.0	21.3	11.6	6.0	3.0
18	19.0	---	27.0	38.0	27.0	14.6	7.6	3.8
20	23.5	40.8	33.3	47.0	33.3	18.1	9.4	4.7
24	34.0	58.8	48.0	68.0	48.0	26.2	13.6	6.8

(VERTICAL) VOLUME OF THRUST BLOCK IN CUBIC YARDS

90D BEND	45D BEND	22-1/2D BEND	11-1/4D BEND
---	---	---	---
---	---	---	---
1.3	---	---	---
2.3	1.1	---	---
3.7	1.8	---	---
5.5	2.8	1.2	---
7.6	3.9	1.7	---
9.9	5.1	2.3	0.9
---	---	---	---
---	---	---	---
---	---	---	---

NOTES:
1. ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:
   BEARING AREA = (TEST PRESSURE / 150) x (2000 / SOIL BEARING STRESS) x (TABLE VALUE)
2. ABOVE VOLUMES BASED ON TEST PRESSURE OF 150 PSI AND THE WEIGHT OF CONCRETE = 4050 POUNDS PER CUBIC YARD. TO COMPUTE FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION:
   VOLUME = (TEST PRESSURE / 150) x (TABLE VALUE)

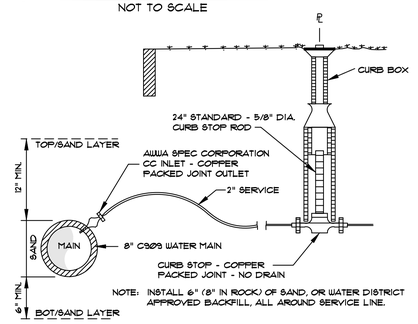


NOTES:
1. CONCRETE BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. ALL CONCRETE TO BE CLASS 2400 MINIMUM.
3. INSTALL ISOLATION MATERIAL BETWEEN PIPE AND/OR FITTINGS BEFORE POURING CONCRETE BLOCKING.
4. CONCRETE SHALL BE KEPT CLEAR OF ALL JOINTS AND ACCESSORIES.
5. TIE RODS SHALL BE CORPORATED GALVANIZED COLD ROLLED STEEL, 40,000 PSI TENSILE STRENGTH.

RODS FOR VERTICAL BENDS		
FITTING SIZE	ROD SIZE	EMBEDMENT
12" AND LESS	#6	30"
14"-16"	#8	36"

THRUST BLOCKING DETAIL

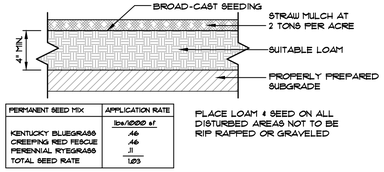
NOT TO SCALE



NOTE: INSTALL 6" (8" IN ROCK) OF SAND, OR WATER DISTRICT APPROVED BACKFILL, ALL AROUND SERVICE LINE.

TYPICAL DOMESTIC WATER SERVICE

NOT TO SCALE

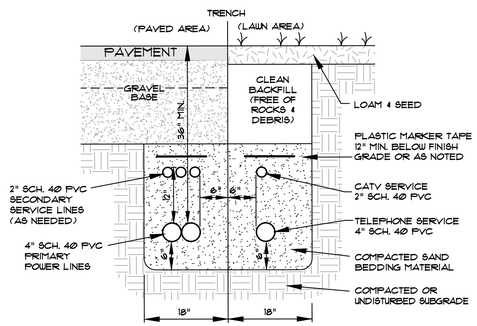


PERMANENT SEED MIX	APPLICATION RATE
	lbs/1000 sf
KENTUCKY BLUEGRASS	.46
CREEPING RED FESCUE	.46
PERENNIAL RYEGRASS	.11
TOTAL SEED RATE	1.03

PLACE LOAM & SEED ON ALL DISTURBED AREAS NOT TO BE RIP RAPPED OR GRAVELED

LOAM & SEED DETAIL

NOT TO SCALE



NOTE: ALL WORK IS TO COMPLY WITH THE RESPECTIVE UTILITY COMPANY STANDARDS

UNDERGROUND UTILITY TRENCH DETAIL

NOT TO SCALE

GENERAL NOTES

1) SEE SHEET 1 FOR SITE SPECIFIC NOTES.

2) THE CONTRACT WORK TO BE PERFORMED ON THIS PROJECT CONSISTS OF FURNISHING ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, IMPLEMENTS, PARTS AND SUPPLIES NECESSARY FOR OR APPURTENANT TO, THE INSTALLATION OF CONSTRUCTION IMPROVEMENTS IN ACCORDANCE WITH THESE DRAWINGS AND AS FURTHER ELABORATED IN ANY ACCOMPANYING SPECIFICATIONS.

3) THE WORK SHALL BE PERFORMED IN A THOROUGH WORKMANLIKE MANNER. ALL CONTRACTORS TO CONFORM TO ALL APPLICABLE OSHA STANDARDS. ANY REFERENCE TO A SPECIFICATION OR DESIGNATION OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, FEDERAL SPECIFICATIONS, OR OTHER STANDARDS, CODES OR ORDERS, REFERS TO THE MOST RECENT OR LATEST SPECIFICATION OR DESIGNATION.

4) ALL CONSTRUCTION WITHIN THE TOWN OF GRAY RIGHT OF WAY SHALL COMPLY WITH TOWN PUBLIC WORKS STANDARDS. ALL UTILITY CONSTRUCTION SHALL CONFORM TO RESPECTIVE UTILITY STANDARDS.

5) THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY THE TOWN OF GRAY PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE TOWN OF GRAY AND/OR MDOT, REQUIRED TO PERFORM ALL THE WORK (STREET OPENINGS, BUILDING PERMIT, ETC.). THE CONTRACTOR SHALL POST ALL BONDS AS REQUIRED, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.

6) PRIOR TO CONSTRUCTION, THE SITE CONTRACTOR IS TO INFORM ALL AREA UTILITY COMPANIES AND GOVERNMENTAL AGENCIES OF PLANNED CONSTRUCTION. THE SITE CONTRACTOR IS REQUIRED TO CONTACT DIG-SAFE (811) AT LEAST 3 BUSINESS DAYS PRIOR TO ANY EXCAVATION TO VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY LOCATIONS.

7) THE PROJECT DRAWINGS ARE GENERALLY SCHEMATIC AND INDICATE THE POSSIBLE LOCATION OF EXISTING UNDERGROUND UTILITIES. INFORMATION ON EXISTING UTILITIES HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY MAPS, MUNICIPAL RECORD MAPS, AND FIELD SURVEY. IT IS NOT GUARANTEED TO BE CORRECT OR COMPLETE. UTILITIES ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING SERVICES, WHEN THOSE SERVICES ARE TO BE LEFT IN PLACE. THE CONTRACTOR IS TO PROVIDE ADEQUATE MEANS OF SUPPORT AND PROTECTION DURING THE EXCAVATING AND BACKFILLING OPERATIONS. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED UTILITIES BE FOUND, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH THE WORK IN THIS AREA.

8) OSHA REGULATIONS MAKE IT UNLAWFUL TO OPERATE CRANES, BOOMS, HOISTS, ETC. WITHIN TEN FEET (10') OF ANY ELECTRIC LINE. IF THE CONTRACTOR MUST OPERATE CLOSER THAN 10', THE CONTRACTOR MUST CONTACT THE POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS BEFORE ENCROACHING ON THIS REQUIREMENT.

9) IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLANS, APPROVALS, AND DETAILS FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL THE SITE CONDITIONS IN THE FIELD AND CONTACT THE DESIGN ENGINEER IF THERE ARE ANY DISCREPANCIES REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT AN APPROPRIATE REVISION CAN BE MADE PRIOR TO BIDDING.

10) ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED IN WRITING BY THE OWNER, DESIGN ENGINEER, AND APPROPRIATE GOVERNMENTAL AGENCY PRIOR TO INSTALLATION.

11) THE CONTRACTOR SHALL RESTORE ALL UTILITY STRUCTURES, PIPE, UTILITIES, PAVEMENT, CURBS, SIDEWALKS, AND LANDSCAPED AREAS DISTURBED BY CONSTRUCTION TO AS GOOD AS BEFORE BEING DISTURBED AS DETERMINED BY THE TOWN OF MANCHESTER CEO. ANY DAMAGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

12) TRAFFIC CONTROL MEASURES SHALL BE UTILIZED IN ACCORDANCE WITH MAINE DOT STANDARDS. THE CONTRACTOR SHALL PROVIDE, MAINTAIN AND PROTECT TRAFFIC CONTROL DEVICES TO THE EXTENT REQUIRED BY LAW FOR THE PROTECTION OF THE PUBLIC CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, AND UNIFORMED TRAFFIC CONTROL PERSONNEL AS REQUIRED OR ORDERED BY THE DESIGN ENGINEER OR CODE ENFORCEMENT PERSONNEL. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC LANES AND PEDESTRIAN WALKWAYS AT ALL TIMES UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE TOWN. PAVEMENT MARKINGS SHALL BE FAST DRYING TYPE IN ACCORDANCE WITH MDOT SPECIFICATIONS. TWELVE INCH (12") WIDE STOP BAR AND FOUR INCH (4") WIDE STRIPES SHALL BE LOCATED AS SHOWN ON THE PLANS.

13) THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL PRODUCT, MATERIALS AND PLANT SPECIFICATIONS TO THE OWNER AND DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 10 WORKING DAYS FOR REVIEW.

14) THE CONTRACTOR SHALL RETAIN AN INDEPENDENT TESTING LABORATORY FOR SOIL AND PAVEMENT MATERIALS AND COMPACTION TESTING AT NO COST TO THE OWNER. RESULTS OF THE TESTING ARE TO BE SUPPLIED TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS ASSOCIATED WITH ANY RECONSTRUCTION AND RE-TESTING OF UNSATISFACTORY SOILS.

15) ALL EXCAVATION SHALL BE BACKFILLED TO EXISTING GRADE BEFORE THE END OF THE DAY OR ADEQUATELY PROTECTED FROM DANGER TO HUMANS AND ANIMALS.

16) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE OWNER WILL PROVIDE A BENCH MARK AT THE CONSTRUCTION SITE FROM WHICH TO BEGIN LAYOUT.

17) THE CONTRACTOR SHALL FURNISH ELECTRICAL POWER, WATER, AND SANITARY FACILITIES FOR HIS EXCLUSIVE USE AT THE CONSTRUCTION SITE SHOULD THE CONTRACTOR DEEM THIS ESSENTIAL FOR THE PROPER PERFORMANCE OF THE CONTRACT.

18) WORK MAY PROGRESS MONDAY THROUGH SATURDAY 7:00 AM TO 7:00 PM. WORK AT OTHER TIMES MAY PROCEED UPON WRITTEN APPROVAL BY THE OWNER AND THE TOWN OF GRAY. THE CONTRACTOR SHALL BE REQUIRED TO CONFORM WITH ALL RULES AND REGULATIONS SET FORTH IN THE CITY LAND USE ORDINANCE REGULATIONS.

19) THE CONTRACTOR SHALL GUARANTEE THE FAITHFUL REMEDY OF ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP AND GUARANTEES PAYMENT FOR ANY RESULTING DAMAGE WHICH SHALL APPEAR WITHIN A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.

20) THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.

21) A PRE-CONSTRUCTION CONFERENCE WITH THE OWNER, DESIGNERS, TOWN OFFICIALS AND CONTRACTOR SHALL BE REQUIRED BEFORE ANY CONSTRUCTION OCCURS ON THE PROJECT. DURING CONSTRUCTION, THERE SHALL BE WEEKLY PROGRESS MEETINGS WITH THE OWNER (ON SITE OR TELECONFERENCE) UNTIL PROJECT COMPLETION.

22) PROPER IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES ARE OF PARAMOUNT IMPORTANCE FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ONSITE INSPECTIONS OF THE OWNER, THEIR REPRESENTATIVES, OR STATE/LOCAL/ FEDERAL INSPECTORS AT NO ADDITIONAL COST TO THE OWNER.

23) ALL MATERIAL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULES BASED UPON PLAN REVIEW. ALL SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING THE WORK. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO MDOT STANDARD SPECIFICATIONS, LATEST REVISION.

GRADING AND DRAINAGE NOTES

1) UNLESS OTHERWISE NOTED, STORM DRAIN PIPE SHALL BE IN ACCORDANCE WITH MDOT SPECIFICATIONS SECTION 603 PIPE CULVERTS AND STORM DRAINS, LATEST REVISION WITH THE EXCEPTION THAT THE ONLY ACCEPTABLE TYPES OF PIPE ARE AS FOLLOWS: REINFORCED CONCRETE PIPE, HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE.

2) HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE (SICP) MAY ONLY BE USED FOR PIPE SIZES 48" DIAMETER AND SMALLER.

3) TOPSOIL STRIPPED IN AREAS OF CONSTRUCTION THAT IS SUITABLE FOR REUSE AS LOAM SHALL BE STOCKPILED ON SITE AT A LOCATION TO DESIGNATED BY THE OWNER. UNSUITABLE SOIL SHALL BE SEPARATED, REMOVED AND DISPOSED OF AT AN APPROVED DISPOSAL LOCATION OFFSITE.

4) ALL EXISTING STRUCTURES, FENCING, TREES, ETC., WITHIN THE CONSTRUCTION AREA, UNLESS OTHERWISE NOTED TO REMAIN, SHALL BE REMOVED AND DISPOSED OF OFFSITE. ANY BURNING ONSITE SHALL BE SUBJECT TO TO LOCAL ORDINANCES AND PROJECT SPECIFICATIONS.

5) THE SITE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES HAVING UNDERGROUND PIPING ON-SITE OR IN THE RIGHT OF WAY PRIOR TO EXCAVATION. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING COMPANY AND LOCATE ALL UTILITIES PRIOR TO GRADING/EXCAVATION START.

6) SITE EXCAVATION AND FILL-IN-PLACE TO ESTABLISH THE DESIRED SUB-GRADE SHALL BE SCHEDULED SUCH THAT EROSION CONTROL PRACTICES ARE IN PLACE AND FUNCTIONING DOWN-GRADIENT OF THE EARTHWORK PRIOR TO THE START OF EARTHMOVING ACTIVITIES.

7) BASED ON FEMA MAPPING, NO AREA WITHIN THE SITE BOUNDARIES IS IN THE 100 YEAR FLOOD PLAIN.

LAYOUT NOTES

1) ALL SIGNS INDICATED ON THE PLANS ARE TO MEET ALL REQUIREMENTS AND STANDARDS OF THE MDOT AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

2) PROPERTY LINE AND RIGHT OF WAY MONUMENTS SHALL NOT BE DISTURBED BY CONSTRUCTION. IF DISTURBED, THEY SHALL BE RESET TO THEIR ORIGINAL LOCATIONS AT THE CONTRACTORS EXPENSE BY A MAINE PROFESSIONAL LAND SURVEYOR.

STATE OF MAINE STEPHEN H. SJR FINAL FOR APPROVALS ONLY

REV.:	4	3	2	1	
BY:	SJR	SJR	SJR	SJR	
DATE:	8-29-2023	8-19-2023	7-18-2023	6-16-2023	
CHANGES:	UPDATE TO DISPERSION BERM DETAIL PER REVIEWER.	ADD DISPERSION BERM DETAIL	PER TOWN REVIEW COMMENTS (LEVEL SPREADER)	SUBMITTED FOR PLANNING BOARD REVIEW	

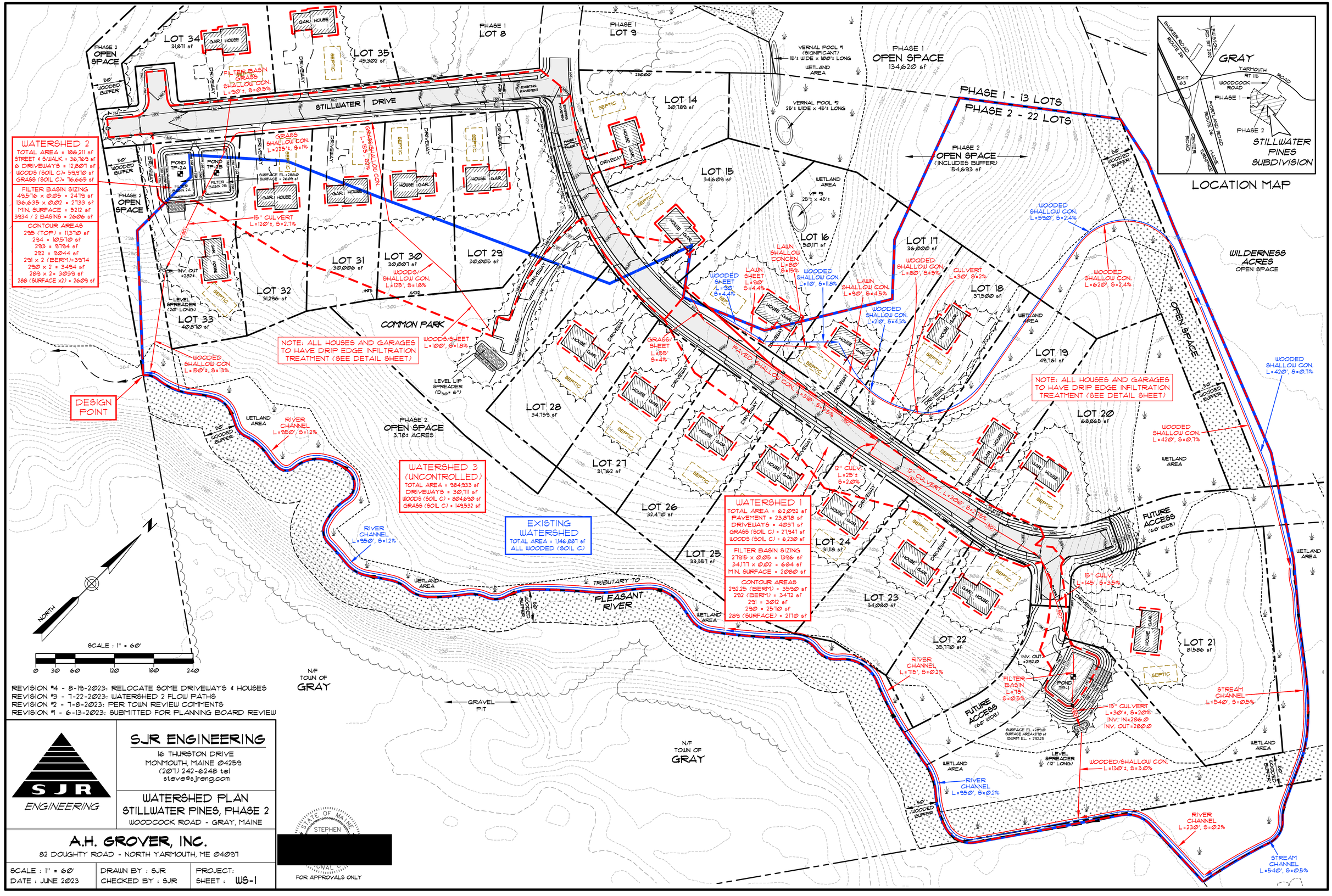
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SJR ENGINEERING, INC.

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel & fax
steve@sjreng.com

CONSTRUCTION NOTES & DETAILS
STILLWATER DRIVE
STILLWATER PINES SUBDIVISION - GRAY, MAINE
PREPARED FOR
A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

DATE	PROJECT
JUNE 2023	2023-04
DRAWN BY	SCALE
SJR	AS NOTED

SHEET 8



REVISION #4 - 8-19-2023: RELOCATE SOME DRIVEWAYS & HOUSES
REVISION #3 - 7-22-2023: WATERSHED 2 FLOW PATHS
REVISION #2 - 7-8-2023: PER TOWN REVIEW COMMENTS
REVISION #1 - 6-13-2023: SUBMITTED FOR PLANNING BOARD REVIEW

SJR ENGINEERING
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel
steve@sjreng.com

WATERSHED PLAN
STILLWATER PINES, PHASE 2
WOODCOCK ROAD - GRAY, MAINE

A.H. GROVER, INC.
82 DOUGHTY ROAD - NORTH YARMOUTH, ME 04097

SCALE : 1" = 60'
DATE : JUNE 2023
DRAWN BY : SJR
CHECKED BY : SJR
PROJECT:
SHEET : WS-1

STATE OF MAINE
STEPHEN
[redacted]
FOR APPROVALS ONLY