

City of Biddeford
Planning Board
May 03, 2023 6:00 PM City Hall
Council Chambers, & Zoom
<https://biddeford.zoom.us/j/99254547167?pwd=Z2t5OFo5L01EL3Z3M1UxL2JFYzA1UT09>
Webinar ID 992 5454 7167 Passcode 514787

STATUS: Planning Board, Wednesday, May 3, 2023, 6:00 PM, City Council Chambers & Zoom

1. PLEDGE OF ALLEGIANCE

2. DECLARATION OF QUORUM/VOTING MEMBERS

3. ADJUSTMENTS TO THE AGENDA

4. PLANNER'S BUSINESS

5. CONSENT AGENDA

5.A. Approve Meeting Minutes from April 19, 2023

[PB Minutes 041923-DRAFT.pdf](#)

6. UNFINISHED BUSINESS

7. NEW BUSINESS

7.A. 2023.17 & 2023.18 Public meeting and take comments regarding the UNE Master Plan and dimensional standards for the IN rezone for the University of New England. The rezone dimensions will affect 1 Hills Beach Road, Map 51, Lot 11; 583 Pool Street, Map 51, Lot 10 and 590 Pool Street, Map 51, Lot 18-1 in the IN zone.

[UNE Master Plan_Dimensional Stadards_SR_4_25_23.pdf](#)

[Complete UNE Master Plan 2022 Binder 3-1-23.pdf](#)

7.B. 2023.23 Shoreland Zoning Permit Application (GPE) for GL Beamon Trust to remove and reconstruct the existing non-conforming single family home at 6 Sand Dollar Haven (Tax Map 55, Lots 33) in the Coastal Residential and shoreland overlay zone.

[6 Sand Dollar Haven GPE Determination DCMG PB Report.pdf](#)

[6 Sand Dollar Haven FOF COA.pdf](#)

[Ltr to Planning Board-Beamon-septic.pdf](#)

[Planning Board Application - Beamon 03-15-2023.pdf](#)

[BEAMON - Existing Conditions.pdf](#)

[BEAMON - Proposed Relocation.pdf](#)

7.C. 2023.23 Greatest Practical Extent for Peter Cameron Hyzer & Jennifer Hyzer to rebuild an existing house at 280 Hills Beach Road-Building 1 (Tax Map 56, Lot 18) in the Shoreland CR/RP zone.

[2023.25 Hyzer 280 Beach Hills Road GFE DCMG PB Report.pdf](#)

[2023.25 Hyzer 280 Hills Beach Rd FOF COA.pdf](#)

[280 Hills Beach Planning Letter .pdf](#)

[Complete_with_DocuSign_280_Hills_Beach_Road_.pdf](#)

[Biddeford Hyzer 280-282 Hills Beach Rd HHE Revised.pdf](#)
[21100_280 Hill's Beach -SEALED_REVISED_230317 \(1\).pdf](#)

- 7.D. 2023.20 Sketch Plan Application for Travis and Lisa Wing to build a private way to standard for 3 new single family home lots and the existing lot (4 in total). Property is located at 1 Moxie Lane (Tax Map 77, Lot 22) in the SR1 & RF zones and the shoreland overlay.

[Sketch Plan Review Memo 1 DCMG.pdf](#)
[Documents Binder.pdf](#)
[Plan Set 03-13-23.pdf](#)
[Chekan Report 4-25-23.pdf](#)
[Saucier Report 4-24-23.pdf](#)

- 7.E. 2023.22 Site Plan Application for Brown Dog Carriers to build a commercial facility for company headquarters for their trucking company. Property is located on Landry Street (Tax Map 74, Lots 11 & 10-2) in the Industrial 2 zone.

[Staff Review- Brown Dog Carriers.pdf](#)
[Brown Dog site plan app packet 3-15-23.pdf](#)
[Site Plans-Brown Dog Carriers-3-15-2023.pdf](#)
[Full Stormwater Report 3-15-23.pdf](#)
[Report 4-24-23.pdf](#)
[4-25-23.pdf](#)

8. ADJOURN

The Board reserves the right to halt official business at 9:30 p.m. Items not heard at tonight's meeting shall be rescheduled to the next meeting of the Board. All materials pertaining to items on the agenda are available for public review at the Biddeford Planning Department, second floor, Biddeford City Hall during normal business hours.

City of Biddeford
Planning Board
April 19, 2023 6:00 PM City Hall
DRAFT

STATUS: Planning Board Meeting, April 19, 2023, 6:00 PM, Council Chambers & Zoom

Chair Patoine brought the meeting to order at 6:00 PM

- 1. PLEDGE OF ALLEGIANCE**
- 2. DECLARATION OF QUORUM/VOTING MEMBERS**
Larry Patoine (Chair), Michael Cantara, Sean Tarpey, Susan Deschambault (Associate Member voting for Roch Anger), Stephen Beaudette (Associate Member voting for Alexa Plotkin)
- 3. ADJUSTMENTS TO THE AGENDA**
Item 7B postponed per applicant request until May or June Planner's Business to be presented at end of meeting.
- 5. CONSENT AGENDA**
 - 5.A. Approval of Meeting Minutes from 3-15-23 and 4-5-23
MOTIONS: 6:01 PM
Cantara-Motion-To Approve the consent agenda as presented
Beaudette-Second
Motion passed unanimously
- 6. UNFINISHED BUSINESS-None**
- 7. NEW BUSINESS**
 - 7.A. 2023.14 Final approval for proposed changes to address three ordinance changes required by the General Permit for Stormwater Discharges from the Municipal Separate Storm Sewer Systems (MS4s).
The changes include:
 1. adoption of specific erosion and sedimentation control standards for proposed developments,
 2. requiring timely maintenance of private stormwater infrastructure after construction, and
 3. requiring timely removal of non-stormwater discharges from the City's separated storm drain system.The changes affect Part II Code of Ordinances, Chapter 34 Environment and Chapter 70 Utilities, and Part III Code of Ordinances, Land Development Regulations.
 - **Christy Rabasca Engineering/Stormwater Consultant spoke on changes to be made to stormwater ordinance.**
 - **No Public Comments****MOTIONS: 6:07 PM**
Cantara-Motion-To adopt amended stormwater ordinance as presented
Deschambault-Second
Motion passed unanimously

7.B. ITEM POSTPONED WILL APPEAR IN MAY OR JUNE. 2023.05 Public meeting and take comments regarding a Final Site Plan Review Application for Take Five Maine, LLC. The property is located at 394 Elm Street (Tax Map 20, Lot 10) in the B2 Zone. The proposed project is to demolish the existing structure and construct a 2-bay garage for oil changes.

7.C. 2023.17 Public meeting and take comments regarding the UNE Master Plan.

- Alan Thibeault of UNE presented the Master Plan
- One member of the public spoke
- The Board commented that the Master Plan was well written especially the traffic reports.

MOTIONS: 6:22 PM

Cantara-Motion-To approve the Preliminary Master Plan Application for UNE as written

Deschambault-Second

Motion passed unanimously

7.D. 2023.18 Biddeford Planning Board will have a public meeting and take comments regarding dimensional standards for the IN rezone for the University of New England. The rezone dimensions will affect 1 Hills Beach Road, Map 51, Lot 11: 583 Pool Street, Map 51, Lot 10 and 590 Pool Street, Map 51, Lot 18-1 in the IN zone.

- Alan Thibeault of UNE presented the request
- One member of the public spoke

MOTIONS: 7:29 PM

Cantara-Motion-To approve the preliminary request for dimensional standards for the IN rezone.

Beaudette-Second

Motion passed unanimously

4. PLANNER'S BUSINESS

4. A. Discussion of proposed Back Lot Ordinance

City Council returned the proposed Back Lot Ordinance presented at the last City Council Meeting to the Planning Board. Mr. Galbraith will present a rough draft of the proposed ordinance next meeting.

4. B. Inform Board on 208 Graham Street, Conditional Use-Not discussed

- Mr. Galbraith handed out the submittal for One Diamond Street Application that will appear before the Planning Board on May 17th.
- Mr. Galbraith informed the Planning Board that a subdivision that was approved in 2022 is coming back for an amendment. This was for Shawn Brown at 355 Pool Street. Mr. Galbraith said there were some controversy with this project. He asked about bringing this back to the Planning Board or reviewing this as a staff review project,

The Board asked the Planner for more direction on a couple of issues Planner will check with the City Attorney and report back to the Board.

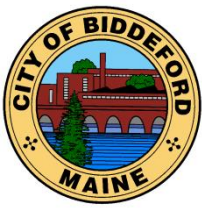
- Mr. Patoine talked to the Board about the possibility of taking a site walk around the UNE campus. It was unanimous that the Board would like to attend this site walk.

8. ADJOURN 7:51 PM

Planning Board Chair or representative

Date

These notes are not intended to be verbatim.



CITY OF BIDDEFORD

Planning and Development Department

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PLANNING BOARD MEMO

TO: Larry Patoine, Chair & Members of the Biddeford Planning Board

FROM: Eric Freeman, Assistant City Planner

DATE: April 25th, 2023

RE: **University of New England Institutional Master Plan and Dimensional Standards**

I. BACKGROUND:

The University of New England has developed a new "Institutional Zone Master Plan" as required by the City of Biddeford's Land Development Regulations (Institutional Zone (IN). Art. V, Sec 10, E).

This five-year Master Plan will guide growth, investment and development at the University's campus on Hills Beach Road through 2027. The Master Plan focuses primarily on building renovations and expansions, improvements to pedestrian mobility and changes to campus-wide signage.

As part of the development of the "Institutional Zone Master Plan" the University of New England conducted assessments of wetlands, vernal pools, wildlife, archaeological resources, and shore land impacts.

The assessment concluded that the majority of development included in the scope of the 2023-2027 Institutional Master Plan is occurring in areas that have already been impacted by development or have previously been screened by the Maine DEP as part of the Site Location of Development Act permit process. Since the 2023-2027 Institutional Master Plan is almost entirely focused building expansions and infill of the existing campus, no additional significant impact to wetlands or critical resources are anticipated as a result of the Master Plan.

A traffic analysis was also conducted as part of the Institutional Master Plan. The analysis found no notable high-crash locations within the study area and that no significant traffic impacts would be anticipated as part of the Institutional Master Plan. Several factors including relatively flat student enrollment and a shift to remote learning impacted the results of this study. The University has also included its parking and transportation demand management plan as part of its Master Plan.

It is the University's ambition to gradually transform the Biddeford campus into a "walking campus" that is safe for both pedestrians, bicyclists and motorists. The University intends to continue the dialogue with its immediate neighbors, as well as with Biddeford City officials and other stakeholders in the community to discuss any ongoing vehicular/pedestrian safety issues that might arise.

II. PREVIOUS PLANNING BOARD REVIEW

The University of New England presented the 2023-2027 Institutional Master Plan to the Planning Board on April 19th, 2023. The Planning Board voted unanimously to grant preliminary approval to the Master Plan and Dimensional Standards.

III. FINDINGS OF FACT

	<u>SUBJECT</u>	<u>INFORMATION</u>
1.	Applicant / Property Owner	Alan Thibaut - University of New England
2.	Owner	University of New England 11 Hills Beach Rd. Biddeford, ME 04005 207-602-2253
3.	Project Location	11 Hills Beach Rd. Biddeford, ME 04005
4.	Map/Lot	Multiple
5.	Size of Lot	580 Acres
6.	City Approvals Required	Institutional Master Plan Final Approval, Dimensional Standards Final Approval
7.	Existing Zoning	Institutional (IN)
8.	Overlay Zoning	N/A
9.	Existing Use	Institutional
10.	Limits of Disturbance	N/A
11.	New private or public road?	No
12.	Proposed Use	Institutional
13.	Uses in the Vicinity	Single-family residential, Resource Protection
14.	Water Supply	Public water
15.	Sewerage Disposal	Private septic
16.	Solid Waste Disposal	Private Hauler
17.	Fire Protection	City of Biddeford
18.	Ownership of Road	Public road , Private Road
19.	Waivers Needed/Requested	None
20.	Waivers Granted	None
21.	Fees Paid (LDR Attachment A)	All fees paid
22.	Traffic Movement Permit Required	Yes

IV. CONCEPTUAL DEVELOPMENT PROGRAM

The Institutional Master Plan outlines a series of projects identified as priorities for investment and University's continued ability to grow and meet the needs of its students. The 2023-2027 Master Plan focuses almost exclusively on building additions and renovations within the existing campus environment.

Additionally, the Conceptual Development program identifies changes to internal pedestrian circulation, landscaping, athletic facilities and signage to improve the campus experience.

As implied by the name, the CDP is conceptual only and represents the University's best efforts at outlining a direction for the physical development of the Biddeford campus, and may well require adjustment over the next several years as the University's needs continue to evolve. In addition, it is unlikely that each and every potential building and facility identified in this plan will actually be developed within the five-year time frame.

Housing:

- H1: New Residence Hall (~100,000 sq. ft.)

Academics:

- A1: Morgane Hall Addition
- Marine Science Patio Enclosure
- Marine Science Addition
- Creative and Fine Arts Addition
- Marcil Hall Addition

Support:

- S1: Storage Facility
- S2: Campus Center Additions and Renovations
- Waterfront Access for Recreation
- Waterfront Access for Research
- Petts Center Addition
- Pickus Center Addition
- Wastewater Treatment Facility Addition

Athletics:

- F1: Track / Field
- F2: Athletic Storage
- F3: Tennis Courts
- F4: Athletic Field
- F5: Athletic Storage

Each of these locations are identified in further detail Campus Development Program.

V. DIMENSIONAL STANDARDS

Background

Since the approval of its last Master Plan in 2016, The University of New England has acquired three additional parcels adjacent to its campus. Each of these parcels was previously zoned SR-1. Two of the three parcels are occupied by single-family home structures owned and used by the University. These three parcels were rezoned to be included in the Institutional Zone in June of 2022.

As part of the development of its "Institutional Zone Master Plan" the University of New England is required to develop dimensional standards for all parcels included in the Institutional zone.

Parcels added to the Institutional Zone

The following parcels are proposed to be included in the Institutional Zone.

- 1 Hills Beach Road (Tax Map 51, Lot 11)
- 583 Pool St. (Tax Map 51, Lot 10)
- 590 Pool St. (Tax Map 51, Lot 18-1)

As part of the proposed zoning change, the University of New England has developed dimensional standards for each of these parcels. These standards will be a framework for any future redevelopment of these parcels.

Given their proximity to existing residential areas, all three parcels are proposed to have a height limit of 35 feet. This is in line with the overall massing and dimensional standards of the campus complex, which emphasizes a gradual decrease in building height and massing moving from the “core” of the campus to the outer edges abutting residential neighborhoods.

VI. NEIGHBORHOOD AND COMMUNITY ENGAGEMENT

In addition to regularly scheduled University events and lectures open to the public, the University of New England engaged with leaders from the Hills Beach Association to discuss goals and objectives for the evolution of the campus. In addition, an annual Friends and Neighbors reception is held on campus every summer to gather and share information with our neighbors in the coastal area.

VII. SAMPLE MOTIONS

- I. Motion to APPROVE the 2023-2027 Institutional Master Plan and Dimensional Standards as presented
- II. Motion to APPROVE the 2023-2027 Institutional Master Plan and Dimensional Standards, with the following amendments;
 - A. _____.
 - B. _____.
 - C. _____.
 - D. _____.
- III. Motion to POSTPONE Board action on the 2023-2027 Institutional Master Plan and Dimensional Standards to _____ for the following reasons:
 - A. _____.
 - B. _____.
 - C. _____.
 - D. _____.

**UNIVERSITY OF NEW ENGLAND
INSTITUTIONAL ZONE
MASTER PLAN SUBMISSION
2023-2027**

Biddeford, Maine

February 27, 2023

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Appendix A Development and Design Standards

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Appendix B Plans and Drawings (Full Size)

Institutional Zone Ordinance

0 -Introduction

The University of New England is submitting the following “Institutional Zone Master Plan” as required by the City of Biddeford’s Land Development Regulations, Institutional Zone (IN) Art. V, Sec 10, E. A copy of this zoning ordinance is included at the rear of the Appendix of this the submission.

For the ease of the reader, each item in the Institutional Zone Master Plan Submission requirements appears in italics, exactly as it is printed in the actual zoning ordinance, and is followed by the University’s response. This format has been chosen to allow the reader to know what the requirements are as they read each section of the report. All plans and drawings are located at the rear of each relevant section of the report, in a reduced 11” x 17” format, or a note has been provided to direct the reader to the appropriate location of the relevant plan or drawing. Full sized plans are located in Appendix B.

The information presented in this five-year development strategy plan is conceptual only and represents the University’s best efforts at outlining a direction for the physical development of the Biddeford campus, and may well require adjustment over the next several years as the University’s needs continue to evolve. In addition, it is unlikely that each and every potential building and facility identified in the Campus Master Plan – Five Year Development Strategy plan will actually be developed within the five year time frame. The actual implementation of the building program will be driven by ongoing and continuously developing institutional needs and financial resources to initiate each individual building project.

1-Mission Statement and Institutional Objectives

(a) *Present UNE Mission Statement*

Mission, Vision and Core Values

The University of New England is directed by its Mission, Vision Statement and Core Values. These were utilized to create the Strategic Plan 2018-2023, ***Our World, Our Future.***

Mission

The University of New England prepares students to thrive in a rapidly changing world and, in so doing, to improve the health of people, communities, and our planet.

Vision

We will realize this mission by committing to a distinctive approach to education that will make UNE among the most experientially driven institutions of higher education in the nation. We will provide teaching and learning that conjoins problem-based and hands-on learning, liberal education, and professional training to immerse students in an educational experience that prepares them with:

- Habits of mind, such as cultural, quantitative, and information literacy, critical thinking, tolerance for ambiguity, and problem solving;
- Discipline-based knowledge in their chosen programs of study; and
- Professional competencies, including emotional intelligence, the ability to collaborate in diverse teams, communicate persuasively, and be a thoughtful leader.

We will be an institution that challenges students to learn broadly, master their professional skills, and ask probing questions. In this way, they will prepare themselves for further study and successful careers, deeply rewarding lives, and meaningful contributions to their communities and the world.

Core Values

We are guided by the following values, essential to the culture of the UNE community.

Student Centeredness - We put the aspirations, needs, and success of our students at the center of all we do. Diversity, Inclusion, Connection We believe the benefits of a richly varied campus community arise not only from the diversity of its people but also from a sense of belonging and the context this creates to explore and celebrate differences in backgrounds, experiences, and perspectives, underpinned by a sense of cultural humility and a commitment to ethical ideals.

Relentless Inquiry - We take nothing for granted and view thoughtful—even uncomfortable—questioning as essential to the pursuit of knowledge, contribution to society, and a life worth living. Our commitment to University-wide academic freedom is fundamental to this value.

Boundary Crossing - Solutions to the complex and varied challenges we face in our personal and professional lives, our communities, and society will not be found in any single discipline, college, physical location, or individual. Thus, our ability to move easily across such boundaries in order to collaborate with colleagues makes us better problem solvers and more likely of success in whatever ventures we undertake.

Learning Everywhere - We believe that teaching and learning should occur beyond traditional classrooms and laboratories—in any place ripe for inquiry and experimentation, including clinics, environmental and field-study sites, online forums, libraries, museums, theaters, and places of civic engagement, among many others.

Progressive Change - We are not afraid to take thoughtful risks in the pursuit of our shared goals.

Stewardship of Our Planet - We recognize that the health of individuals, communities, and the natural environment is essential to the survival of the planet and its inhabitants and to a well-functioning society.

UNE is at an enviable point in our evolution, a point from which we are poised to leap to ever greater heights.

At the center of our new strategic plan, ***Our World, Our Vision***, is a daring and expansive perspective on “health”: **We will establish UNE among the premier providers of education, expertise, and innovation for sustaining the health of our world’s people, communities, and natural environment.**

We are ready. Even a short list of our achievements demonstrates the force that UNE has become:

- We offer an exceptional return on our students’ educational investment. More than 93 percent of UNE undergraduates start a job or enter a graduate program within six months of receiving their diploma. The Brookings Institute ranks us number one among all of Maine’s colleges and universities for our ability to increase students’ career earnings.
- We prepare students to be culturally fluent members of an increasingly global workforce. UNE undergraduates study abroad at five-times the national average, spending semesters at UNE’s very own campus in Tangier, Morocco, as well as at affiliated campuses in Spain, France, and Iceland.

- We are Maine's leading provider of health professionals. Offering our state's only medical school and Northern New England's only dental school, as well as programs in pharmacy, nursing, and a range of other health professions, UNE plays a leading role in meeting the health care needs of underserved communities throughout the Northeast and beyond.
- We are a national leader in interprofessional health care education (IPE). Research clearly demonstrates improved health outcomes when patients are cared for by teams of health care professionals—doctors, nurses, physician assistants, physical therapists, and social workers working side by side. UNE prepares aspiring health professionals for such collaborations by having them learn and work beside other students representing the full range of health professions programs.
- We engage in important research and scholarship. The work of UNE researchers has improved breast cancer detection, led to better understanding of how the Zika virus spreads, demonstrated how dehumanizing speech leads to violence and discrimination, uncovered how psychiatric medications can cause diabetes and bone fractures in children, and even unlocked the secret life of sharks. Our success is demonstrated by 800 percent growth in external funding over the past decade. More importantly, UNE students benefit, too. Just under half of all our undergraduates work with faculty on research projects (compared to 23 percent nationwide).
- We graduate students who possess real world experience. Virtually all UNE students engage in some form of hands-on experiential learning, gaining invaluable disciplinary knowledge and interpersonal skills through internships, clinical rotations, service learning, and countless other opportunities to apply classroom knowledge in community organizations, businesses, government offices, and many other work settings.
- We are committed to fostering a robust marketplace of ideas. In an era when society has found itself increasingly divided along partisan ideological lines, we foster an environment in which the hard conversations essential to a true education still occur, challenging members of our community to reach beyond their intellectual comfort zones. Our Center for Global Humanities, George and Barbara Bush Lecture Series, P.D. Merrill Business Ethics Lecture, and President's Forum, among many other events, offer venues where a diversity of ideas can thrive through civil and respectful discourse.

We are ambitious and restless—an institution that is of the world. Look around, and you will find our students, faculty, and professional staff in places as diverse as Morocco and Iceland, and in clinics and field sites across our nation's cities, villages, forests, and oceans. You will see us learning from experiences in communities representing every form of human difference. These cultural, personal, and geographic connections reflect

the profound respect and concern that the UNE community holds for the health of our world— its people, its communities, and its physical environment. We couple this concern with our nimbleness, flexibility, creativity, and sense of urgency to make UNE a powerful source of innovation for a healthier planet.

We have a strong legacy and a prestigious set of programs in the health sciences. But we are a comprehensive university, and creating a healthier planet requires more than talented health professionals. It requires leaders from all disciplines, including the natural and social sciences, humanities and arts, business, policy and more—bringing their diverse and complementary skills to bear on the most pressing challenges of our world.

We are seizing on our foundational strengths to:

- Expand active and collaborative teaching and learning through pedagogical innovation and enhanced technologies;
- Enhance our commitment to experiential learning;
- Create even more opportunities for students, faculty, and professional staff to work together across academic disciplines and professional programs; and
- Adapt and scale up the solutions we find working on problems in local communities in order to address similar challenges around the globe.

These steps chart a bold new course for UNE:

We will be one of the nation’s top providers of education, expertise, and innovation for sustaining the health of our world’s natural environment, people, and communities.

This broad perspective on health requires us to focus on interactions among individuals, communities, and the environment. Moreover, it demands that we look for solutions to our world’s pressing challenges by drawing knowledge and expertise from many academic disciplines. This means exposing students to discipline-based knowledge, cross disciplinary habits of mind, and professional competencies that are discussed in this strategic plan. With these skills, UNE students will be ready to bring the fullest breadth of understanding and expertise to bear on improving the condition of people, society, and our planet.

Inspired by this vision and guided by this plan, UNE will empower students to anticipate and meet the challenges of this new world and to become active leaders in creating its future.

UNE—for the health of our world.

- (b) *A statement of any anticipated changes in the institution's mission over the next five (5) years.*

There are no anticipated changes to the University's mission over the next five years.

The University is a private, non-profit corporation with recognized tax exempt status under IRS Code Section 501(c)(3), and must abide by the rules of tax exempt status in order to maintain that standing. Accordingly, only those uses permitted by that code would be pursued.

- (c) *The institution's objective with respect to growth and changes over the next five (5) years include:*

1. Provide additional student support facilities and services. This would help to further develop the sense of "Campus Community".
2. Integrating the medical college into an academic healthcare campus in Portland will then allow for the full transformation of the Biddeford Campus as the undergraduate residential campus, allowing for the growth of marine programs, business and entrepreneurship, digital sciences, criminal justice, the arts and others. The spaces vacated by the relocation of the medical college will be transformed, retrofitted and repurposed to support UNE's undergraduate programs that will address critical workforce needs in the state and region.
3. The University of New England will be nationally recognized with programs of excellence and innovation in health professions and the arts and sciences. The University will have well developed centers of excellence in research, and will have integrated educational, research, and science programs that are based on collaborative, interdisciplinary partnerships.
4. Cocurricular programs are central to the mission of the University for educating students and supporting the personal growth of all members of the university community. Athletic programs will achieve demonstrable success enriching the University and aiding in the recruitment, retention and overall satisfaction of the student body.
5. Increase diversity in national and international populations.
6. UNE will have a strong program of service at all levels of our society and be a leader in environmental stewardship.
7. The planning and integration of our academic, residence life and support facilities will be viewed as a model for building interdisciplinary, team based learning and scholarly communities.

See sections 3 and 4 for detailed information on growth projections

2-Existing Physical Conditions

a. A scaled plan at a scale of not more than 1" = 200' showing the location of all existing buildings, structures, athletic fields and facilities, parking, walkways, service areas, and other impervious surfaces and the height of all buildings and structures referenced to the National Geodetic Vertical Datum (NGVD).

Drawings MP-101, Existing Conditions Plan and MP-105, Existing Conditions Plan reflect the information requested under this section. Existing building heights (NGVD) are noted on those plans, which are located at the rear of this section.

b. A scaled plan at the same scale as the existing conditions plan showing the location of all existing utilities, sewer and water systems, and storm water drainage facilities.

Drawing MP-102, Existing Utility Plan, located at the rear of this section, shows existing utility information on the campus.

c. A natural resources inventory and analysis showing the location of all significant natural resources within those areas of the campus that are already developed or where development activities including clearing or filling are proposed or that will be potentially impacted by proposed development activities. The analysis shall assess the significance of these resources and the issues they raise with respect to the Master Plan. This shall include a plan at the same scale as the existing conditions plan showing the locations of the significant resources.

For locations of potential areas to be developed, please refer to the Campus Master Plan - Five Year Development Strategy plan in the back of section 10. Several areas of forested wetlands are located on the undeveloped portions of the campus. None of these are remarkable, nor, other than portions of wetlands located within 25 feet of streams, are they deemed to be of special significance by Maine Department of Environmental Protection, MeDEP.

Based upon information obtained from previous projects on the campus, wetland mapping and delineation, and field observations by the University's wetland scientists, it was determined that there are no significant natural resources located in developed areas of the campus or that would be impacted by the proposed development. Please see the summary of this review that was prepared by Site Design Associates, which is included at the rear of this section.

There are two drainage courses meeting the Maine Department of Environmental Protection's (MeDEP) definition of streams located on the campus as shown on Drawing MP-103, Topographic and Natural Resources Plan.

There were 7 vernal pools identified, by Joe Noel, a wetland scientist, on the undeveloped portion of the campus, located between Route 9 and the Old Pool Road.

The approximate locations of these are shown on drawing MP-103, Topographic and Natural Resources Plan. These are labeled Vernal pools A-E, 1, and 2. There are three additional vernal pools, identified as F, H, and I located on the recently developed parcel, which is southerly of Newtown Road and westerly of Route 9.

All of the vernal pools southerly of Newtown Road and Westerly of Route 9 were deemed by the Army Corp of Engineers to have been “impacted”, during the development of this parcel, and the required mitigation was completed. These “impacted” vernal pools are monitored annually by UNE environmental studies classes and vernal pool H continues to be a viable as vernal pool, with its level of viability consistent with the annual variability of comparative vernal pools on campus.

Activities in and/or adjacent to the vernal pools are regulated by the MeDEP under the Natural Resources Protection Act (NRPA) and by the Army Corps of Engineers (ACOE). While it appears that no significant impacts will arise from the proposed development, permits or amendments will be sought from each of these agencies, as required.

The Saco River and associated wetlands are located northerly of the campus. There are several potential projects within 500’ of the Saco River. These include an addition to the existing Marine Science Research Center in support of the ongoing research activities, a new waterfront access research pier facility to allow research related activities to year round, converting the temporary recreational waterfront access facility to a permanent facility in support UNE’s crew and sailing programs, recreational waterfront access from 1 Hills beach Road, ADA compliant trails along the waterfront, an addition to the wastewater treatment facility, an addition to Decary Hall, an addition to the Petts Center, and addition(s) to the Campus Center. Development of these projects will require compliance with the regulations of and approval from the Saco River Corridor Commission, as well as the other requisite permitting agencies.

Short Nosed Sturgeon and Atlantic Sturgeon, endangered and threatened species, have been located by University researchers in the Saco River adjacent to the campus, and were the subject of several research initiatives at the University of New England. State records indicate that the imperiled Hollow Joe-Pye Weed has been observed in the vicinity of, but not on University properties proposed for development. Spotted Turtles, a threatened species in State of Maine, have been observed on the University’s undeveloped land parcel, north of the main campus. No rare or endangered species were observed in any areas of existing development nor in areas proposed for development under this Master Plan Submission.

The University will comply with all applicable permitting provisions at the time of any new development, including any applicable City of Biddeford, MeDEP Site Location of Development Act (SLODA), MeDEP Natural Resources Protection Act (NRPA), and the U.S. Army Corps of Engineers (ACOE) regulations.

If there are specific questions or concerns related to a particular wetland or wildlife impact connected with any proposed development in this area, those detailed questions must and will be addressed during the site plan review process.

d. An historic and archeological resources inventory and analysis showing the location of any known historic or archeological resources and any area with potential as an area of historic or archeological significance within those areas of the campus that are already developed or where development activities including clearing or filling are proposed or that will be potentially impacted by proposed development activities. This shall include a plan at the same scale as the existing conditions plan.

The University of New England has conducted several historical and archeological surveys on the Biddeford campus in conjunction with prior development activities. Drawing MP-104, Archaeological Survey Plan, located at the rear of this section, depicts the locations of phase III archaeological surveys undertaken during the site selection process for the Marine Science and Research Center in 2000. The studies, conducted by Archaeological Research Consultants, Inc. studied the undeveloped area overlooking the Saco River between the river and Hills Beach Road. The investigations revealed a number of positive test pits within the band of undeveloped land along the river. During the construction of the Marine Science and Research Center, a number of sites were monitored during excavation and artifacts were recovered. The potential work proposed in and around the Marine Science Center may require additional inspections and monitoring.

The rest of the potential 5-year development northerly of Hills Beach Road will occur in areas that have already been significantly disturbed, as a consequence of previous construction and earthmoving activities. Therefore, the development as proposed on the Campus Master Plan - Five Year Development Strategy plan in the back of section 10, is unlikely to impact areas of historical or archeological significance.

In 1993, Emerson W. Baker undertook a study of the Alford Center for Health Sciences site. His investigation determined most of the area had undergone significant disturbance in the past. No prehistoric artifacts were recovered during this investigation, although Baker did note that original ground surface is present close to Stella Maris.

In reviewing the 2003 Master Plan the Maine Historic Preservation Commission had suggested that a Phase I Archaeological Survey of the area within 200 feet of Stella Maris Hall should also be undertaken prior to ground disturbance in that area. In August 2003, Emerson Baker, a Maine certified Level 2 Historical Archaeologist, conducted a Phase 1 survey of this area and found no significant remains in the test excavations. He concluded that “there would appear to be virtually no undisturbed land left within 200 feet of Stella Maris” and that “no further testing within 200 feet of Stella Maris is needed”.

Also, in review of the 2003 Master Plan the Maine Historic Preservation Commission has suggested that a prehistoric archeologist should be present during the ground disturbing activities associated with the construction of Featherman Hall, to monitor these activities.

The Commission reviewed the monitoring report prepared by Rebecca Cole-Will of TRC which concluded “Archaeologist monitored ground disturbing activities on the ball field at the University of New England during a project to construct a new residence hall. Much of the area, if not all of the previous ball field, had been extensively disturbed in the past by installation of utility infrastructure. No cultural materials or features were identified.”

Understanding the archeological significance of the area, a UNE Archeology course is taught each summer, to further our knowledge of the past and to provide students field experience in archeology.

Much of the proposed development will be located southerly of Hills Beach and Old Pool Roads, and southerly of the Newtown Road and westerly of Route 9. These areas consist of ledge outcroppings with substantial slopes in some areas. These areas are located a considerable distance from the Saco River. In conjunction with previous projects (Facilities Management Building, Marcil Hall, and previous master plans), the University’s consultants and the Maine Historic Preservation Commission have found that there are no significant resources (historic, architectural, or archaeological) affected in these areas.

None of these aforementioned studies or results should preclude construction of facilities as envisioned in the Master Plan.

Several cemeteries are also located on or near the campus; these are shown on Drawing MP-101, Existing Conditions Plan. The creation of the waterfront access storage facility is near an unmarked gravesite location. However, the existing structure, which is to be expanded, is located in an existing parking lot, so should not impact the unmarked gravesite location. No other development is proposed proximal to these areas.

e. Data on the existing lot coverage and lot coverage ratio

Lot coverage information is shown on the Restrictions on Developable Areas Plan, which can be found at the back of this section.

Site Design Associates

Consulting Engineering and Land Planning

December 19, 2022

Mr. Alan Thibeault
University of New England
11 Hills Beach Road
Biddeford, Maine 04005

RE: 2022 Master Plan

Dear Alan:

We are writing to comment on Section 2.c., of the Master Plan, which requires a natural resources inventory and analysis and an assessment of issues raised with respect to the master plan. Drawings MP-103 and MP-105 show the wetlands and vernal pools currently located on the existing campus. We have reviewed the Campus Master Plan - Five Year Development Strategy plan, and the narrative you have prepared in fulfillment of the requirements for this section.

We note that the majority of proposed development will be located in areas previously screened by the Maine DEP as part of the Site Location of Development Act permit process. The screening included historical, wetland, vernal pools, and wildlife habitat impacts in areas proposed for development, and in other areas of the campus with the potential for development.

As noted on Drawing C-103, there are 7 vernal pool areas located on the undeveloped portion of the campus between Old Pool Road and Route 9. Since the last initial mapping, vernal pools C and D have merged into one complex. Based upon our monitoring, vernal pool system C/D and vernal pool 1 both continue to meet the criteria for being designated as a significant vernal pool under the Natural Resources Protection Act. Development within 250 ft of these areas is regulated by the Maine DEP. A very small portion of F3, Tennis Courts, may be located in the outer limit of the 250 ft regulatory area, similarly to the existing tennis courts. This will be reviewed with the regulators during the permitting process.

The majority of the development shown on the master plan westerly of Route 9 and southerly of Newtown Road, would occur in areas where natural resource impacts were reviewed and approved by the Maine DEP and Army Corps of Engineers in 2009, and no additional significant impact is anticipated as a result of the master plan.

Several of the proposals involve waterfront development, including S4, the Waterfront Access for Research. This area was investigated extensively when planning was undertaken for the Marine Science Center. The waterfront development will require permits from the Maine DEP in order to proceed with construction. No significant impacts to natural resources are anticipated as a result of the waterfront development programs.

23 Whitney Way Topsham, Maine 04086
Phone: (207) 449-4275 email: info@sitedesignassociates.biz

Mr. Alan Thibeault

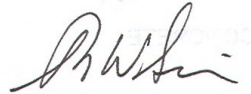
2/27/2023

Page 2 of 2

Based on the development plan, the remaining development would occur in the central portions of the campus, and would primarily consist of building additions and infill development. There are no significant natural resources that will be impacted by the development proposed between Hills Beach Road and the waterfront, nor by the development proposed between Hills Beach Road and Route 9.

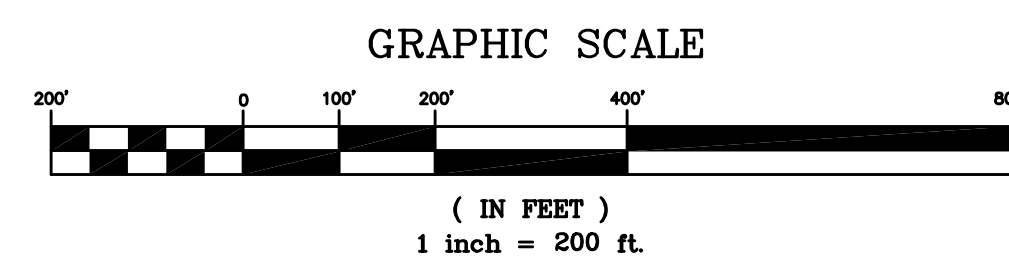
Please let me know if you require additional information relative to this topic.

Sincerely,
Site Design Associates

A handwritten signature in black ink, appearing to read 'Tom Saucier', with a stylized flourish at the end.

Tom Saucier, P.E.
President

<u>BUILDING KEY</u>		<u>ROOF ELEVATION (NGVD-29)</u>	<u>BUILDING HEIGHT (PER ORDINANCE DEFINITION)</u>
FACILITIES MGT.	1	57.0	18.0
CREATIVE AND FINE ARTS	2	83.0	22.0
BUSINESS OFFICE	3	83.0	18.3
WELCOME COTTAGE	4	69.0	16.0
PETTS CENTER	5	91.0	27.5
MARCIL HALL	6	96.1	40.0
GREGORY HALL	7	54.0	16.0
LEARNING ASSISTANCE CENTER	8	44.0	14.0
WW TREATMENT PLANT	9	23.7	9.6
DECARY HALL	10	106.6	69.4
KETCHUM LIBRARY	11	60.6	30.4
STELLA MARIS	12	87.3	36.9
HAROLD ALFOND CENTER FOR THE HEALTH SCIENCES	13	93.8	55.3
CAMPUS CENTER	14	57.3	34.4
ASSISI HALL	15	57.9	31.2
SIENA HALL	16	61.5	30.8
PADUA HALL	17	54.1	30.4
AVILA HALL	18	64.3	40.1
WEST RESIDENCE HALL	19	80.0	47.0
EAST RESIDENCE HALL	20	80.0	47.0
FREDERICK HALL	21	48.6	23.2
MARINE SCIENCE AND RESEARCH CENTER	22	67.0	33.0
HOUSING PARK	23	34.0	13.5
CHAMPLAIN HALL	24	84.2	48.5
FEATHERMAN HALL	25	70.5	50.0
MORGANE HALL	26	84.0	35.0
PICKUS BIOMEDICAL CENTER	27	83.3	44.3
BUSH CENTER	28	66.3	40.0
SOKOKIS HALL	29	95.9	45.1
HAROLD ALFOND FORUM	30	97.3	46.4
LEONARD HALL	31	62.5	23.2
DANIELLE N. RIPICH COMMONS	32	79.0	49.83
1 HILLS BEACH ROAD	33	75.1	17.5
590 POOL STREET	34	77 +/-	14 +/-



THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SITE DESIGN ASSOCIATES, ANY ALTERATIONS, OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SITE DESIGN ASSOCIATES.

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THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SITE DESIGN ASSOCIATES, ANY ALTERATIONS, OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SITE DESIGN ASSOCIATES.

[illegible]



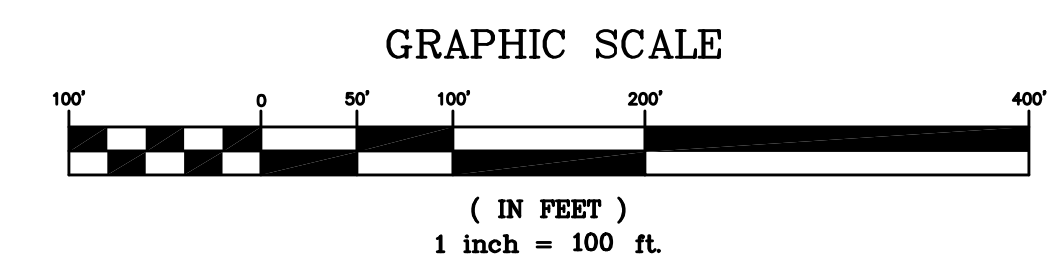
<u>BUILDING KEY</u>		<u>ROOF ELEVATION (NGVD-29)</u>	<u>BUILDING HEIGHT (PER ORDINANCE DEFINITION)</u>
FACILITIES MGT.	1	57.0	18.0
CREATIVE AND FINE ARTS	2	83.0	22.0
BUSINESS OFFICE	3	83.0	18.3
WELCOMÉ COTTAGE	4	69.0	16.0
PETTS CENTER	5	91.0	27.5
MARCIL HALL	6	96.1	40.0
GREGORY HALL	7	54.0	16.0
LEARNING ASSISTANCE CENTER	8	44.0	14.0
WW TREATMENT PLANT	9	23.7	9.6
DECARY HALL	10	106.6	69.4
KETCHUM LIBRARY	11	60.6	30.4
STELLA MARIS	12	87.3	36.9
HAROLD ALFOND CENTER FOR THE HEALTH SCIENCES	13	93.8	55.3
CAMPUS CENTER	14	57.3	34.4
ASSISSI HALL	15	57.9	31.2
SIENA HALL	16	61.5	30.8
PADUA HALL	17	54.1	30.4
AVILA HALL	18	64.3	40.1
WEST RESIDENCE HALL	19	80.0	47.0
EAST RESIDENCE HALL	20	80.0	47.0
FREDERICK HALL	21	48.6	23.2
MARINE SCIENCE AND RESEARCH CENTER	22	67.0	33.0
HOUSING PARK	23	34.0	13.5
CHAMPLAIN HALL	24	84.2	48.5
FEATHERMAN HALL	25	70.5	50.0
MORGANE HALL	26	84.0	35.0
PICKUS BIOMEDICAL CENTER	27	83.3	44.3
BUSH CENTER	28	66.3	40.0
SOKOKIS HALL	29	95.9	45.1
HAROLD ALFOND FORUM	30	97.3	46.4
LEONARD HALL	31	62.5	23.2
DANIELLE N. RIPICH COMMONS	32	79.0	49.83
1 HILLS BEACH ROAD	33	75.1	17.5
590 POOL STREET	34	77 +/-	14 +/-

- POSITIVE TEST PIT (TYP)
- NEGATIVE TEST PIT (TYP)
- TEST PIT IDENTIFICATION (TYP)
- APPROXIMATE TREE LOCATION

SACO RIVER

— EXISTING FOUNDATION
AND DUG WELL

- A PHASE 1 ARCHAEOLOGICAL SURVEY WAS PERFORMED IN 2003 WITHIN A 200' RADIUS OF STELLA MARIS HALL. THE RESULTS WERE NEGATIVE



THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SITE DESIGN ASSOCIATES, ANY ALTERATIONS, OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SITE DESIGN ASSOCIATES.

[illegible]

3-Programs and Activities

a.1 Current Educational Programs and Degree Offerings –

Undergraduate Programs

Majors

Animal Behavior
Applied Exercise Science
Applied Mathematics
Applied Social and Cultural Studies
Aquaculture and Aquarium Sciences
Art & Design Media
Art Education K-12
Athletic Training 3+2 Program
Biochemistry
Biological Sciences
Business Administration
Chemistry
Communications
Criminology
Data Science
Dental Hygiene (4-Year B.S.)
Educational Studies
Elementary Education
English
Environmental Science
Environmental Studies
Global Studies
Health, Wellness and Occupational Studies
History
Interdisciplinary Studies in the Humanities
Laboratory Science
Marine Affairs
Marine Entrepreneurship
Marine Sciences (Marine Biology Track)
Marine Sciences (Oceanography Track)
Marine Sciences (Medical Sciences)
Medical Biology (Pre-Physician Assistant Track – MPA)
Neuroscience
Nursing (4 Year B.S.N. Program)
Nursing (Accelerated B.S.N. – 16 Months)
Nutrition
Political Science
Pre-Pharmacy
Psychology
Public Health
Secondary Education
Social Work
Sociology

Special Education
Sport and Recreation Management
Sustainability and Business
Undeclared: GUST (Guided Undergraduate Studies)

Minors

Animal Behavior
Anthropology
Applied Mathematics
Aquaculture and Aquarium Sciences
Art
Art Therapy
Biochemistry
Biological Sciences
Biophysics
Business Administration
Chemistry
Climate Change Studies
Coaching
Communications
Computer Science
Economics
Education
English
Environmental Studies
Geographic Information Systems
Health, Law & Policy
Health, Medicine and Society
History
Latin American Studies
Marine Affairs
Marine Science
Medical Biology
Mental Health Rehabilitation
Neuroscience
Nutrition
Philosophy
Political Science
Psychology
Public Health
Social Innovation and Entrepreneurship
Social Work
Sociology
Special Education
Sport and Recreation Management
Women's and Gender Studies
Writing

Graduate Programs

Athletic Training (M.S.)
Biological Sciences (M.S.)
Marine Sciences (M.S.)
Professional Science Master's (PSM) in Ocean Food Systems
Osteopathic Medicine (D.O.)

a.2 Other regularly scheduled programs or activities offered or hosted by the institution:

Conferences and Events

Office of University Events & Conference Services

The Office of University Events & Conference Services hosts a wide range of seminars, workshops, training programs, meetings, summer camps, alumni events and many other special programs and events on both the Biddeford and Portland Campuses. These events are scheduled throughout the academic year and summer term. The following is an illustrative, but by no means complete list of University client organizations who regularly seek the assistance of University staff and facilities and are expected to contract with the University in the future for more programs.

Health

American Diabetes Association
Autism Society of Maine
Multiple nursing associations across Maine
Epilepsy New England
Multiple Sclerosis Great Maine Getaway
Narrative Informed Research on Aging

University Events/Education

Educate Maine
UArtic Events
Homecoming and Alumni Events
Deborah Morton Society
Sexual Assault Forensic Nursing Training
UNE Healthcare Exploration Camps
Social Security and Retirement Seminars

Government and Service

Biddeford City Council
Center for Excellence in Public Health events
Biddeford Cultural Heritage Center
Hills Beach Association Events
Junior League
Rotary Club

Sports

Team Envision
Zero Gravity
Seacoast United
Maine Mussels
Biddeford Youth Lacrosse
Maine Lacrosse Coaches Alliance
Southern Maine Middle School Hockey
New England Offensive Line Clinic
BobCat Big Man's Camp
Biddeford HS Hockey Boosters
Casco Bay Youth Hockey
New England Beach Bash Hockey
Adult Hockey leagues
207 Volleyball
HS Hockey
Maine Lightning Soccer
Biddeford Youth Hockey

Camps/Social Events

Semester at Sea Reunion
Biddeford class reunion
Memorial Reception
BYU Youth Summer Camp
Camp Pals

Corporate

Volk Packaging
ATX Advisory
Colby Engineering
SMRT Strategic Planning
Navadise Media

a.3 Current and Projected Enrollment of Full-Time and Part-Time students by head count based upon the most recent IPEDS Report

The base line year used for this report was the 2022-2023 academic year, which runs September through August. The 5-year projections are for the 2023-2024 through the 2027-2028 academic years.

The following clarifications are important to understand when reviewing the information related to enrollment baseline data. The most recent IPEDS (Integrated Post-Secondary Education Data Survey) was used as the source for this information. It was then adjusted as follows:

- The official IPEDS submitted by the University to the United States Department of Education includes both campuses. This information can be found at the following website:
<https://nces.ed.gov/ipeds/datacenter/institutionprofile.aspx?unitId=acb1acafb0b2>
- For the purposes of this document, all data was adjusted to include the Biddeford campus only, unless specifically indicated otherwise.
- Enrollment data is by head count (i.e., all full time and part time students.)
- The enrollment data excludes duplicated headcounts. Thus, it excludes summer students already included in the fall semester.
- Enrollment data is adjusted for on-campus students only. It does not include off-campus enrollment – (i.e., 3rd and 4th year medical students, Masters in Education, Teacher Certification, Continuing Education, certificate programs, etc.) Off-campus is defined as spending less than 10 hours per week on campus, or less than one trip per week to campus.

Enrollment Projections - Biddeford campus only for Fall of:						
	2022	2023	2024	2025	2027	2027
Residential	1505	1410	1420	1440	1475	1515
Commuter	897	1095	745	750	760	775
Total	2402	2505	2165	2190	2235	2290

a.4 Current Employment by Type of Positions and Full-Time/Part-Time Status based upon the most recent IPEDS Report

The base line year used for this report was the 2022-2023 academic year, which runs September through August. The 5-year projections are for the 2023-2024 through the 2027-2028 academic years.

The following clarifications are important to keep in mind when reviewing the data related to employee baseline data. The most recent IPEDS (Integrated Post-Secondary Education Data Survey) was used as the source for this information. It was then adjusted as follows:

- The official IPEDS submitted by the University to the United States Department of Education includes all UNE campuses. For the purposes of this document, all data was adjusted to include the Biddeford campus only, unless specifically indicated otherwise.
- UNE Employee data is by head count. Full time (FT) equates to 40 hours per week. Part time (PT) equates to less than 40 hours per week. Employees who work less than 20 hours are considered temporary but are required to be included in the IPEDS report as part time employees. The PT employees represented in the chart below are comprised primarily of adjunct faculty and staff who are classified as temporary employees. Non-University contract employees (dining services, bookstore, etc.) regularly scheduled to work on the University Campus are not included in these numbers, but are included in the parking demand calculations.

Employee Projections - Biddeford campus only for Fall of:												
	2022		2023		2024		2025		2026		2027	
Status	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
FACULTY	178	72	183	44	110	44	120	44	130	44	140	44
STAFF	378	23	381	18	328	18	338	18	348	18	348	18
SUBTOTAL	556	95	564	62	438	62	458	62	478	62	488	62
TOTAL	651		626		500		520		540		550	

a.5 Number of Persons Living on Campus

Residential and Commuter Student Projections - Biddeford campus only for Fall of:						
	2022	2023	2024	2025	2026	2027
RESIDENTIAL STUDENTS	1505	1410	1420	1440	1475	1515
COMMUTER STUDENTS	897	1095	745	750	760	775
TOTAL	2402	2505	2165	2190	2235	2290

b. Narrative describing how the programs and activities and the number of students and employees, campus residents and program participants are anticipated to change over the next five years.

The University of New England values student-centered, multi- disciplinary and interdisciplinary programs that meet the highest ethical standards to achieve excellence in

support of an integrative approach to the liberal arts, health and the environment, as well as scholarship and research.

The University of New England recognizes that as a comprehensive University, it must continually upgrade and diversify its curriculum, degrees offered and its facilities in order to remain competitive and attract the best students and faculty. Anticipated changes in programs will be partially driven by demographics and challenges linked to industry. Program expansion and changes will also respond to the need to educate an older population, while preparing traditional students to participate in life-long learning experiences. With the changing pedagogy resulting from the rapidly changing technological advances, the University has put significant effort into its On-line offerings. These programs are integrated into the existing programs, as well as those entirely On-line, affording the campus students additional opportunities as well as the ability to complete their degrees in a shorter time period. Additionally, these On-line offerings allow for a greater percentage of UNE students to study abroad while maintaining their curriculum requirements.

With the push towards On-line learning, the on-campus Undergraduate population is anticipated to have relatively insignificant growth over the next five years, as indicated in the tables above. However, the overall campus population will reduce significantly in the 2024-2025 academic year, with the relocation of the College of Osteopathic Medicine to the Portland Campus.

The University may also have to adjust programs over time. As a university recognized for its strength in the health professions, we foresee a need to participate in improving the quality of life for people in remote or rural areas of the State. The College of Osteopathic Medicine (COM) health program will assess its academic role in preparing students to work and provide health care for the elderly, Native American, and immigrant populations of the State.

UNE's unique role as the largest educator of health professionals for Maine, its select and comprehensive breadth of health professions degree programs, and its documented leadership in team-based health professions education have made the University an enviable institution in New England and the nation. Relocating the College of Osteopathic Medicine to Portland in July 2024 will "close the loop," creating a comprehensive, fully integrated health sciences campus that can efficiently and effectively tackle Maine's deepest health problems through systemic, coordinated education and clinical practice.

The relocation of the College of Osteopathic Medicine to UNE's Portland Campus will result in a decrease in campus population, bringing the totals to pre-2010 numbers. This move will also afford the opportunity to repurpose the Alfond Center for Health Sciences building on the Biddeford campus to expand existing academic programs and develop new programs to address the critical workforce needs for the state.

The University will also have to evaluate its role in:

- Multimedia pedagogy and multicultural education
- Dual enrollment in institutions
- Providing broad-based resources for distance education
- Developing Competency Based programs to allow for students to opt out of courses by demonstrating competency in those areas
- Developing additional master's degree programs
- Developing nontraditional learning programs

Like many other colleges and universities, the University of New England relies heavily on the income generated from its numerous conferences and continuing education programs to fund a significant portion of the University's operating costs. In doing so, the University avoids passing on those costs to its students in the form of increased tuition. Therefore, the University is able to remain competitive with other educational institutions. Towards that end, new opportunities are continually being explored as a way of operating year-round conferences and continuing education programs. During this vetting process the University considers its physical resources, including parking, and only accepts programs that can fit within the resources available. Thus, any large programs accepted during the academic year would typically be conducted during non-peak academic times.

The University projects the majority of future events and activities in this area will be similar to those listed in section 3.a.2 of this report, and the Office of University Events & Conference Services will continue to expand the current client listing. The COVID Pandemic has had a significant impact on the visitation to campus. UNE expects to increase the number of participants by approximately 25% in the first year of the Master Plan and approximately 5% per year thereafter. This will return the visitation numbers to be closer to the pre-COVID summers.

Below is a table that shows the current daily average and peak number of Office of University Events & Conference Services participants.

<i>Current Total, Average and Peak Conferences Participants for 2021-2022 Biddeford campus only</i>			
	Total	Daily Peak	Daily Average
Fall Months (Sept-May)	4769	530	17.5
Summer Months (June-Aug)	1472	491	16

4- Educational, Research, Residential, Support and Athletic Facilities

- a. *A description and plan identifying what buildings and facilities are currently used for these purposes.*

A campus plan illustrating the location of all the University Facilities, drawing MP-101, Existing Conditions Plan, is located at the rear of Section 2.

1 Hills Beach Road – This 4800sf residential style structure is a residence of the President of UNE. In 2012 it was renovated to allow it to serve as a function space for more intimate gatherings of students, trustees and special guests.

590 Pool St – This 864sf residential style facility is currently vacant. It was constructed in 1981.

Alfond Center for Health Sciences - This 72,372 SF four-story masonry building provides classroom, office, research, and laboratory space for the COM and CAS. It was built in 1996. An Osteopathic Medicine and Manipulation Clinic is located on the third floor where faculty and medical fellows see patients on a limited basis. A café is located on the first floor.

Alumni Cottage (3 Hills Beach Rd) - This 2-story wooden building is used as an office complex.

Assisi Hall - This 16,293 SF three-story brick building is a residence hall that was built in 1962. Rooms are double occupancy throughout with shared restrooms on each floor. A boiler plant is attached to this building.

Athletic Fields/Courts - Two adjacent grass fields, located along Hills Beach Road, are used as intercollegiate fields for soccer, rugby and some organized intramural programs. The artificial turf, Blue Storm Stadium is home to UNE's football and softball teams and is located west of Route 9. The artificial turf, Blue Bolt Field is utilized for the "stick" sports, lacrosse and field hockey, as well as for intramurals. Four tennis courts and a 1/3 mile recreational track are also located on campus.

Avila Hall - This 18,620 SF four-story brick building is a residence hall that was built in 1970. Rooms are typically double occupancy with shared restrooms on each floor. A 2,140 SF lounge is attached for a total of 20,760 SF.

Campus Center - This 58,579 SF masonry building houses recreational facilities, gymnasium, swimming pool, athletic offices, a snack bar/lounge, campus store, and three multi-purpose meeting rooms. It was built in 1989. A 2,675 SF chiller plant was added in 1996 to provide cooling for portions of the campus.

Champlain Hall – This 64,122 SF, four-story masonry structure, was opened in 2005. It is used to house students in double bedroom, suite style accommodations. A staff apartment is located on the main floor.

Creative and Fine Arts (592 Pool Rd) - This 5,120 SF, 2.5 story wooden structure is used as an academic support space and houses art studios and faculty offices. It was built in 1988 as a residence.

Decary Hall - This 77,502 SF masonry structure was built in 1939 with a major addition in 1949. It houses classrooms, research labs, skill development labs, computer labs, and offices.

East Hall - The East Hall opened in the fall of 2002 and is 58,410 SF. It is a masonry building with suites that accommodate four students sharing a living room, kitchenette, and two bathrooms with a private bedroom for each student. A lounge is included in East Hall, as well as support offices for housing staff. A faculty apartment is also included in the building to facilitate a learning community.

Facilities Management Building - This 18,547 SF steel frame building with metal panel walls includes office space for Facilities Management, the Department of Campus Services, and the Department of Safety and Security, central receiving and warehousing for the campus, maintenance shops for the trades and Copy/Mail Services. It opened in the Fall 2002.

Featherman Hall - This 42,018 SF four-story brick building is a residence hall that was built in 2007. Rooms are typically double occupancy with communal restrooms on each floor. There are two classrooms located on the first floor, which serve to assist in promoting a Living and Learning Community environment.

Finance and Administration/Business Office – This 6,960 SF metal building was constructed in 2017, and provides office and support space for the Finance and Administration functions.

Frederick Hall - This two-story 12,156 SF brick-veneer, wood framed building is a residence hall that was built in 1964. Rooms are typically double occupancy with shared restrooms on each floor and wing.

George and Barbara Bush Center - This three-story, 12,422 SF brick building was built in 2008. It houses a café, special collections, meeting and executive office space.

Gregory Hall - This 478 SF single story wood building built in early 1900's is used as an office building.

Harold Alfond Forum – This 143,392 SF, pre-engineered facility, houses an ice area, performance courts, locker rooms, concessions/snackbar, fitness and training centers, offices, classroom and laboratory spaces to support the university's athletic and academic programs. It was originally constructed in 2012, and was added onto in 2018.

Housing Park - The University built twenty one-story and two-story wood units in 1970 to house students. These were removed in the Spring of 2005. One residential unit, re-built in 1993, remains at this site.

Human Resources (588 Pool Rd) - This 4,393 SF wooden structure is used as an office building

Ketchum Library - This three-story 23,688 SF masonry building is the campus library. It was constructed in 1970 with an 8,000 SF addition constructed in 1991.

Kiosk - This canopy structure is located on the waterfront at Jordan Point.

Leonard Hall – This 5,798 SF masonry structure was renovated in 2013 and serves as a large interactive classroom facility. It is attached to Decary Hall.

Marcil Hall - This 21,420 SF steel frame unit block veneer building built in 1994 is primarily a classroom building with administrative office space for faculty.

Girard Marine Science Education and Research Center - This 26,744 SF steel frame building with brick veneer was built in 2001. It is used as a marine mammal rehabilitation and research center. Marine laboratories, classroom, and faculty offices are provided. A pump house, situated near the waterfront, pumps seawater to the saltwater storage tank on the site, which in turn is utilized in the Marine Science Education and Research Center.

Morgane Hall - This 25,800 SF brick building academic building, house sciences labs, classrooms and offices. It was constructed in 2008.

Padua Hall - This 13,368 SF three-story brick building is a residence hall that was built in 1962. Rooms are typically double occupancy with shared restrooms on each floor.

Petts Center – This 9,040 SF two-story wood frame building built in 1984 serves as a student health clinic, as well as an academic and administrative support facility.

Pickus Center for Biomedical Research - This 22,086 SF brick structure house labs and office in support of biomedical research. It was completed in 2008.

Ripich Commons – This 60,340 SF, four story student center was constructed in 2017 and houses student support services and the main dining facility.

Siena Hall - This 13,368 SF three-story brick building is a residence hall that was built in 1962. Rooms are typically double occupancy with shared restrooms on each floor.

Sokokis Hall – This four-story, 104,813 SF residence hall was constructed in 2010. Students reside in single and double bedroom suites.

Staging and Storage area - This area is used for staging of landscaping and surplus materials, and a staging area for construction projects. Soils for construction projects are often processed in this area before being transported to the actual project site. This use is approved by both the DEP and City of Biddeford. Several containers are also located at

the former landfill area and are used to store surplus property and new furniture during construction projects.

Stella Maris - This 32,450 SF, 4-story wood frame building was built in the mid 1700's. In 1978, half of the building was removed and a concrete block addition was added to support the College of Osteopathic Medicine. The building provides administrative offices, classrooms, research labs and faculty offices.

Storage sheds - A sand and salt storage facility and storage shed are located to the rear of the Facilities Management building. Other sheds are located on campus for storage of materials and equipment.

Student Academic Success Center - This 3,100 SF wooden building was built in 1940's. The facility is used as a Learning Center for Math and Writing Skills in support of all academic programs.

Waste Water Treatment Plant - This 4,300 SF masonry building was built in 1988 and expanded in 1993 and serves most of the buildings on campus.

Waterfront Activities Storage Facility/Docks - These structures support the waterfront and research programs and were built in 2001 and 2015.

West Hall - The West Hall opened in the fall of 2002 and is 40,339 SF. It is a masonry building with suites that accommodate four students sharing a living room, kitchenette, and two bathrooms with a private bedroom for each student. A faculty apartment is also included in the building to facilitate a learning community.

- b. *The current bed capacity of all residence buildings and anticipated change in the total bed capacity.*

Occupancy	
Assisi Hall	75
Avila Hall	102
Champlain Hall	206
East Hall	179
Featherman Hall	226
Frederick Hall	71
Housing Park	2
Padua Hall	70
Siena Hall	73
Sokokis Hall	299
West Hall	127
Total	1430

The counts represented above reflect current bed capacity based on double occupancy in rooms designed for double occupancy and single occupancy in rooms designed for single occupancy. Featherman Hall is listed as triples. At times the University has more demand

for housing than can be made available utilizing double occupancy, and will “triple” double occupancy rooms to accommodate the extra demand. The actual number of residential students is provided in section 3. While “tripling” is common practice at most institutions of higher education, it is not the preferred situation. The University’s goal in respect to residential housing capacity is to increase the capacity to meet its three-year residency requirement and minimize “tripling”. Housing projects will be completed as the actual numbers of potential residential students warrant them. The Conceptual Development Plan, located in section 10, includes the potential of adding 300 beds.

- c. *A description of any significant changes in the type of use made of existing buildings, significant expansions of existing buildings, or new buildings and facilities that are to be needed over the next five years.*

See text below.

- d. *A description of how the anticipated changes in facilities relate to program changes and the institution’s mission.*

See text below.

Overview of section 4c and d

Over the next five years, we may create new space for: additional housing, additional athletic venues, improved athletic facilities, expansions to our academic and research buildings, and student support services facilities. These essential improvements are critical to the health and viability of the University. The potential projects listed are all possible options for the University. However, the University does not intend to complete all of these projects within the period of this Master Plan.

The new buildings, renovations and sports facilities/venues support the mission of the University. The improvements enable delivery of quality instruction, as well as improved extracurricular and community outreach programs, all of which will enhance teaching and learning. For locations of potential areas to be developed, please refer to the Concept Campus Plan-Five Year Development Strategy plan in the back of section 10.

The University is developing a stronger reputation as a research university to meet accreditation requirements and to attract outstanding scholars and funding agencies. This goal requires additional research, teaching and meeting facilities, which will lead to a greater success by faculty and student researchers.

Below is an outline of the potential projects over the next 5 years. These projects will be prioritized based on ability to finance and actual programmatic need. Each building may include a combination of the needs as listed below.

Academic, Research and Administration Facilities

Research is a strategic goal of all of the University and is an integral component of our Mission Statement. Expansions of our research facilities will enable the University to continue to grow in this strategic area.

Classrooms, laboratories, and offices may need to be added as enrollment increases or to meet pedagogical changes. Space may be added by combining with an existing research, residential, or support building complex.

Housing, Student Services, and Athletic Facilities

Additional new **Student Housing** may be added based on the projection for residential students. These may be similar in style and scale as the residence halls recently constructed and will be located on the west side of Route 9.

Athletic field(s)/Courts/Track may be constructed to extend the playing season and to better compete with other peer institutions. These projects may have associated storage/press box facilities constructed with them.

Campus Center addition(s) may be necessary to provide for additional recreational space, meeting/activities spaces, offices, and/or an expansion to the natatorium.

Waterfront Access for Research and Recreation - increasing use of the waterfront for academic and research activities has resulted in a demand for year-round dock facilities. The current seasonal research facility limits the access to the water, thus a more permanent pier is required for the extensive programming being conducted. The ideal location for this year-round facility would be adjacent to the Girard Marine Science and Education Center.

The University has initiated crew and sailing programs, resulting in an increased demand for access to the waterfront for recreational and intercollegiate activities as well, and thus is looking to make the existing seasonal dock a permanent installation, with only the floats being removed annually.

Support Facilities

Parking is required by local and state regulatory agencies as a condition of granting building permits to meet anticipated needs of programs. A combination of on grade and structured parking is being considered. In addition to the construction of new lots shown, an effort will be made to re-configure existing lots throughout the campus to increase capacity and accessibility.

Miscellaneous Roadway and Walkway Improvements and Additions will be needed to improve pedestrian access on campus and reduce pedestrian vehicular conflicts. This may also include handicap accessible access to the trail system along the shoreline and to Freddy Beach.

Storage/Recycling Facilities may need to be constructed to replace the storage trailers being used for this purpose. Additional storage facilities may be required to support other activities, such as recreation, athletics and research. These would need to be appropriately located, dependent on their use.

Additional **heating and cooling facilities** may be needed to support the new facilities. These may be added through a combination of central and decentralized heating and cooling facilities similar to those attached to Assisi Hall and the Campus Center.

An addition to the **Wastewater Treatment Facility** may be required if the projected water usage is greater than anticipated.

Temporary Facilities

As with most educational facilities, some **temporary facilities** may be needed to provide space during construction of new buildings as well as to accommodate unanticipated needs on short notice. This will likely be modular units, which might be used for **support, office, teaching and research, and/or housing**. Final locations will be determined based on need, access to parking and utilities and relevant site plan review criteria.

5- Parking and Traffic

a. Information on current traffic volumes and conditions including Levels of Service on the principal public streets and intersections of public streets within the Zone and on the primary access routes to the campus.

Please see the attached University of New England, Biddeford Maine Master Plan Traffic Analysis prepared by Sewall.

b. A description of anticipated changes in traffic volumes over the next five years resulting from the changes in programs and facilities included in the Master Plan.

Please see the attached University of New England, Biddeford Maine Master Plan Traffic Analysis prepared by Sewall.

c. An analysis of the impact of these changes on traffic flow and vehicular and pedestrian safety on public streets within the Zone and that provide access to the campus.

Please see the attached University of New England, Biddeford Maine Master Plan Traffic Analysis prepared by Sewall.

d. A proposed program of improvements to address any unacceptable impacts resulting from changes in traffic volumes including activities that will be undertaken to mitigate any adverse impacts on adjacent residential neighborhoods.

Please see the attached University of New England, Biddeford Maine Master Plan Traffic Analysis prepared by Sewall.

e. Information on the number and location of existing parking spaces.

Please refer to Drawing P-100, Existing Parking Plan, which is located at the rear of this section.

f. An analysis of the adequacy of the existing parking to meet anticipated changes in programs and facilities over the next five years.

Please refer to the Parking and Transportation Demand Management - 2022 report at the rear of this section.

g. An assessment of pedestrian and bicycle movements and safety related to the parking supply and locations.

All existing primary pedestrian/bike paths are 8' wide, and all secondary pedestrian/bike paths are 6' wide. The existing path network is satisfactory to meet the needs of both pedestrians and bicyclists. Dedicated bike lanes are not required as there is adequate

width to the existing walkway and roadway system. Furthermore, these dual use paths are more than sufficient, given the relatively limited biking season during student residence periods (arriving approximately mid-September and leaving early to mid May).

The Director of the Safety and Security Department was contacted in regards to concerns related to the increased use of bicycles on campus. He indicated that annually, all residential students were required to participate in an educational session in regards to bicycle safety and the Maine laws related to bicycling. This session was presented to the students by the Biddeford Police Department. He stated that there have been no significant issues raised to date in regards to bicycle and vehicular interactions.

h. A proposed program of parking improvements to meet any identified deficiencies.

Please refer to the Parking and Transportation Demand Management - 2022 report at the rear of this section.

To insure a more precise analysis, all University and non-University contract employees regularly scheduled to work on the University Campus were included in this study.

The proposed parking facilities are illustrated on the Campus Master Plan -Five Year Development Strategy plan in the back of section 10.

UNIVERSITY OF NEW ENGLAND BIDDEFORD, MAINE MASTER PLAN TRAFFIC ANALYSIS

INTRODUCTION

This memorandum is written to summarize traffic assessment performed for the update of the University of New England (UNE) Master Plan for their Biddeford, Maine campus. The City of Biddeford's requirements for the plan related to traffic are outlined below:

- a. Information on current traffic volumes and conditions including levels of service on the principal public streets and intersections of public streets within the zone and on the primary access routes to the campus.
- b. A description of anticipated changes in traffic volumes over the next five years resulting from the changes in programs and facilities included in the master plan.
- c. An analysis of the impact of these changes on traffic flow and vehicular and pedestrian safety on public streets within the zone and that provide access to the campus.
- d. A proposed program of improvements to address any unacceptable impacts resulting from changes in traffic volumes including activities that will be undertaken to mitigate any adverse impacts on adjacent residential neighborhoods.

EXISTING TRAFFIC VOLUMES

Access to the Biddeford campus is provided by Pool Street (Route 9/208). Average annual daily traffic (AADT) data for the vicinity of the campus was obtained from the Maine Department of Transportation's (MaineDOT's) 2014 and 2019 Traffic Count Books as well as their Interactive Traffic Map. This data is summarized in the following table:

<u>Location</u>	Average Annual Daily Traffic			
	<u>2010</u>	<u>2013</u>	<u>2016</u>	<u>2019</u>
Pool Street, southeast of Meetinghouse Road	6730	5010	---	5950
Pool Street, northwest of Hills Beach Road	---	5990	5860	---
Pool Street, south of Hills Beach Road	3650	3430	3300	---
Pool Street, south of Newtown Road	---	3310	---	---
Hills Beach Road, northeast of Old Pool Road	---	1920	1510	---
Hills Beach Road, southeast of Pool Street	--	---	1990	---

As seen above, traffic volumes in the vicinity of the campus have declined from 2010 to 2019.

Turning movement counts were performed by Sewall at key intersections to determine existing volumes for capacity and level of service analysis purposes. The counts were conducted during the PM peak hour period (3:00 – 6:00), typically the highest volume hours of the day on Maine roadways. The count dates and peak hours are as follows:

<u>Intersection</u>	<u>Count Date</u>	<u>Peak Hour</u>
Pool Street and Hills Beach Road	11/4/21	3:15 – 4:15
Pool Street and Newtown Road	11/3/21	4:30 – 5:30
Pool Street, Hedley Reynolds Way and UNE drive	11/10/21	4:00 – 5:00
Pool Street and easterly Parking Lot	11/17/21	4:00 – 5:00

The above counts were factored to peak school year conditions, which occur in September, using MainedOT group mean factors. The UNE drive volumes were not seasonally adjusted since they are expected to be consistent during the fall and spring semesters. The resulting September 2021 volumes are shown in Figure 1. Given that volumes have been declining, based upon the historical count data, a 2 % growth rate was utilized to project the 2021 to 2022 conditions to be conservative. The results are shown in Figure 2.

EXISTING CONDITIONS ANALYSIS

Traffic operations are evaluated in terms of level of service (LOS). Level of service is a qualitative measure that describes operations by letter designation. The levels range from A - very little delay to F - extreme delays. Level of service "D" is generally considered acceptable in urban locations while LOS "E" is generally considered the capacity of a facility and the minimum tolerable level. The level of service for unsignalized intersections is based upon average control delay per vehicle for each minor, opposed movement, as defined below:

Unsignalized Intersection Level of Service

<u>LOS</u>	<u>Delay Range</u>
A	< = 10.0 seconds
B	> 10.0 and <= 15.0
C	> 15.0 and <= 25.0
D	> 25.0 and <= 35.0
E	> 35.0 and <= 50.0
F	> 50.0

Level of service was determined for the primary campus intersections utilizing Synchro 11 and SimTraffic under the September 2022 volumes. The results for the PM peak hour analysis period, with the LOS followed by the delay in seconds, are summarized in the following tables:

Pool Street, Hills Beach Road & Seastar Market PM Peak Hour Level of Service

<u>Approach/Movement</u>	<u>Existing 2022</u>
Eastbound Market Drive	A (7.3)
Westbound Hills Beach Road	A (6.7)
Northbound Lefts into Market	A (2.0)
Northbound Throughs/Rights	A (1.2)
Northbound Pool Street Overall	A (1.3)
South Lefts onto Hills Beach Road	A (3.0)
Southbound Throughs/Rights	A (1.4)
Southbound Pool Street Overall	A (2.1)
Overall Intersection	A (3.3)

**Pool Street & Newtown Road
PM Peak Hour Level of Service**

<u>Approach/Movement</u>	<u>Existing 2022</u>
Eastbound Newtown Road	A (5.6)
Westbound Newtown Road	A (5.4)
Northbound Pool Street	A (0.9)
Southbound Pool Street	A (0.8)
Overall Intersection	A (1.8)

**Pool Street, Hedley Reynolds Way & UNE Drive
PM Peak Hour Level of Service**

<u>Approach/Movement</u>	<u>Existing 2022</u>
Eastbound Hedley Reynolds Way Lefts	A (5.8)
Eastbound Hedley Reynolds Way Throughs/Rights	A (6.6)
Eastbound Hedley Reynolds Way Overall	A (6.4)
Westbound UNE Drive	A (5.5)
Northbound Pool Street	A (0.6)
Southbound Pool Street	A (1.0)
Overall Intersection	A (2.0)

As seen in the preceding tables, the level of service is currently “A” under peak September volumes for all movements at all primary access intersections. There are no capacity concerns at any of the primary access intersections and the results demonstrate that Pool Street has capacity to accommodate additional UNE trips.

SAFETY AND ACCIDENT REVIEW

The Maine Department of Transportation uses two criteria to determine high crash locations (HCLs). The first is the critical rate factor (CRF), which is a measure of the accident rate. A CRF greater than one indicates a location which has a higher than expected crash rate. The expected rate is calculated as a statewide average of similar facilities.

The second criterion, which must also be met, is based upon the number of accidents that occur at a particular location. Eight or more accidents must occur over the three-year study period for the location to be considered a high crash location. Accident data was obtained from MaineDOT for the vicinity of the campus for the most recent 3-year period, 2019 to 2021. The data is attached to this memorandum. There are no high crash locations (meeting both high crash criteria) within the following study area:

- Pool Street between Kennebunkport Town Line and Alfred Street (Route 111)
- Hills Beach Road between Pool Street and Long Avenue
- Old Pool Road between Hills Beach Road and Day's Landing

As a result, no safety deficiencies or concerns were identified, and no additional accident evaluation is necessary.

PROJECTED UNIVERSITY VOLUMES AND IMPACTS

Trip generation analysis was performed for the existing enrollment and projected enrollment at the end of the five-year plan period. Land use code (LUC) 550 – University/College was utilized from the most recent Institute of Transportation Engineers (ITE) “Trip Generation, 11th Edition”. The calculations were performed on the basis of the 2,402 current students and projected 2,290 students in fall of 2027. The results are summarized in the table on the following page:

<u>Time Period</u>	ITE TRIP GENERATION		
	<u>Existing</u>	<u>Projected</u>	<u>Change</u>
Weekday	5,424	5,270	- 154
AM Peak Hour – Adjacent Steet + Gen.	360	344	-16
Entering	281	268	-13
Exiting	79	76	-3
PM Peak Hour – Adjacent Steet + Gen.	360	344	-16
Entering	115	110	-5
Exiting	245	234	-11

As seen above, based upon the ITE data, the existing campus generates approximately 360 one-way trips during both the AM and PM peak hours. At the end of the five-year plan period, with the projected decline in enrollment, there will be 344 one-way trips in peak hours. Given the small decrease in peak hour trip generation, no off-site impact on traffic operations would be expected. Additionally, since all primary intersections are currently operating at a good level of service “A”, and since the Pool Street volumes have not been increasing historically, and since university enrollments are projected to drop over the five-year plan period all intersections would be expected to remain at level of service “A”.

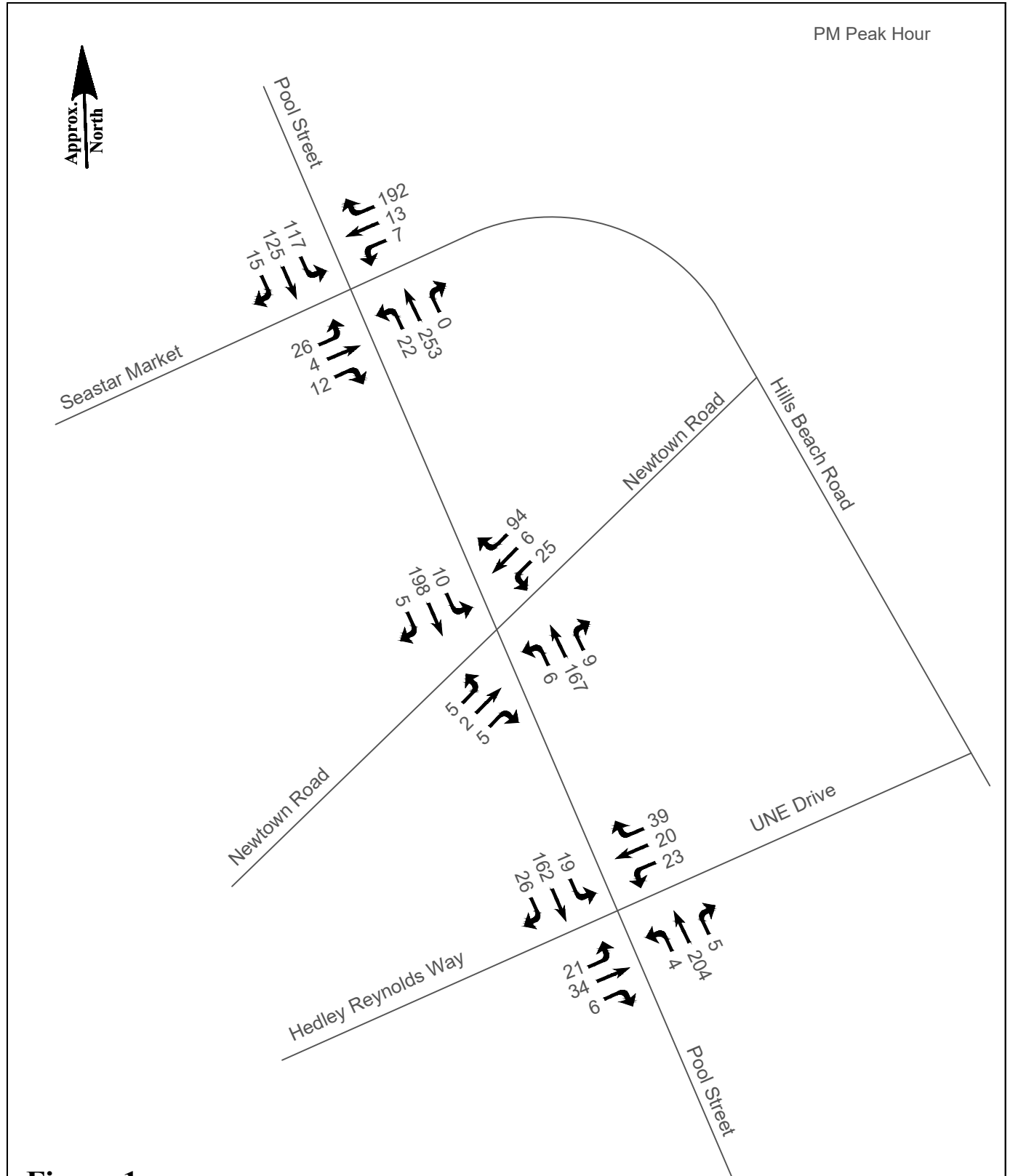


Figure 1

Existing 2021 Peak Hour Volumes
UNE, Biddeford
Biddeford, Maine



Lanes, Volumes, Timings
3: Pool Street & Newtown Road

01/04/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	2	5	25	6	94	6	167	9	10	198	5
Future Volume (vph)	5	2	5	25	6	94	6	167	9	10	198	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.943			0.899			0.993			0.997	
Flt Protected		0.979			0.990			0.998			0.998	
Satd. Flow (prot)	0	1624	0	0	1674	0	0	1828	0	0	1853	0
Flt Permitted		0.979			0.990			0.998			0.998	
Satd. Flow (perm)	0	1624	0	0	1674	0	0	1828	0	0	1853	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1134			440			1148			848	
Travel Time (s)		30.9			12.0			22.4			16.5	
Confl. Peds. (#/hr)	1		1	19		19	4		4	1		1
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.47	0.47	0.47	0.86	0.86	0.86	0.93	0.93	0.93	0.87	0.87	0.87
Heavy Vehicles (%)	8%	8%	8%	1%	1%	1%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	11	4	11	29	7	109	6	180	10	11	228	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	145	0	0	196	0	0	245	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	32.9%											
Analysis Period (min)	15											
ICU Level of Service A												

Lanes, Volumes, Timings

6: Pool Street & Seastar Market/Hills Beach Road

01/04/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	4	12	7	13	192	22	253	0	117	125	15
Future Volume (vph)	26	4	12	7	13	192	22	253	0	117	125	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	300		0	200		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.962			0.878						0.984	
Flt Protected		0.970			0.998		0.950			0.950		
Satd. Flow (prot)	0	1721	0	0	1616	0	1736	1827	0	1752	1815	0
Flt Permitted		0.970			0.998		0.950			0.950		
Satd. Flow (perm)	0	1721	0	0	1616	0	1736	1827	0	1752	1815	0
Link Speed (mph)		30			25			35			35	
Link Distance (ft)		97			1075			848			1355	
Travel Time (s)		2.2			29.3			16.5			26.4	
Confl. Peds. (#/hr)	1		1				3		3			
Peak Hour Factor	0.83	0.83	0.83	0.82	0.82	0.82	0.85	0.85	0.85	0.74	0.74	0.74
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	31	5	14	9	16	234	26	298	0	158	169	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	50	0	0	259	0	26	298	0	158	189	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	45.7%						ICU Level of Service A					
Analysis Period (min)	15											

Lanes, Volumes, Timings

9: Pool Street & Hedley Reynolds Way/UNE Driveway

01/04/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	34	6	23	20	39	4	204	5	19	162	26
Future Volume (vph)	21	34	6	23	20	39	4	204	5	19	162	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.936			0.997			0.983	
Flt Protected	0.950				0.986			0.999			0.995	
Satd. Flow (prot)	1736	1787	0	0	1736	0	0	1802	0	0	1770	0
Flt Permitted	0.950				0.986			0.999			0.995	
Satd. Flow (perm)	1736	1787	0	0	1736	0	0	1802	0	0	1770	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		662			749			1070			1148	
Travel Time (s)		18.1			20.4			20.8			22.4	
Peak Hour Factor	0.59	0.59	0.59	0.73	0.73	0.73	0.76	0.76	0.76	0.86	0.86	0.86
Heavy Vehicles (%)	4%	4%	4%	1%	1%	1%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	36	58	10	32	27	53	5	268	7	22	188	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	68	0	0	112	0	0	280	0	0	240	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	38.8%											
Analysis Period (min)	15											
	ICU Level of Service A											

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:50	3:50	3:50	3:50	3:50	3:50
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1090	1142	1078	1078	1054	1088
Vehs Exited	1094	1141	1076	1084	1056	1090
Starting Vehs	17	18	13	23	21	13
Ending Vehs	13	19	15	17	19	16
Travel Distance (mi)	567	592	543	567	533	560
Travel Time (hr)	20.4	21.6	19.8	20.3	19.3	20.2
Total Delay (hr)	1.8	2.1	1.8	1.8	1.7	1.9
Total Stops	583	612	593	567	561	582
Fuel Used (gal)	18.6	19.7	17.9	18.7	17.5	18.5

Interval #0 Information Seeding

Start Time	3:50
End Time	4:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	4:00
End Time	5:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	1090	1142	1078	1078	1054	1088
Vehs Exited	1094	1141	1076	1084	1056	1090
Starting Vehs	17	18	13	23	21	13
Ending Vehs	13	19	15	17	19	16
Travel Distance (mi)	567	592	543	567	533	560
Travel Time (hr)	20.4	21.6	19.8	20.3	19.3	20.2
Total Delay (hr)	1.8	2.1	1.8	1.8	1.7	1.9
Total Stops	583	612	593	567	561	582
Fuel Used (gal)	18.6	19.7	17.9	18.7	17.5	18.5

3: Pool Street & Newtown Road Performance by lane

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	6.6	6.3	0.9	0.8	2.1

6: Pool Street & Seastar Market/Hills Beach Road Performance by lane

Lane	EB	WB	NB	NB	SB	SB	All
Movements Served	LTR	LTR	L	TR	L	TR	
Denied Del/Veh (s)							0.6
Total Del/Veh (s)	7.1	6.9	1.8	1.2	2.9	1.4	3.3

9: Pool Street & Hedley Reynolds Way/UNE Driveway Performance by lane

Lane	EB	EB	WB	NB	SB	All
Movements Served	L	TR	LTR	LTR	LTR	
Denied Del/Veh (s)						0.2
Total Del/Veh (s)	5.4	6.5	5.5	0.5	1.1	1.9

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	5.5

Intersection: 3: Pool Street & Newtown Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	29	93	17	24
Average Queue (ft)	8	39	1	3
95th Queue (ft)	26	68	9	13
Link Distance (ft)	1073	393	1059	762
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Pool Street & Seastar Market/Hills Beach Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	60	124	22	4	55	4
Average Queue (ft)	21	48	2	0	21	0
95th Queue (ft)	49	89	13	3	47	3
Link Distance (ft)	55	1025		762		1318
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)			300		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Pool Street & Hedley Reynolds Way/UNE Driveway

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	LTR	LTR
Maximum Queue (ft)	53	69	58	10	40
Average Queue (ft)	14	27	31	0	5
95th Queue (ft)	42	55	53	5	24
Link Distance (ft)		634	721	1036	1059
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:50	3:50	3:50	3:50	3:50	3:50
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1090	1142	1078	1078	1054	1088
Vehs Exited	1094	1141	1076	1084	1056	1090
Starting Vehs	17	18	13	23	21	13
Ending Vehs	13	19	15	17	19	16
Travel Distance (mi)	567	592	543	567	533	560
Travel Time (hr)	20.4	21.6	19.8	20.3	19.3	20.2
Total Delay (hr)	1.8	2.1	1.8	1.8	1.7	1.9
Total Stops	583	612	593	567	561	582
Fuel Used (gal)	18.6	19.7	17.9	18.7	17.5	18.5

Interval #0 Information Seeding

Start Time	3:50
End Time	4:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	4:00
End Time	5:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	1090	1142	1078	1078	1054	1088
Vehs Exited	1094	1141	1076	1084	1056	1090
Starting Vehs	17	18	13	23	21	13
Ending Vehs	13	19	15	17	19	16
Travel Distance (mi)	567	592	543	567	533	560
Travel Time (hr)	20.4	21.6	19.8	20.3	19.3	20.2
Total Delay (hr)	1.8	2.1	1.8	1.8	1.7	1.9
Total Stops	583	612	593	567	561	582
Fuel Used (gal)	18.6	19.7	17.9	18.7	17.5	18.5

3: Pool Street & Newtown Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.1	0.1
Total Del/Veh (s)	6.6	6.3	0.9	0.7	2.1

6: Pool Street & Seastar Market/Hills Beach Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	1.6	0.6
Total Del/Veh (s)	7.1	6.9	1.3	2.1	3.3

9: Pool Street & Hedley Reynolds Way/UNE Driveway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.3	0.1	0.2	0.0	0.2
Total Del/Veh (s)	6.2	5.5	0.5	1.1	1.9

Total Network Performance

Denied Del/Veh (s)			0.6		
Total Del/Veh (s)			5.5		

Intersection: 3: Pool Street & Newtown Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	29	93	17	24
Average Queue (ft)	8	39	1	3
95th Queue (ft)	26	68	9	13
Link Distance (ft)	1073	393	1059	762
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Pool Street & Seastar Market/Hills Beach Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	60	124	22	4	55	4
Average Queue (ft)	21	48	2	0	21	0
95th Queue (ft)	49	89	13	3	47	3
Link Distance (ft)	55	1025		762		1318
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)			300		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Pool Street & Hedley Reynolds Way/UNE Driveway

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	LTR	LTR
Maximum Queue (ft)	53	69	58	10	40
Average Queue (ft)	14	27	31	0	5
95th Queue (ft)	42	55	53	5	24
Link Distance (ft)		634	721	1036	1059
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 0

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☒ Crash Summary I ☐ Section Detail ☒ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Biddeford
UNE Master Plan

REPORT PARAMETERS

Year 2018, Start Month 1 through Year 2020 End Month: 12

Route: 0009X	Start Node: 54694 End Node: 54740	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☐ Exclude Last Node
Route: 3111398	Start Node: 53380 End Node: 54703	Start Offset: 0 End Offset: 0	☒ Exclude First Node ☒ Exclude Last Node
Route: 3110079	Start Node: 53560 End Node: 53380	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☒ Exclude Last Node
Route: 3101398	Start Node: 59177 End Node: 53380	Start Offset: 0 End Offset: 0	☐ Exclude First Node ☐ Exclude Last Node

Maine Department Of Transportation - Office of Safety, Crash Records Section

Crash Summary I

Nodes														
Node	Route - MP	Node Description	U/R	Total Crashes	K	Injury A	Crashes B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
54694	0009X - 29.51	TL Biddeford Kennebunkport	1	0	0	0	0	0	0	0.0	0.400	0.00	0.60	0.00
												Statewide Crash Rate: 0.14		
54695	0009X - 29.60	Int of OAK RIDGE RD POOL ST	1	1	0	0	0	1	0	100.0	0.901	0.37	0.54	0.00
												Statewide Crash Rate: 0.14		
54880	0009X - 29.65	Int of POOL ST SCADLOCK MILL RD	1	0	0	0	0	0	0	0.0	0.891	0.00	0.54	0.00
												Statewide Crash Rate: 0.14		
54881	0009X - 30.02	Int of POOL ST SCADLOCK MILL RD	1	0	0	0	0	0	0	0.0	0.854	0.00	0.55	0.00
												Statewide Crash Rate: 0.14		
54696	0009X - 30.14	Int of POOL ST WEST ST	2	1	0	0	0	0	1	0.0	1.126	0.30	0.54	0.00
												Statewide Crash Rate: 0.15		
54697	0009X - 30.53	Int of GRANITE POINT RD POOL ST	1	2	0	0	1	0	1	50.0	1.043	0.64	0.53	1.22
												Statewide Crash Rate: 0.14		
54698	0009X - 30.61	Int of FORTUNES ROCKS RD POOL ST	1	0	0	0	0	0	0	0.0	0.948	0.00	0.54	0.00
												Statewide Crash Rate: 0.14		
54699	0009X - 30.83	Int of ELIZABETH RD POOL ST	1	0	0	0	0	0	0	0.0	0.679	0.00	0.57	0.00
												Statewide Crash Rate: 0.14		
58277	0009X - 31.50	Int of MADDOX POND RD POOL ST	1	1	0	0	1	0	0	100.0	0.703	0.47	0.57	0.00
												Statewide Crash Rate: 0.14		
54882	0009X - 31.85	Int of POOL ST WATER TOWER WY	1	0	0	0	0	0	0	0.0	0.701	0.00	0.57	0.00
												Statewide Crash Rate: 0.14		
59000	0009X - 31.91	Int of BRIDGE RD POOL ST	2	1	0	0	0	0	1	0.0	0.720	0.46	0.60	0.00
												Statewide Crash Rate: 0.15		
54701	0009X - 31.96	Int of BRIDGE RD POOL ST	2	1	0	0	0	0	1	0.0	1.250	0.27	0.53	0.00
												Statewide Crash Rate: 0.15		
54702	0009X - 33.18	Int of NEWTOWN RD POOL ST	2	1	0	0	0	0	1	0.0	1.218	0.27	0.54	0.00
												Statewide Crash Rate: 0.15		
54703	0009X - 33.35	Int of OLD POOL RD POOL ST	2	4	0	0	0	1	3	25.0	2.234	0.60	0.46	1.30
												Statewide Crash Rate: 0.15		
54704	0009X - 33.96	Int of POOL ST SOKOKIS RD	2	0	0	0	0	0	0	0.0	2.551	0.00	0.45	0.00
												Statewide Crash Rate: 0.15		
57515	0009X - 34.06	Non Int POOL ST	2	0	0	0	0	0	0	0.0	2.446	0.00	0.45	0.00
												Statewide Crash Rate: 0.15		
54705	0009X - 34.43	Int of MEETINGHOUSE RD POOL ST SOKOKIS RD	2	0	0	0	0	0	0	0.0	2.334	0.00	0.46	0.00
												Statewide Crash Rate: 0.15		
54517	0009X - 34.68	Int of NO NAME RD POOL ST	2	0	0	0	0	0	0	0.0	1.989	0.00	0.47	0.00
												Statewide Crash Rate: 0.15		
54706	0009X - 34.74	Int of MARBLEHEAD LN POOL ST	2	0	0	0	0	0	0	0.0	2.028	0.00	0.47	0.00
												Statewide Crash Rate: 0.15		
54707	0009X - 35.05	Int of MEETING HOUSE RD POOL ST	2	3	0	1	1	0	1	66.7	2.342	0.43	0.46	0.00
												Statewide Crash Rate: 0.15		
59238	0009X - 35.18	Int of HIDDEN FARM RD POOL ST	2	1	0	0	0	0	1	0.0	2.392	0.14	0.45	0.00
												Statewide Crash Rate: 0.15		
59237	0009X - 35.27	Int of HIDDEN FARM RD POOL ST	2	0	0	0	0	0	0	0.0	2.402	0.00	0.45	0.00
												Statewide Crash Rate: 0.15		

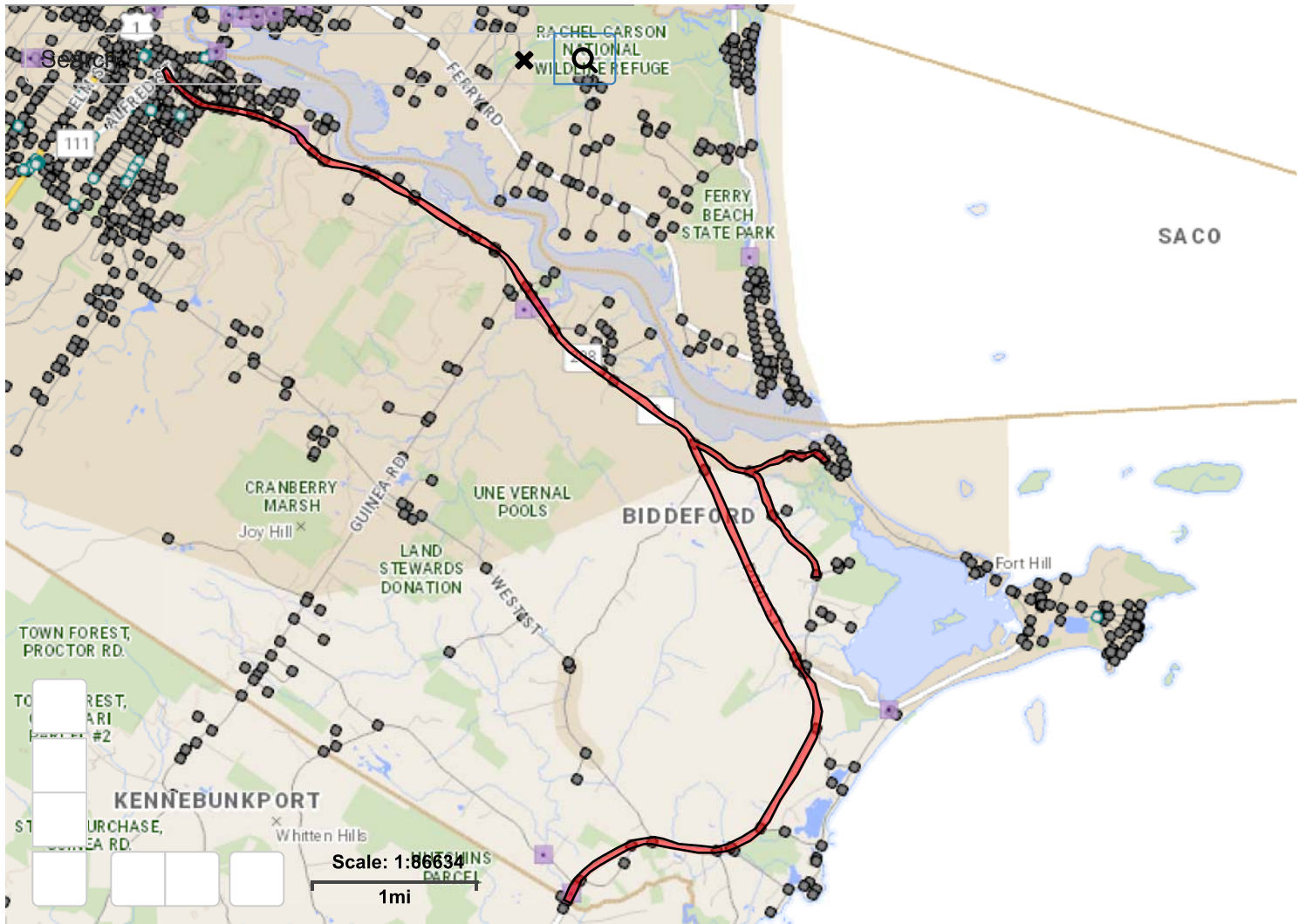
Maine Department Of Transportation - Office of Safety, Crash Records Section

Crash Summary I

Nodes															
Node	Route - MP	Node Description	U/R	Total Crashes	K	Injury A	Crashes B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF	
54708	0009X - 35.61	Int of DECARY RD POOL ST	2	0	0	0	0	0	0	0.0	2.408	0.00	0.45	0.00	
												Statewide Crash Rate:	0.15		
54709	0009X - 35.89	Int of DECARY RD POOL ST	2	2	0	0	0	0	2	0.0	2.482	0.27	0.45	0.00	
												Statewide Crash Rate:	0.15		
58537	0009X - 35.94	Int of LEDGEMERE DR POOL ST	2	0	0	0	0	0	0	0.0	2.617	0.00	0.44	0.00	
												Statewide Crash Rate:	0.15		
58538	0009X - 36.20	Int of LIBBY DR POOL ST	2	2	0	0	1	0	1	50.0	2.655	0.25	0.44	0.00	
												Statewide Crash Rate:	0.15		
54710	0009X - 36.29	Int of MARIAL AV, POOL ST	2	0	0	0	0	0	0	0.0	2.850	0.00	0.43	0.00	
												Statewide Crash Rate:	0.15		
54711	0009X - 36.58	Int of LAFAYETTE ST POOL ST	2	2	0	0	0	1	1	50.0	3.134	0.21	0.42	0.00	
												Statewide Crash Rate:	0.15		
54712	0009X - 36.68	Int of POOL ST SIMARD AV	2	1	0	0	0	0	1	0.0	3.355	0.10	0.41	0.00	
												Statewide Crash Rate:	0.15		
54713	0009X - 36.73	Int of CLIFFORD ST POOL ST	2	4	0	0	0	0	4	0.0	3.478	0.38	0.41	0.00	
												Statewide Crash Rate:	0.15		
54714	0009X - 36.85	Int of GEORGE ST POOL ST	2	1	0	0	0	0	1	0.0	2.011	0.17	0.47	0.00	
												Statewide Crash Rate:	0.15		
54715	0009X - 36.89	Int of PARENT AV POOL ST	2	0	0	0	0	0	0	0.0	1.772	0.00	0.49	0.00	
												Statewide Crash Rate:	0.15		
54716	0009X - 36.93	Non-Int POOL ST	2	0	0	0	0	0	0	0.0	1.775	0.00	0.49	0.00	
												Statewide Crash Rate:	0.15		
54717	0009X - 36.98	Int of BRISTOL ST POOL ST	2	0	0	0	0	0	0	0.0	1.796	0.00	0.49	0.00	
												Statewide Crash Rate:	0.15		
54718	0009X - 37.04	Int of PIKE ST PIKE ST EXT POOL ST	2	5	0	0	0	3	2	60.0	1.859	0.90	0.48	1.86	
												Statewide Crash Rate:	0.15		
58539	0009X - 37.07	Int of POOL ST SCHOOL ST	2	0	0	0	0	0	0	0.0	1.838	0.00	0.48	0.00	
												Statewide Crash Rate:	0.15		
54719	0009X - 37.08	Int of HIGH ST POOL ST	2	1	0	0	0	0	1	0.0	2.005	0.17	0.47	0.00	
												Statewide Crash Rate:	0.15		
54720	0009X - 37.11	Int of OAK ST POOL ST	2	2	0	0	0	1	1	50.0	2.219	0.30	0.46	0.00	
												Statewide Crash Rate:	0.15		
54721	0009X - 37.15	Int of MIDDLE ST POOL ST	2	0	0	0	0	0	0	0.0	2.266	0.00	0.46	0.00	
												Statewide Crash Rate:	0.15		
58540	0009X - 37.16	Int of PHILLIPS LN POOL ST	2	0	0	0	0	0	0	0.0	2.287	0.00	0.46	0.00	
												Statewide Crash Rate:	0.15		
54722	0009X - 37.20	Int of HILL ST, POOL ST	9	12	0	0	0	4	8	33.3	4.745	0.84	1.33	0.63	
												Statewide Crash Rate:	0.77		
54723	0009X - 37.28	Int of FOSS ST POOL ST	2	3	0	0	0	1	2	33.3	2.659	0.38	0.44	0.00	
												Statewide Crash Rate:	0.15		
54740	0009X - 37.34	Int of ALFRED ST JEFFERSON ST POOL ST	9	17	0	0	0	8	9	47.1	5.419	1.05	1.30	0.80	
												Statewide Crash Rate:	0.77		
53560	3110079 - 1.31	3103157 BID,HILLS BEACH RD, LONG AVE	2	0	0	0	0	0	0	0.0	0.447	0.00	0.64	0.00	
												Statewide Crash Rate:	0.15		

Crash Summary I

Nodes														
Node	Route - MP	Node Description	U/R	Total Crashes	K	Injury A	Crashes B	Crashes C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
57374	3110079 - 1.36	Int of HILLS BEACH RD SEABREEZE AV	2	0	0	0	0	0	0	0.0	0.498	0.00	0.63	0.00
57372	3110079 - 1.38	Int of BREAKWATER AV HILLS BEACH RD	2	1	0	0	0	0	1	0.0	0.571	0.58	0.62	0.00
59220	3110079 - 1.48	Int of HILLS BEACH RD RED OAK LN	2	0	0	0	0	0	0	0.0	0.604	0.00	0.62	0.00
57039	3110079 - 1.55	Non Int HILLS BEACH RD	2	0	0	0	0	0	0	0.0	0.300	0.00	0.65	0.00
53380	3101398 - 1.36	Int of HILLS BEACH RD OLD POOL RD	2	0	0	0	0	0	0	0.0	0.798	0.00	0.59	0.00
59177	3101398 - 0.60	Int of DAYS LNDG, OLD POOL RD	1	0	0	0	0	0	0	0.0	0.177	0.00	0.52	0.00
63672	3101398 - 1.05	Int of MARSH VIEW DR OLD POOL RD	2	0	0	0	0	0	0	0.0	0.194	0.00	0.60	0.00
Study Years: 3.00		NODE TOTALS:		69	0	1	4	20	44	36.2	91.371	0.25	0.29	0.87



University of New England

Parking and Transportation Demand Management - 2022

The previous Master Plan parking demands were based upon data in a publication entitled *Parking for Institutions and Special Events*¹. This specific source is cited in many later studies and appears to be in current use in evaluating university/college parking needs. The study itself does not cite a specific parking supply standard, but reports on the standards used at a number of institutions throughout the country. The most conservative rate cited is one space for each full time faculty and staff member and 0.5 spaces per enrolled student. For the previously approved master plan, these calculations include non-UNE employees who regularly report to work on campus (Dining Services and Bookstore contract employees). Based on that formula, the projected 2022 parking demand was 1952 spaces. A total of 2029 parking spaces are available on the campus. Annually in October and April, UNE conducts actual vacant parking space counts to confirm these calculations. Utilization of the October 2022 data indicates that during average peak demand, typically between 12:00 noon and 1:00PM, there were 167 spaces available on campus, thus confirming the relative accuracy and conservativeness of the formula.

UNE has an ongoing Transportation Demand Management plan (TDM) since 2010, to address the parking issues on campus, as well as reducing vehicular traffic on campus and in the vicinity of the campus. Specifically, the actions include:

- Residential Student parking permit fee of \$300.
- \$300 incentives to freshman to leave cars at home.
- Free on campus shuttle service.
- Subsidizing the shuttle bus service to downtown Biddeford, including all local routes as well as the ZOOM to Portland. The use of which is free to all UNE Community members.
- Providing free utilization of the South Portland Bus Service and the Portland Metro Bus system, including the Metro Breeze to Brunswick. The use of which is free to all UNE Community members.
- Providing free bicycles, helmets and locks for travel on and around campus.
- Car Pool Program that allows for free parking on campus.
- UNE utilizes the GoMaine service to encourage “greener commuting” to each campus as

¹ Edward M. Whitlock, P.E., Eno Foundation for Transportation, Westport, CT, 1982

well as between campuses when required. UNE has its own landing page on the [GoMaine website](#), which helps users find carpool partners, map out alternative transportation methods with transit, walking and biking routes, incentivizes users with rewards, and offers emergency “ride home guarantee” for regular users. Additionally, UNE takes advantage of the expertise of GoMaine staff for educational and promotional events with informational tabling, swag give-aways, and educational presentations.

- During the last Way-2-Go, GoMaine competition in 2019, UNE won two awards: Most New Members in the XXL Company Category and the Team Spirit Awards. There was significant momentum developing in the alternative transportation realm and the university is eager to return to this pre-pandemic activity and progress. The TTT committee plans to participate in and support future Way-2-Go competitions.
- In addition to this, UNE has an extensive videoconferencing system to minimize the commuting needs of faculty and staff as a result of intercampus meetings.

The University’s TDM program has had a significant impact on parking demand. The Freshman incentives are highly utilized and reduce on campus vehicles by approximately 250 each year.

In the previous academic year only 2796 passengers used the Biddeford shuttle bus. Students, faculty and staff ride free on both the shuttle and the Zoom system, as well as the South Portland and Portland bus systems. This is down considerably from the previously reported ridership rates, due primarily to COVID. UNE is working towards re-establishing a greater use of mass transit. The use of mass transportation has been proven to significantly reduce the traffic volumes on the local road system, minimizes the need to bring a vehicle to campus, and decreases the University’s carbon footprint.

For Freshman students not requesting a parking permit, LYFT vouchers are available as incentives. Eligible students receive, at no cost, an annual credit against these rentals that can be used while on campus or at home. Additionally, for Freshman students not requesting a parking permit, they can also choose to receive a \$300 credit at the UNE bookstore or at the UNE retail food service venues.

The University also has a Car Pool Program to encourage persons to ride share. This program allows for free parking on campus to faculty and staff, and requires a minimum of two persons commuting together to be eligible. Car Pool parking is designated and centrally located on campus.

As previously indicated, the existing supply of parking on the Biddeford Campus is 2029 spaces. Based upon projected student, faculty, and UNE and contracted staff statistics in the Master Plan (2023- 2027), parking demand is summarized below:

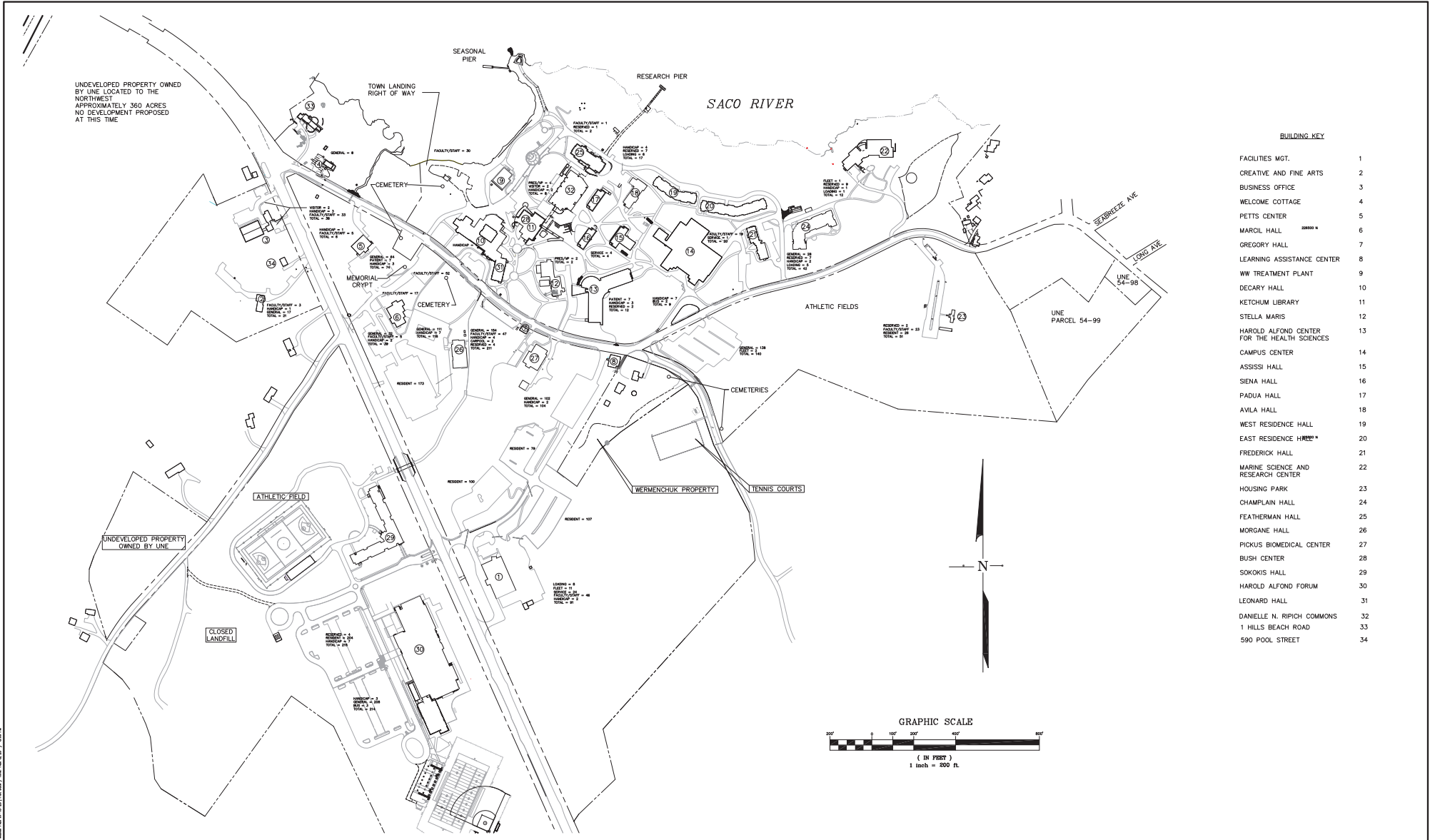
Year	2022	2023	2024	2025	2026	2027
Students	2402	2505	2165	2190	2235	2290
Faculty/Staff	751	726	600	620	640	650
Student Parking Demand	1201	1253	1083	1095	1118	1145
Faculty/Staff Parking Demand	751	726	600	620	640	650
Total Parking Demand	1952	1979	1683	1715	1758	1795
Projected Surplus/Deficit*	77	50	346	314	271	234
Actual Surplus+	167					

* Based upon existing supply of 2029 spaces

+ Based on actual vacant space counts, October 2022

Potential additional parking on campus is envisioned in the 2023 - 2027 Master Plan at locations on the west side of Route 9 near the Harold Alfond Forum and some new parking may be provided on the main campus near the Pickus Biomedical Center addition.

The University is now participating in intercollegiate football. These games are held during non-peak academic periods, thus parking that would typically be used by commuter students or faculty and staff is available for use during these events. This is similar to other large sporting events and programs. The University staffs all home games and major events on campus with Safety and Security Officers to assist with crowd control and pedestrian safety. For events that are determined to have a potentially significant impact on the community, notices are sent out to neighbors in advance to alert them and to solicit feedback prior to the event occurring. For example, the University had to host its Commencement on campus in 2014 as a result of the construction at the Cumberland County Civic Center. This resulted in a large number of vehicles coming to and from the campus during a limited amount of time. This event was coordinated with the local public safety officials and the community was notified well in advance, in order to minimize the impact of this event.



BUILDING KEY	
FACILITIES MGT.	1
CREATIVE AND FINE ARTS	2
BUSINESS OFFICE	3
WELCOME COTTAGE	4
PETTS CENTER	5
MAROL HALL	6
GREGORY HALL	7
LEARNING ASSISTANCE CENTER	8
WW TREATMENT PLANT	9
DECARY HALL	10
KETCHUM LIBRARY	11
STELLA MARIS	12
HAROLD ALFORD CENTER FOR THE HEALTH SCIENCES	13
CAMPUS CENTER	14
ASSISSI HALL	15
SIENA HALL	16
PADUA HALL	17
AVILA HALL	18
WEST RESIDENCE HALL	19
EAST RESIDENCE HALL	20
FREDERICK HALL	21
MARINE SCIENCE AND RESEARCH CENTER	22
HOUSING PARK	23
CHAMPLAIN HALL	24
FEATHERMAN HALL	25
MORGANE HALL	26
PICKUS BIOMEDICAL CENTER	27
BUSH CENTER	28
SOKOKIS HALL	29
HAROLD ALFORD FORUM	30
LEONARD HALL	31
DANIELLE N. RIPHON COMMONS	32
1 HILLS BEACH ROAD	33
590 POOL STREET	34

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SITE DESIGN ASSOCIATES, ANY ALTERATIONS, OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SITE DESIGN ASSOCIATES.

										Site Design Associates Consulting Engineering & Land Planning 23 Whitney Way Topsham, Maine 04086 Tel: (207) 449-4373										DESIGN: TWS DRAWN: DEPT. CHKD: TWS			PROJECT: UNE CAMPUS MASTER PLAN 11 HILLS BEACH ROAD BIDDEFORD, MAINE 04005		
										CLIENT: UNIVERSITY OF NEW ENGLAND 11 HILLS BEACH ROAD BIDDEFORD, MAINE 04005										EXISTING PARKING PLAN					
																				DATE: JANUARY 2023			PROJ. NO. — REV. B		
																				SCALE: 1"=200 FT±			DWG. NO. P-100		

6 – Water and Sewer Service

- a. A description of current provisions for water supply and sewage disposal including capacities, current utilization rates, and conformance with any permit or other legal standards.*
- b. An analysis of the change in demand for water supply and sewage disposal resulting from anticipated changes in programs and facilities over the next five years and the adequacy of the existing systems to meet this demand.*
- c. A proposed program of improvements to address any identified deficiencies*

Water Service

Water service is generally available to the main campus area from the existing 8” main in Hills Beach Road owned by Maine Water. The 8” main branches at the intersection of the Hills Beach and Old Pool Roads and continues along both roads. The main along Hills Beach Road ends at a hydrant at the end of Hills Beach Road. The 8” main in Old Pool Road continues to a tie in with the Kennebunk Water District to provide a looped system. This connection was made in 1998, and water company personnel have indicated that this has improved the flow characteristics in the system. If a significant reduction in water pressure is experienced in the water system serving the campus and Hills Beach Community for any reason, a valve at the intersection of Old Pool and Bridge Roads can be opened, which will increase the pressure and flows in the system.

Two of the smaller residential style facilities have private wells. These include 590 Pool Street and the Creative and Fine Arts Building.

Please refer to the Campus Plan-Five Year Development Strategy plan in the back of section 10, for the locations of potential projects to be developed.

Water service to the proposed development will be provided from the existing distribution systems.

The Campus Plan-Five Year Development Strategy plan has been provided to the Maine Water for the proposed development. As noted in the attached letter from Maine Water, they have indicated they have the capacity to serve the future needs of UNE.

Sewerage Treatment Plant

The University currently operates a wastewater treatment plant licensed to discharge 150,000 gallons per day (gpd) to the Saco River. During 2022 the discharge rates averaged 59,096 gallons per day and the peak monthly average for 2022 was 86,679 gpd in February, with lower rates during other months. All University owned buildings on campus discharge wastewater to the campus system, excepting the Welcome Cottage, 590 Pool Street, the Creative and Fine Arts Building, 1 unit at the former housing park,

the president's residence at 1 Hills Beach Road, and the Business Office, which all have subsurface wastewater disposal systems.

The wastewater treatment plant is functioning properly and no problem areas are evident. The University has had only two violations of its effluent quality in the last 20 years.

The wastewater collection system is completely separated from the campus storm water collection systems, and the manholes sealed, thus there is no possibility of any overflows at the treatment plant due to storm water.

The total maximum projected daily discharge based upon 300 additional beds and all proposed projects is estimated to be 101,100 gpd. Based on the analysis of the current flow data at the treatment plant and the projected flows, it does not appear that expansion of the treatment facility to accommodate additional flow will be required at build out, and the plant will operate within its licensed capacity. This does not preclude expansions dictated by changes in local, state or federal regulations pertaining to treatment plant discharges.

d. A statement as to how water supply and sewer disposal improvements are or will be coordinated with City programs and the needs of neighboring residential areas.

Any water service improvements necessary will benefit the surrounding community through the increased capacity and added reliability of upgraded infrastructure.



The Maine Water Company
93 Industrial Park Road
Saco, ME 04072

T: 207.282.1543
F: 207.282.1544
www.mainewater.com

December 27, 2022

Site Design Associates
Attn: Thomas Saucier, PE
23 Whitney Way
Topsham, ME 04086

Re: University of New England Capital Plan Update

Dear Tom:

Thank you for forwarding the updated 2022 Capital Plan for the University of New England Biddeford Campus. It remains important for our Engineering and Service Delivery staff to become familiar with the recent construction and growth plans on campus and continue a relationship such that our goals remain aligned.

Based on the revised capital plan, we are comfortable that the water system has capacity for the projected growth and uses you have indicated. We also understand that we will have to opportunity to review individual projects in conjunction with the City of Biddeford and other applicable utilities and agencies.

We look forward to our continued relationship with you and the University and please do not hesitate to reach out to discuss specific projects

Sincerely,

Jon Earle

Jon Earle, PE
Manager of Engineering □ Technical Services

7- Municipal and Community Services

a. A description of all municipal and community services (police, fire, recreation, etc.) currently utilized by the institution and data on the current level of usage.

Emergency Services

The University employs Safety and Security Officers, who provide 24-hour coverage on a year-round basis. These officers are trained as first responders. The University also supports a student led Emergency Medical Services, EMS, team of 83 volunteers providing emergency medical coverage 7pm to 7am seven days a week when classes are in session. Twenty-five of these volunteers are licensed EMT's. The University has its own Student Health Center on campus as well as a full array of counselling services available to our students.

In addition, the University of New England receives Police, Fire, and Emergency Medical Services (EMS) from the City of Biddeford. The University's Fire Alarm systems are monitored by UNE Safety & Security Dispatch and reported to the Biddeford Fire Department. These following statistics were prepared utilizing records provided to the University by JoAnne Fisk, Deputy Chief, Biddeford Police Department, and the City's published annual reports.

The total calls for service from the University for the calendar year 2021 were two hundred and thirty-six (236), or 0.17 calls per resident student. Fire/EMS calls make up 98 of the total calls, and Police dispatch calls represent the other 138 calls. This is a decrease of 10 calls of service, or -4% from the previous submitted 2016- 2021 Master Plan, which had estimated an increase of 20 calls per year for the facilities that were actually constructed. **If** UNE realized a **full build out** of the 2023-2027 Master Plan, it is anticipated that an additional 54 calls for service may be generated per year.

Comparatively, the total number of calls for emergency service to the City of Biddeford's Communication Center, in 2021, was 51,374 or the equivalent of 2.28 calls per resident of Biddeford. In 2014 the total number of calls for emergency service to the the City of Biddeford's Communication Center was 48,103, or 2.25 calls per resident. This represents an increase of 6.8% from 2014 to 2021. In 2021, the calls to the University represented 0.46% of all calls for service.

While the University's calls for service was relatively insignificant in comparison to the overall call load, it is important to note that the small number of calls does not diminish, the critical role and the outstanding performance of duty by the Biddeford Police and Fire Departments. Their quick response, excellent level and quality of care, and the professional manner in which difficult situations were addressed and resolved were greatly appreciated by the University faculty, staff, and students.

The University occasionally contracts with the Biddeford Fire and Police departments to provide coverage at home football games or other significant events held on campus. The

University allows the Biddeford Fire Department to conduct training in the unoccupied Residence halls during the summer months.

In the event of a Fire Alarm being activated, the City Fire Department is notified by UNE Safety & Security Dispatch, and a response is initiated. If the University is aware that the alarm is a “false alarm”, the City is notified of such and only one vehicle responds to reset the system. All other vehicles return to the station, minimizing the impact of the “false alarm”.

It is important to note that the information received from the City may vary from similar data elements found in the University’s Compliance Document for Crime Awareness and Campus Security Act of 1990, which statistics track University student code violations as well as crimes.

Please see the *Estimates of Impact* document at the rear of this section.

Solid Waste

The University contracts for its waste disposal services. There is no impact to the City services.

The University actively recycles all of its waste streams, including cardboard, paper and returnable bottles and cans, in all of its facilities. Approximately 40% of all waste is recycled.

All electronics are re-furbished and/or recycled. All Universal Waste is managed and disposed in accordance with State and Federal Regulations.

All hazardous materials are inventoried upon arrival, and stored and managed in accordance with State and Federal Regulations. Any unused chemicals are offered to other users, or if deemed waste, then they are disposed of through licensed vendors and manifested per regulations.

UNE started "SWOOP Days" in 2007 which is a collection drive during "move-out" week. The program has evolved to include a thrift shop event on campus in August to resell and gift gently used and curated items to students. Remaining items are brought to Goodwill for donation. The Sustainability Office, Residential Life and student environmental club collaborate to collect gently used clothes, furniture, small appliances, decorations and household accessories and store them over the summer for reuse in the fall, significantly reducing the waste generated from move-out. Unopened non-perishable food items are also collected, and donated to local food pantries.

Lightly used furniture is donated annually to homeless shelters and other organizations supporting those in need.

Recreation

The University has used the City of Biddeford's Saint Louis Field for its Club Baseball practices, scrimmages and games for the last ten years or so, and intends to continue utilizing the field. The games take place during September and October.

The University's Cross Country teams have and will continue to utilize Rotary Park for its home meets (one or two a year) and some practices. Additionally, the women's outdoor track & field team regularly practices during the months of March and April at the Biddeford High School track.

b. An analysis of the change in demand for municipal and community services and the adequacy of the existing services to meet this demand.

Based on current data, **IF** UNE realized a **full build out** of the proposed Master Plan, it is anticipated that an additional 54 calls of service would be generated per year. Assuming no other increases in Biddeford emergency service calls, these additional calls would increase the total calls for emergency services by 0.11%. It would be logical to assume that this increase would have a relatively insignificant impact on the adequacy of the existing emergency services.

In an effort to further minimize the impact of the increased level of calls for service to these entities, the University will continue to expand its education of its community on fire awareness, safety and health issues, offer additional health and wellness programs, and to continue to provide on-site health and counseling services to its community. The University maintains and inspects its safety systems on a regular basis to ensure that they are operating correctly, and imposes sanctions to the residents for any tampering of these systems, minimizing the potential for false alarms.

c. A proposed program of improvements to meet the identified deficiencies including proposed funding mechanisms.

The University has not identified any deficiencies in City or Community Services. However, UNE continues to work with the city to explore options for a remote Biddeford Fire substation in the coastal region of the city, proximal to the UNE campus.

University of New England - Biddeford Campus
Campus Master Plan - Five Year Projections (2021- 2026)

Estimates of Impact

1/2/2023

HOUSING								
Description					Water Demand (Peak Gallons per Minute)	Waste Water (Gallons per day)	Parking Demand (Spaces)	Police/Fire/EMS Service (Calls per year)
H1	New Residence Hall				33	6,000	150	26
ACADEMICS								
Description					Water Demand (Peak Gallons per Minute)	Waste Water (Gallons per day)	Parking Demand (Spaces)	Fire/EMS Service (Calls per year)
A1	Morgane Hall Addition				10	400	4	3
A2	Marine Science Patio Enclosure				5	100	0	0
A3	Marine Science Addition				10	800	5	2
A4	Creative and Fine Arts Addition				NA	NA	0	1
A5	Marcil Hall Addition				10	400	4	2
SUPPORT								
Description					Water Demand (Peak Gallons per Minute)	Waste Water (Gallons per day)	Parking Demand (Spaces)	Fire/EMS Service (Calls per year)
S1	Storage Facility				NA	NA	0	0
S2	Campus Center				10	300	2	5
S3	Waterfront Access for Recreation				NA	NA	0	1
S4	Waterfront Access for Research				NA	NA	1 (ADA)	1
S5	Storage Facility				NA	NA	0	0
S6	Petts Center Addition				5	200	6	7
S7	Pickus Center Addition				10	300	0	1
S8	Wastewater Treatment Facility Addition				NA	NA	0	0
ATHLETICS								
Description					Water Demand (Peak Gallons per Minute)	Waste Water (Gallons per day)	Parking Demand (Spaces)	Fire/EMS Service (Calls per year)
F1	Athletic Track/Field				NA	NA	2 (ADA)	2
F2	Athletic Storage				NA	NA	0	0
F3	Tennis Courts/Pressbox/Storage				NA	NA	1 (ADA)	1
F4	Athletic Field				NA	NA	2 (ADA)	2
F5	Athletic Storage				NA	NA	0	0

8- Neighborhood Impact

a. An assessment of how current campus activities impact neighboring residential areas including, but not limited to, traffic, noise, and visual intrusions. This assessment shall consider conformity to current City and state standards with respect to these items as well as documented evidence of any community or neighborhood concerns relative to these issues.

b. An evaluation of current efforts to mitigate these impacts.

Traffic

Consistent with the requirements of the Institutional Zone Master Plan and during Site Plan review processes, the University has had traffic engineering consultants conduct studies to assess the traffic situation around the campus and identify any problems, their causes, and potential mitigation opportunities (See detailed traffic report in Section 5 Parking and Traffic).

Hills Beach Road is the primary road that runs through the heart of the campus core. It is the primary access road for the Hills Beach residents to use while traveling to and from their homes and surrounding community. Both the University community and Hills Beach community also access the campus from Old Pool Road.

In response to concerns raised by the residents of the Hills Beach community in 2005, the University initiated a policy, that states “*No University of New England employee, office or department, student or student group shall sponsor or schedule any event, be it University related or one contracted by UNE with an outside group or organization, that would allow participants of that event to walk or run down Hills Beach Road*”, into the Hills Beach Community. This policy has been successfully adhered to and is still in place.

During the period of time that the Institutional Zone was being created, the City, the University, and the abutting neighborhood of Hills Beach held numerous discussions about the need for a by-pass road to eliminate the need for through traffic within the campus. A survey conducted by a Mayor’s Ad Hoc Commission, circa 2001, indicated that at that time, the majority of residents in the Hills Beach area did not support construction of a by-pass road. The Traffic Study located in Section 5 also concludes that the University’s growth plans for the next five years do not warrant construction of a bypass road. However, the City may determine that it wishes to pursue construction of a bypass road or other traffic improvements, for economic development and anticipated residential growth of the neighborhood. UNE’s conclusion that a bypass road is not required by the University’s five-year growth plan is a separate issue from any City determination that a bypass road is desired to address other neighborhood needs.

With the development that has occurred on the westerly side of Route 9, there was the need to install pedestrian safety improvements on Route 9. The plan was fully

implemented and has resulted in a much safer environment for pedestrians and vehicles. A request was received in the Fall of 2015 to trim overhanging branches that were obstructing the pedestrian crossing lights. This work was completed shortly after the call was received. Several reports of pedestrians crossing Route 9 without activating the pedestrian crossing lights have been received. In response to this concern, the University's Safety and Security Department focus on this topic, and general pedestrian/vehicular safety, during their mandatory annual training sessions conducted with all resident students at the beginning of each year.

The University was issued a Traffic Movement Permit, TMP, from the Maine Department of Transportation in 2009. This was based on its development and projected student growth to 2623 students on its Biddeford Campus. This projection was never realized and the newest projection for 2027 is set at 2290 students. The existing TMP, and the improvements made as a result of that permit, more than adequately addresses the projected growth contained within this Master Plan update.

It is the University's plan to gradually transform the Biddeford campus into a "walking campus" that is safe for both pedestrians and motorists. The University intends to continue the dialogue with its most immediate neighbors, as well as with Biddeford City officials and other stakeholders in the community to discuss any ongoing vehicular/pedestrian safety issues that might arise.

The University staffs all home games and major events on campus with Safety and Security Officers to assist with crowd control and pedestrian safety. For events that are determined to have a potentially significant impact on the community, notices are sent out to neighbors in advance to alert them and to solicit feedback prior to the event occurring. For example, the University had to host its Commencement on campus in 2014 as a result of the ongoing construction at the Cumberland County Civic Center. This resulted in a large number of vehicles coming to and from the campus during a limited amount of time, and was coordinated with the local public safety officials and the community was notified well in advance, in order to minimize the impact of this event.

Concerns recently discussed at the University's Institutional Zone – Master Plan Submission Community Workshop, held on November 2, 2015, included pedestrian crossings at Decary Hall and lighting levels at the crosswalks along Hills Beach Road. The University has included the pedestrian crossing at Decary Hall on its Conceptual Development Plan, but will need to work with the City and local community to identify an acceptable plan that would address this concern. The lighting issue will be evaluated and solutions implemented as the University continues with its landscaping enhancement program.

Noise

During the development on the westerly side of Route 9, the University received several calls related to noise. These were a result of contractors starting work earlier than 7am or later into the evening. The calls were evaluated and addressed on a case by case basis.

The university attempts to provide notice to its neighbors when it anticipates louder than normal activities, such as the bi-annual cleaning of the seawater tank at the Marine Science Center and when construction activities, including increased vehicular traffic, may occur near their property.

To mitigate concerns about noise from construction activities, the University will continue to follow the model used during the construction of the last several projects, which includes making the contractors aware of the City noise ordinance and related times, and require that they notify the City Code Enforcement Office of any work activities before 7:00a.m and after 10:00p.m. The University has also maintained its waste pick up schedule to limit trash hauling before 7:00a.m. The University feels that these efforts will further reduce any real or perceived impacts from noise generated by on campus activities.

Visual Intrusions

The University believes its current campus does not cause any visual intrusions on the adjacent neighborhood. The University will continue to incorporate appropriate landscape design elements in all future projects. (See *Appendix A - Landscape Design Standards*)

Air Emissions

The University is signatory of the American College & University Presidents Climate Commitment (ACUPCC). Signing the ACUPCC is an affirmation of UNE's sustainability efforts already under way. The University has been working to reduce its air emissions through the use of cleaner burning fuels. For the past decade the University has been utilizing liquid propane in its central heating plant and has begun to utilize Bio-fuel in its other heating plants. The use of Bio-fuel and propane has resulted in a significant reduction of carbon dioxide emissions. The University conducts an annual, university-wide greenhouse gas inventory and reports this metric to its Board of Trustees on an annual basis since 2010. For each of these years, the University has been successful in reducing its Metric Tons of Carbon Dioxide Equivalent, MTCDE, from its emissions, even while increasing its population and/or square footage of buildings.

The University has had no violations of its Air Emissions license in the past ten years. In 2008 the DEP conducted a site inspection of the University Campus and found no issues with the University's heating plants or recordkeeping.

c. An assessment of any changes in these impacts resulting from the changes in programs or facilities included in the Master Plan.

In each and every instance where the University has identified either a realistic or perceived impact, the University will be proactive in its approach to communicate and collaborate with its neighbors and City officials. Early problem identification and frank

and open communication are cornerstones of the foundation that must be built in order to effectively and successfully build bridges of understanding and cooperation between the University, its immediate neighbors, and the City. Only then, the University believes, can the elusive common ground be sought and found together for the benefit of all parties involved.

d. A program for mitigating the adverse impacts of proposed changes or improvements on surrounding residential neighborhoods.

The detailed design process for any new structure on campus, which is a normal part of project development, will include assessments of traffic, landscaping, lighting, noise and foot traffic, and the University will be obliged to conform to the then-controlling federal, state, regional and local requirements for land use development site plan review. The design process for each project must, by law, address the requirements of these laws to assure that the levels of traffic, landscaping, lighting, and noise do not exceed lawful levels. But the precise standards may vary through time, and the University must address the specific requirements through the Site Plan review procedure, along with any required mitigation efforts.

In an effort to minimize the vehicles parking and traveling to and on campus the University has successfully implemented several programs. These Traffic Demand Management strategies and their effectiveness are outlined in detail in Section 6.

9- Community Outreach

a. Description of current community outreach activities.

The University of New England believes itself to be a good neighbor and active participant in the community. We have strong relationships and partnerships with many community and neighborhood organizations, as well as civic and local government entities. The following is just a brief sampling of the outreach the UNE conducts. Additional information can be found on the University's website.

<http://www.une.edu/>

University representatives meet regularly with leaders from the Hills Beach Association to share information and identify, discuss and address any challenges. In addition, an annual Friends and Neighbors reception is held on campus every summer to gather and share information with our neighbors in the coastal area.

As the University of New England continues to broaden its profile in the region and beyond, ongoing engagement with citizens in the communities where we live and work is increasingly important.

Lecture Series and Public Events

President's Forum Lecture Series

The President's Forum is an event series consisting of moderated panel discussions, debates, or other highly interactive presentations on controversial issues. Underscoring the academy's unique role as the ultimate marketplace of ideas, the forum allows for open and robust discourse on timely topics, presenting diverse perspectives in a fair and balanced manner. The goal is not to privilege any particular ideology but, rather, to promote habits of mind and argumentation that enlighten students and the public and that promote a deeper understanding of critical issues facing our society.

George and Barbara Bush Distinguished Lecture Series

The George and Barbara Bush Distinguished Lecture Series is an annual event honoring the legacy of President and Mrs. Bush as political and community leaders.

The Center for Global Humanities Lecture Series

The Center for Global Humanities hosts speakers and films from around the globe and across the spectrum of the humanities.

For additional event and lecture opportunities please see the UNE website.

<http://www.une.edu/>

Public Service and Volunteerism

Numerous members of the university hold volunteer leadership positions with local civic organizations.

The university continues to value its long-standing relationships with community groups by providing meeting space for events such as meetings of the Biddeford City Council, the Biddeford/Saco Chamber of Commerce, the City of Biddeford's Volunteer Recognition Dinner, as well as for the local Rotary clubs.

Within the City of Biddeford and throughout the state, University faculty, staff, and students provide thousands of hours of community service, both as volunteers and as part of their clinical training and grant-funded projects. It is estimated that UNE students volunteer about 10,000 hours to more than 150 Maine organizations each year. Here are *just a few* of the *hundreds of ways* that UNE reaches out into the community:

The University of New England supports the **Maine Area Health Education Center (AHEC)** Network's mission to alleviate health workforce shortages in rural and underserved areas of the state. AHEC supports that effort by working with academic and community partners to:

- **Provide** rural, community-based clinical training experiences for medical and other health professions students
- **Encourage** Maine youth and mid-career professionals to explore health careers
- **Support** practicing health professionals with continuing education and distance learning opportunities

Citizenship is a permanent part of the core curriculum at the University. Through the College of Arts and Sciences Citizenship Learning class, students provide more than 4,000 hours of community service each year at 16 sites in six communities. This outreach is largely focused in one-on-one mentoring projects at area schools. A Citizenship Service Learning Coordinator oversees these service experiences and strengthens the University's ties with the local community.

UNE's freshman orientation **Trailblazer program** engages new students to volunteer at soup kitchens, paint and maintain area homes for the elderly, enhance the YMCA camp facilities, and assist with special needs adults. Our Athletic program organizes fundraisers and holds clinics for area students. The faculty and students of the Department of Environmental Studies volunteer to teach in local schools, operate in planning offices, perform environmental clean-ups, manage preserved lands, and design environmentally sensitive projects.

UNE's College Community Mentoring Program (CCMP) is a volunteer mentoring program that seeks to engage UNE students in the community by serving as consistent, reliable adult role models for local children and teens.

Mentors build a structured and trusting relationship with their mentees by offering guidance, support, encouragement and academic assistance. Through the CCMP mentoring relationship, UNE mentors help young people develop into confident, competent and contributing members of society. In turn, student-mentors strengthen their dedication to the community and thoughtfully enhance their college experience.

Through the CCMP, the University of New England partners with the following schools and organizations: Biddeford Head Start, Biddeford Primary School, Biddeford Middle School, Kennebunkport Consolidated School, Sea Road School of Kennebunk, the Middle School of the Kennebunks, Jameson School of Old Orchard Beach and the Northern York County YMCA.

UNE students participate in numerous academic and research initiatives, many of which have significant local impact. While the research being conducted at the university is too expansive to detail in this document, from the study of the endangered short nose sturgeon, to the study of opioids on pain, and everything in between...UNE is committed to making the community in which we live better. See the attached link for an in-depth sampling of the research at UNE.

<http://www.une.edu/research>

UNE is proud to sponsor **Educate Maine** and work together to fulfill our common goal of increasing the number of Mainers earning post-secondary degrees and credentials that will serve them as members of a talented, globally competitive workforce. Educate Maine and UNE share the beliefs that education is the catalyst and foundation for individual success, engaged citizenship and sustainable economic growth and that all learners, traditional and adult, should have equal access to high quality educational opportunities and the resources to make a successful transition to post-secondary education. By working together with Educate Maine's network of educators, industry leaders and workforce development organizations, UNE gains further insight into the needs of Maine learners and employers.

The University of New England is addressing the region's need for **health informatics specialists** through a pilot initiative to create new models of education with funding from the Bill and Melinda Gates Foundation.

Health care is changing dramatically with physicians, hospitals and patients expecting decisions to be made on data, evidence and best practices. The challenge is turning the huge number of data points into meaningful information that can be used for improved outcomes. Health informatics professionals review the data sets to find trends and communicate results to guide those making decisions that affect the health of the people in our communities.

The University of New England (UNE) and **Biddeford High School** signed an agreement between the two institutions that will enable high performing Biddeford High students who matriculate at UNE to earn college transfer credits, potentially enabling the students to earn a bachelor's degree in just three years.

The agreement will give Biddeford high graduates the opportunity to receive course credit at UNE if accepted to the university, provided that their scores on Advanced Placement (AP) exams meet specific cut-offs. If students are able to transfer a minimum of 30 credits, they may enroll at UNE with sophomore standing.

The University of New England became is a local performance site of the **New England Public Health Training Center (NEPHTC)** with funding from Health Resources and Services Administration (HRSA). The NEPHTC is administratively housed at Boston University School of Public Health (BUSPH), and encompasses all six states in the region. In addition to UNE, other local performance sites include BUSPH, Dartmouth College, University of Massachusetts Amherst and Yale School of Public Health. The NEPHTC is one of 10 regional centers and one national coordinating center selected and funded by HRSA to address training needs of state and local public state practitioners nationwide. The goal of the NEPHTC is to strengthen the technical, scientific, managerial and leadership competencies of the current and future public health workforce in New England to ensure regional capacity to deliver high quality essential public health services

From sponsoring blood drives to student mentoring in area elementary schools to volunteering their talents on town committees, UNE faculty, staff and students volunteer thousands of hours of their time in important projects benefiting the southern Maine communities in which they serve and live. Additional examples of ways this is accomplished include the following:

- **Community Engagement**

- The annual Brain Fair engages with local community in a science fair exploration of the brain
- UNE faculty, professional staff and students involving 5-10 volunteers visit k-12 schools in the Biddeford system to run interactive lesson/modules about neuroscience including brain anatomy, function, and injury.
- Southern Maine Brain Bee an international campaign organized by the Society of Neuroscience host the regional portion of the competition with local participants from the Biddeford High School. The participants of the brain bee are tutored by UNE students prior to the event.
- Maine Science Festival brings science to the public. UNE faculty, professional staff and students involving 5-10 volunteers typically participate
- Admission Leadership team

- Providing practice college interviews for Biddeford High School juniors
 - Adding application review days for the junior year
- Over the past five years, UNE has received an average of 25 applications / year from Biddeford High School students, and enrolled an average of 7 Biddeford students / year.
- UNE admissions visits Biddeford High School at least twice per year – one for a traditional high school “UNE information” visit, the other for an on-spot review day of applicants. If Biddeford High School holds a general college fair, we will also attend. Other offerings have included a “transition to college” seminar for Biddeford high school seniors – offered in collaboration with UNE Affairs in 2018 – and an admissions essay writing workshop.
- UNE has an articulation agreement with Biddeford High school, developed through our CAS Dean’s office, recognizing students who have taken a significant number of Advanced Placement courses and exams with advanced standing at UNE.
- We have employee and student discounts with business located in Biddeford.
- UNE’s residential meal plans have Nor’easter Dollars that can be spend at participating local restaurants.
- UNE Athletic Events
 - From September 2019 to March 2020 welcomed 24,000 fans to varsity home games, many from our local community
 - From May 2019 – March 2020 we hosted just under 1,100 children age 4-18 at through our camps and clinics, again – many of were from our local community
 - We agreed to an MOU with the Biddeford Youth Hockey Association in March 2020, where UNE has given them permission to use “Junior Nor’easters” as their nickname. UNE recognizes that the roots of its ice hockey program began at Biddeford Ice Arena and recognizes the unique connection between the local youth hockey community, the Biddeford Ice Arena and UNE, UNE agrees to grant BYHA permission to use the Trademark, in the United States, under the terms provided herein.
- Ketchum Library welcomes local community as a make shift coffee house.
- The Ketchum Library participates with the MaineCAT system that allows anyone with a valid library card to borrow books from our library if they have a valid McArthur Library card.
- Ketchum Library historical collections that are shared with the public
 - St. Francis High School and College Collection/ St. Francis Francophone Collection
 - The George & Barbara Bush Legacy collection

- The Art gallery
- Westbrook College history collection
- Maine Women Writers collection

- **Clinic**

- Cardiovascular Health Intervention Program for 100 students at Biddeford Intermediate School through UNE Department of Exercise and Sport Performance
- Internship with Four Applied Exercise Science students at follow locations
 - Seacoast PT
 - Biddeford PT
 - Malon Chiropractic
 - Southern Maine Health Care
- Internship with 5-7 students from UNE Athletic Training program intern at the Biddeford High School Athletics program
- Laurie Cyr-Martel, UNE faculty, was recently called on by the Maine Association of Psychiatric Physicians and the Maine Department of Health and Human Services to assist with a new Frontline Warmline, designed to lend support to first responders and health care workers dealing with the coronavirus pandemic. She is part of the faculty who support the team of 90 volunteers made up of physicians, nurses, counselors, and social workers who staff the phone line from 8 a.m. until 8 p.m. each day. They offer what is known as psychological first-aid (PFA).
- UNE Students volunteer to administer COVID-19 vaccinations to health care workers.
- Five students in the College of Osteopathic Medicine formed the Maine COVID Sitters, a group of health professions students providing child care, pet care, and household services to health care families.
- Their clinical studies on hold, UNE COM students take lead in COVID-19 testing efforts
- UNE faculty providing vaccination training to help address public health emergency
- UNE donates fit testing solution for N95 masks to Maine counties and Maine CDC
- In remote Deer Isle, UNE COM students assist virus-stricken nursing home
- UNE participates with City of Biddeford proclaiming March 15th -21st as Brain Awareness week.
- UNE participates with City of Biddeford proclaiming the month of September as Chronic Pain Awareness month.
 - UNE schedules seminars through the UNE's Excellence in Collaborative Education (CECE & CEN) program to bring awareness of Chronic Pain

- UNE Library & CEN created the Pain Chronicles at UNE with patient images and stories which were shared with the community about the research done at UNE.

- **Service**

- UNE Student provide teachers as full-time educators in public school system
 - 3-current students are UNE Football players
- Saco River Clean up: Sarae Sager (D.O.'21) is part of a group of scuba divers helping to remediate a portion of the Saco River which has been littered with beer bottles and other debris by inconsiderate parties
- UNE students, faculty and staff participate annually in Coastal Clean ups in Biddeford, Saco, and Old Orchard Beach
- Biddeford Pool Water Quality sampling project. Over the past year, several UNE researchers, both faculty and student, and our Planning Office have been collaborating with the City of Biddeford and the Department of Marine Resources, DMR, on a testing protocol to continue and augment the work that the City and DMR have already done in this area. Along these lines, the University is committing research labor and \$5000 towards the actual testing expenses.
- West Brook Skating Rink; UNE Department of Campus Services staff have volunteered to work with the West Brook Rink volunteers to repair site lighting and snow removal equipment and to review the maintenance needs of the facility. UNE has offered the use of its bucket truck and assisted in obtaining donations of light fixtures.
- Has provided space to host city events, like retirement parties
- Donations of furniture to Biddeford schools and Public Works
- Subsidizes the BSOOB Silver Line, and provides all faculty, staff and students free mass transit on BSOOB Transit, Portland Metro, South Portland City Bus Service, ZOOM and Metro Breeze
- Provides ongoing maintenance of the Town Burial Grounds, including removal of downed trees this past winter
- Provides maintenance of city sidewalks adjacent to campus
- Has partnered with the Rachel Carson Wildlife Refuge to preserve approximately 5.79 acres of the Biddeford Pool Marshland.
- Has partnered with Saco Valley Land Trust to preserve approximately 160 acres of UNE land, in its natural state.
- UNE researchers have and are working on projects that effect the local environment and economy.
 - Green Crab
 - Kelp farming/Aquaculture
 - Salmon
 - Sturgeon

- Sustaining the Saco Estuary
- Saco River Water Quality
- Biddeford Pool Water Quality
- Assessment of the bird community that uses the Saco River's tidal marshes

- **Philanthropic**

- 7-10 Students from UNE Applied Exercise Science program organize a 5k race to raise money and/or donations for the Biddeford Food Pantry
- Annual Teddy Bear toss events at the UNE men's and women's hockey games, where after the first goals scored by UNE's teams, fans in attendance toss thousands of stuffed animals onto the ice. Those, and more, are then donated to the Southern Maine Health Center as well as the Seeds of Hope Neighborhood Center in Biddeford. This year, more than 3,400 stuffed animals were collected for donation, bringing the event's six-year total north of 18,000. The Forum Student Building Managers also raised \$8,000 for the United Way of Southern Maine.
- The University of New England lacrosse programs hosts the Annual Lax-4-Life event, with all the proceeds, benefiting The Barbara Bush Children's Hospital at Maine Medical Center in Portland
- The University annually donates lightly used classroom furnishings to several agencies for repurposing in schools and recreational facilities. Residential furniture is donated annually to homeless shelters and other organizations supporting those in need.

b. An analysis of anticipated changes in outreach activities over the next five years.

The University will continue to provide an important service-related role in the community. Now more than ever, access to quality, free medical care is vital, and we recognize our commitment to providing this and other social service programs in the region. With cutbacks in budgets at area schools and in other programs, UNE understands the positive, important impact our student mentors and volunteers have, and will continue to build on those programs.

It is important to recognize that outside of UNE's significant volunteer and public service contributions to the region, UNE's economic impact is substantial. As of 2017 UNE's current direct sales impact on the Maine economy was over \$145 million, supporting over 3800 jobs and providing income of over \$172 million to the households who hold these jobs – many right here in the local community. UNE is the 5th largest employer in York County and 20th largest in the state. These sales filter through to the local economy and provide **a total economic impact on the state of over \$1 billion**. Please see the attached 2016 report entitled "*The Economic & Fiscal Impact on Maine of The University*"

of New England, Academic Year 2016”.

This analysis estimates the UNE attracts over 24,000 visitors to Maine each year, generating \$22 million in sales to local businesses and that UNE student spending drives another \$42 million in sales.

Our ability to continue to positively impact the community through public service and volunteerism will increase exponentially with each new employee and student relationship we establish.

10 - Conceptual Development Program

a. A conceptual Site Plan at the same scale as the existing conditions plan showing the approximate size and location of proposed changes to buildings, structures, parking lots, pedestrian facilities, bicycle facilities, athletic fields and facilities, roads, and similar facilities proposed in the Master Plan. This should show new facilities, modifications or enlargements of existing facilities, and the planned removal of facilities.

Please refer to the Campus Master Plan – University Properties plan and the Campus Master Plan - Five Year Development Strategy plan, located in the back of this section.

b. An accompanying narrative or tables detailing the scale or size of the proposed improvements including the approximate height of buildings, the approximate peak elevation of buildings and structures referenced to NGVD, approximate floor area, approximate size of parking areas, or approximate occupancy.

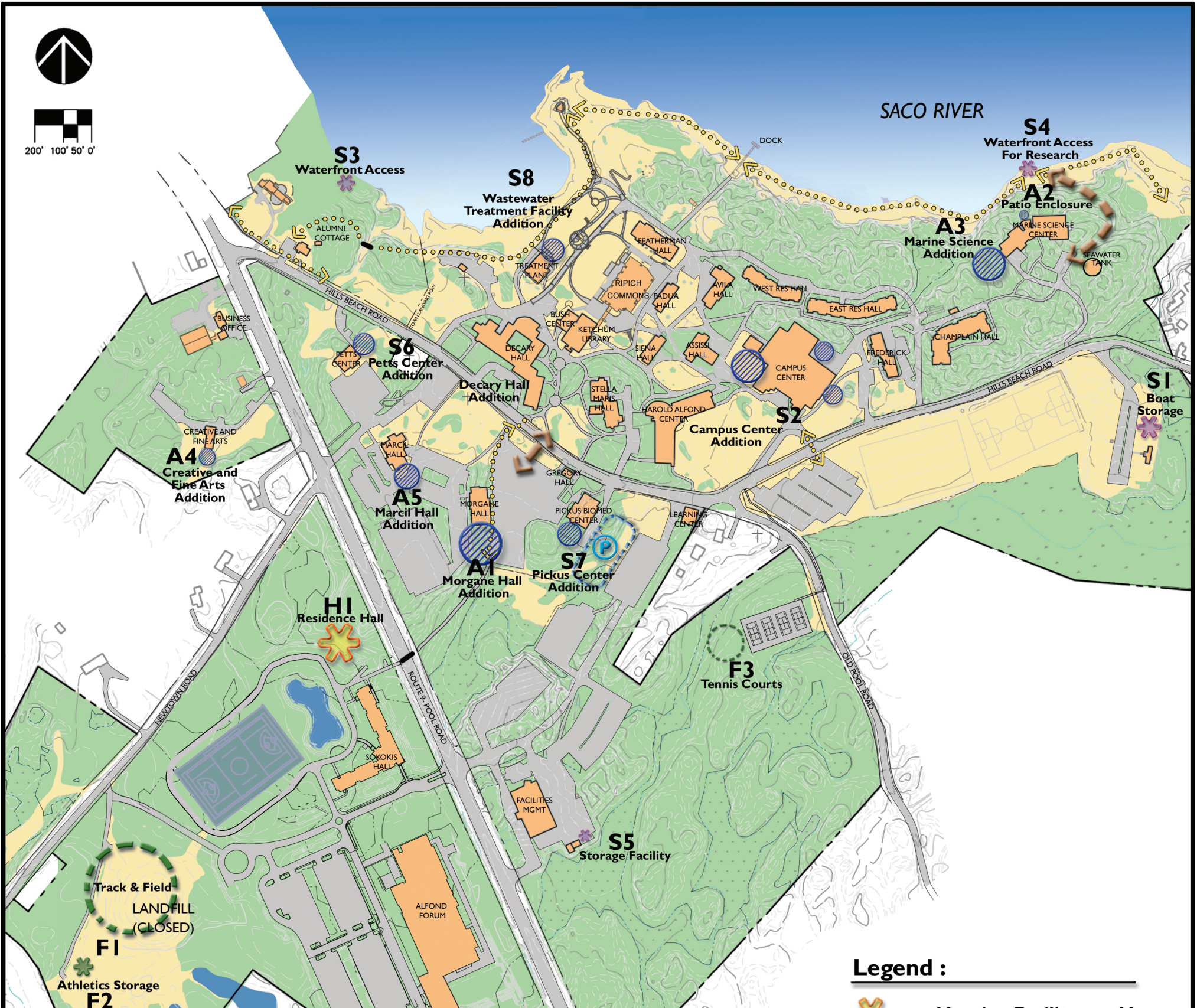
Please refer to the Campus Master Plan 5-year Projections table, located at the back of this section.

c. A description of all development and design standards or provisions that will apply to the proposed improvements in accordance with subsection I.

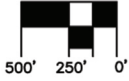
See Appendix A, Development and Design Standards.

d. A schedule setting out when the improvements included in the conceptual development program are anticipated to be completed.

Please refer to the Campus Master Plan 5-year Projections table, located at the back of this section.



Legend :



364 ACRE PARCEL

Legend :

- Housing Facility
- Academic Facility
- Support Facility
- Athletic Facility
- Athletic Field
- Addition
- Vehicular Circulation
- Pedestrian Circulation
- Parking Facility
- University of New England Property (Cleared-Wooded)

Note:
Graphic symbols are representative of approximate building size (footprint) but are not representative of building shape or height.

January 18 2023

January 18, 2023

University of New England - Biddeford Campus
Campus Master Plan - Five Year Projections (2023-2027)

Programming Building Blocks

12/7/2022

HOUSING							
Description	PRIORITY	APPROXIMATE FOOTPRINT (SQ. FT.)	STORIES	APPROXIMATE TOTAL (SQ. FT.)	ESTIMATED OCCUPANCY	HEIGHT**	NGVD**
H1 Residence Hall	3	25,000	4	100,000	300 (b)	50'	108
ACADEMICS							
Description	PRIORITY	APPROXIMATE FOOTPRINT (SQ. FT.)	STORIES	APPROXIMATE TOTAL (SQ. FT.)	ESTIMATED OCCUPANCY	HEIGHT**	NGVD
A1 Morgane Hall Addition	2	15,000	3	45,000	6 (o)	65'	107'
A2 Marine Science Patio Enclosure	1	1,100	1	1,100	0 (o)	35'	70
A3 Marine Science Addition	1	10,000	2	20,000	5 (o)	35'	70'
A4 Creative and Fine Arts Addition	2	5,000	2	10,000	0 (o)	35'	90'
A5 Marcil Hall Addition	3	7,000	3	21,000	6 (o)	50'	112'
SUPPORT							
Description	PRIORITY	APPROXIMATE FOOTPRINT (SQ. FT.)	STORIES	APPROXIMATE TOTAL (SQ. FT.)	ESTIMATED OCCUPANCY	HEIGHT**	NGVD
S1 Storage Facility	2	8,000	1	8,000	na	35'	55
S2 Campus Center	3	12,000	2	24,000	2 (o)	50'	80'
S3 Waterfront Access for Recreation	1	na	na	na	na	na	na
S4 Waterfront Access for Research	1	na	na	na	na	na	na
S5 Storage Facility	2	2,000	1	2,000	na	35'	75
S6 Petts Center Addition	2	5,000	2	10,000	7 (o)	35'	85'
S7 Pickus Center Addition	3	5,000	3	15,000	6 (o)	65'	89'
S8 Wastewater Treatment Facility Addition	3	6,000	1	6,000	0 (o)	35'	47'
ATHLETICS							
Description	PRIORITY	APPROXIMATE FOOTPRINT (SQ. FT.)	STORIES	APPROXIMATE TOTAL (SQ. FT.)	ESTIMATED OCCUPANCY	HEIGHT**	NGVD
F1 Athletic Track/Field	1	na	na	na	na	na	na
F2 Athletic Storage	2	2,500	1	2,500	0 (o)	35'	100
F3 Tennis Courts/Pressbox/Storage	1	160	2	240	na	35'	60
F4 Athletic Field	1	na	na	na	na	na	na
F5 Athletic Storage	2	2,500	1	2,500	0 (o)	35'	85

Occupancy Key:

- (b) = Beds
- (o) = Offices

** All building heights are approximates

Priority Key:

- 1. = 1-3 years
- 2. = 2-4 years
- 3. = 3-5 years

APPENDIX A

UNIVERSITY OF NEW ENGLAND INSTITUTIONAL ZONE MASTER PLAN SUBMISSION 2023-2027

Appendix Section 1 - Landscaping

I. Development and Design Standards

The Institutional Master Plan shall establish development and design standards that shall apply to all development proposals and other improvements within the Institutional Zone. These development and design standards will apply to individual projects that are submitted for site plan review. These standards shall foster the development of a visually and architecturally integrated campus that is safe, environmentally sensitive, and that minimizes the adverse impact of the campus on neighboring residential areas. At a minimum, these development and design standards shall address the following areas:

1. Landscaping - The standards shall establish a general pattern for all campus landscaping including the typical size and type of plantings and shall detail how landscaping will be used to enhance the visual environment of the campus, shield and soften service and parking areas, and minimize impacts on surrounding residential areas and the users of public streets through the campus.

Landscape and Planting Guidelines

Introduction

The campus contains an arrangement of buildings sited on an undulating landform within the confines of a wooded landscape.

These improvements shall consist of aesthetic planting designs that provide identity to site-specific areas, such as a specimen tree set in a corner of a quad or specialty plantings of native flowering trees at a building entrance. Specific street tree species may be planted along the primary vehicular routes to establish a 'spine' across the campus while other varieties are used along pedestrian ways. As well, improvements may consist of planting designs that provide identity and character to the campus as a whole. This will be generally be achieved with the use of native varieties present in the surrounding woodlands and reaffirming the rural character of the campus with preservation of the natural topography and existing native vegetation.

In addition to these general planting concepts and guidelines, the University seeks to begin the creation of a campus arboretum. The arboretum would serve to integrate the natural environment into the academic classroom. Areas of development would be selected based on their existing unique characteristics, or potential for enhancement. These areas would be developed with plantings (native and non-native specimen species) and hardscapes, in an effort to provide educational opportunities in an enhanced exterior setting.

Areas of consideration include the following:

The University will look to enhance the Main Entrance at Hills Beach Road and Route 9 to make it more welcoming and visible to drivers that are headed northbound. This work could include a new stone wall with institutional signage, gateway signage, landscaping elements and new planting beds.

A series of nature trails exist along much of the University of New England's shoreline. These trails provide an exceptional opportunity to experience the coastal environment, and connect the campus community to the Saco River and Atlantic Ocean. The University would like to expand this connectivity and would like to extend this trail system along its entire shoreline, connecting the Welcome Cottage to Jordan Point, and then on to the University's beach. This would enhance the connectivity to the Saco River and provide for many new educational opportunities, as there are several microhabitats in that area that do not exist anywhere else on campus. This new trail will require a bridge to cross over the stream in this area. This trail would be coordinated with the Maine DEP, Saco River Corridor Commission and the City. Handicap accessibility will be considered in this enhancement.

The vision of a campus wide arboretum is one that is shared by many in the Campus Community. Thus, the University may work towards developing landscaped areas specifically to utilize them to enhance the academic environment of the campus as a whole. These areas could have complimenting hardscaped areas (walks, patios, courtyards, seating or retaining walls, etc.) to allow for a more intense use, while protecting the adjacent, highlighted vegetative areas

Overview

Historically, a simple vocabulary of lawns and canopy trees defined the development of most American campus landscapes. The University of New England's Biddeford Campus contains the beginnings of such a vocabulary: mature trees among expanses of lawn. The purpose of the planting guidelines is to reinforce the positive elements of the existing planting vocabulary while accentuating the rural quality that currently defines the campus landscape character.

The planting guidelines are organized in nine categories of simple planting design intent that may bring individual identity to specific site locations or add continuity to the campus as a whole. Intrinsic to these guidelines are the following principals:

- Native plant species should be utilized, except in areas where it is advantageous to create pockets of non-native species in an effort to provide exposures to species that might not normally be found in the area.
- Sensitivity to natural ecosystems shall be enforced.
- Plant material with low maintenance and water use requirements should be specified.
- Proper arboricultural practices should be utilized for future tree planting.

- Existing mature trees should be protected in areas of defined open space.
- Landscaping designs and maintenance should consider the safety of the University community.

Guidelines

Street Trees

The planting of street trees is recommended in order to help establish a visual hierarchy across the campus relative to circulation, delineating between primary, secondary, and tertiary vehicular routes. A rhythm and pattern of street trees, mirrored along a road's centerline, provides a sense of perspective, channels views, establishes scale, and sets order across a longer distance. Tree species with similar growth habits should be used along Hills Beach Road to create definition of a campus edge along the primary vehicular route that bisects the campus. A different street variety should then be used along campus streets that branch off of Hills Beach Road in order to establish a hierarchical order to proposed street tree patterns.

The use of various species with similar growth habits on a longer road such as Hill Beach is to reduce susceptibility of disease and pest that may arise when a single species is used. Changes to the plant variety should be coordinated with breaks in tree rows due to sidewalk crossings, driveway curb cuts, and underground utilities.

Shade Trees

The rural character of the campus allows for shade trees to be planted in most locations, either individually or in groups. In turn, this will allow for an increase in the variety of native species and bio-diversity of the campus ecosystem.

Informal gathering places along pedestrian circulation routes should be planted with shade trees to provide shade and to act as a 'place marker' from a distance. Pedestrians looking for a place to rest or relax will have a visual cue of shaded lawn areas established by large shade trees. Additionally, intermittent plantings of a shade tree should be made along the edge of passive-use space to provide shade and rest from activities.

Multiple shade trees should be planted close together in various campus locations to create groves. This solid vegetative form may be formal or informal, but the result is that no individual tree stands out; instead the trees have a collective presence within the landscape. This type of planting should be encouraged because it is representative of the native vegetation found along the campus periphery.

Flowering Trees

The use of flowering trees creates an intimate scale due to the low height of the tree's canopy and with the tree's flowers and foliage commonly at pedestrian eye level.

Flowering trees should be used in various campus locations including campus gateways and building entrances. Designs for these site-specific locations create a spatial design individual to a location while adding continuity across the campus. For instance, a formal design at an academic building entrance can be made with pink flowering trees while the same trees are planted in an informal manner at residential buildings.

While a planting of flowering trees directs focus to an area, the planting design needs to be sensitive to the unique qualities and character of that area. Considerations should be made to site-specific soil conditions and other environmental constraints such as solar exposure.

Evergreen Trees

Low branching coniferous trees that are dense in their leafing pattern are often best utilized as visual and physical barriers. Plantings of evergreens should be used primarily to direct views away from or screen building service areas or other visually unattractive campus elements such as trash dumpsters.

Although evergreen trees and shrubs are useful as visual or circulation buffers, careful consideration should be made so that plantings do not interrupt desired view corridors, open space or pose a public safety concern by providing too much of a visual screen. Additionally, similar to all the other plant types, the long-term growth habits of particular species needs to be incorporated into the design process in order for the best suited plant material to be selected.

Specimen Trees

Certain specimen trees should be considered for selection because of some unique quality that a specific tree may offer. Such trees are usually planted individually, to create a point of reference or focal point within a particular spatial context. For instance, a mature specimen tree may be located close to building to create a sense of scale or a planted alone so that its growth habit can be observed from a set distance.

Spatial character of a campus location can be well defined with a specimen tree. As new buildings are erected and the dynamics of the surrounding space changes, strategic plantings of specimen trees is encouraged to establish new visual connections. This is achieved by locating a specimen tree at terminal ends of an open space quadrangle. Special consideration should be paid to the selected species of tree, with the ultimate aim of increasing bio-diversity on campus. Species should be selected and matched for particular locations through criteria such as seasonal interest and mature height of the tree, setting and backdrop of the tree from distant views, and environmental constraints similar to flowering trees.

Future development should be sensitive to the location and condition of applicable trees from early design stages. As well, the current maintenance program, which incorporates arboricultural practices, should continue in order to preserve and protect the existing trees.

Foundation Plantings

Historically, foundation plantings were very limited in use around American campus buildings. This planting design treatment should be a limited practice across the Biddeford campus. Where foundation plantings are used, the design shall consist of shrubs, groundcovers, flowering trees and specimen trees used in limited numbers to highlight building entrances or unique features of architecture. Additionally, foundation plantings consisting of mostly evergreen plant material shall be used in locations to screen building appurtenances such as air conditioning units and trash dumpsters.

Shrub and Groundcovers

This planting guideline is the only category to include both deciduous and coniferous plants. Recommended shrubs have a mature height of approximately two feet, seasonal interests of foliage, and may have horizontal growth habit. The recommended groundcovers will add color, uniformity, and texture to the ground plane, help prevent erosion, and provide an alternate to lawn plantings.

Use will be in limited locations to provide definition of space and control of pedestrian circulation. Supplement shade, flowering tree plantings and foundation plantings at campus gateways and building entries to establish campus identity and continuity. The use of native species will reinforce the rural campus character by bringing the character of the bordering existing woodlands into the campus interior.

Special Zones

Special zones incorporate all the previous planting guidelines. For example, a special zone may incorporate a design of flowering trees and evergreens to note a campus marker, such as sign or information board for prospective and new students to find their way across campus. In particular locations, planting designs of groundcovers and specimen trees connected with native grasses may create a visual corridor and links between academic buildings or informal seating areas along pedestrian routes. In particular, special zones are to be used to establish or supplement planting designs to reinforce a campus wide identity, such as enhancing campus entry areas into campus gateways.

Plant Species Guidelines

Plant species need to be appropriate to the particular landscape and its scale, land use, circulation and gathering character, topography, and views. Species selected should reinforce the strengths of the landscape area and relationship to similar landscapes around the campus. This will work to add individual identity of each zone while uniting the campus landscape.

All plant material has been selected for seasonal and visual interest, mature height relative to location, desired growth habit and structure, visual tolerance, and specific soil conditions found across the campus. All the listed plant material is native to the New England landscape and will work to ensure a sustainable campus landscape. (Non-native

species may be selected and utilized, particularly in areas designated as part of the proposed campus arboretum.)

Street Trees

<u>Scientific Name</u>	<u>Common Name</u>	<u>Remarks</u>
<i>Acer rubrum</i>	Red Maple	Salt tolerant
<i>Acer saccharum</i>	Sugar Maple	
<i>Fraxinus americana</i>	White Ash	
<i>Fraxinus pensylvanica</i>	Green Ash	
<i>Nyssa sylvatica</i>	Black Gum	Salt tolerant
<i>Platanus occidentalis</i>	American Sycamore	
<i>Quercus alba</i>	White Oak	Salt tolerant
<i>Quercus macrocarpa</i>	Bur Oak	Salt tolerant
<i>Quercus borealis</i>	Red Oak	Salt tolerant
<i>Tilia americana</i>	American Linden	

Shade Trees

<u>Scientific Name</u>	<u>Common Name</u>	<u>Remarks</u>
<i>Acer rubrum</i>	Red Maple	Salt tolerant
<i>Acer saccharum</i>	Sugar Maple	
<i>Betula alleghaniensis</i>	Yellow Birch	
<i>Betula lenta</i>	Sweet Birch	
<i>Betula papyrifera</i>	Paper Birch	
<i>Carya ovata</i>	Shagbark Hickory	Salt tolerant
<i>Fagus grandifolia</i>	American Beech	
<i>Fraxinus americana</i>	White Ash	
<i>Fraxinus pensylvanica</i>	Green Ash	
<i>Nyssa sylvatica</i>	Black Gum	Salt tolerant
<i>Platanus occidentalis</i>	American Sycamore	
<i>Quercus alba</i>	White Oak	Salt tolerant
<i>Quercus macrocarpa</i>	Bur Oak	Salt tolerant
<i>Quercus rubra</i>	Red Oak	Salt tolerant
<i>Quercus palustris</i>	Pin Oak	
<i>Tilia americana</i>	American Linden	

Flowering Trees

<u>Scientific Name</u>	<u>Common Name</u>	<u>Remarks</u>
<i>Acer pensylvanicum</i>	Striped Maple	Salt tolerant
<i>Amelanchier canadensis</i>	Shadblow Serviceberry	Salt tolerant
<i>Amelanchier laevis</i>	Allegheny Serviceberry	
<i>Aronia arbutifolia</i>	Red chokeberry	Salt tolerant
<i>Aronia melanocarpa</i>	Black Chokeberry	

<i>Cornus alternifolia</i>	Pagoda Dogwood
<i>Sorbus americana</i>	American Mountain Ash

Evergreen Trees

<u>Scientific Name</u>	<u>Common Name</u>	<u>Remarks</u>
<i>Abies balsamea</i>	Balsam Fir	
<i>Chamaecyparis thyoides</i>	Atlantic Whitecedar	
<i>Juniperus virginiana</i>	Eastern Red Cedar	Salt tolerant
<i>Picea glauca</i>	White Spruce	Salt tolerant
<i>Pinus banksiana</i>	Jack Pine	Salt tolerant
<i>Pinus resinosa</i>	Red Pine	
<i>Pinus strobus</i>	Eastern White Pine	
<i>Thuja occidentalis</i>	American Arbor-vitae	Salt tolerant
<i>Tsuga canadensis</i>	Canada Hemlock	

Specimen Trees

<u>Scientific Name</u>	<u>Common Name</u>	<u>Remarks</u>
<i>Acer rubrum</i>	Red Maple	Salt tolerant
<i>Arctostaphylos uva-ursi</i>	Bearberry	Evergreen
<i>Aronia arbutifolia</i>	Red Chokeberry	
<i>Aronia melanocarpa</i>	Black Chokeberry	
<i>Betula alleghaniensis</i>	Yellow Birch	
<i>Betula papyrifera</i>	Paper Birch	
<i>Betula populifera</i>	Gray Birch	
<i>Carya ovata</i>	Shagbark Hickory	Salt tolerant
<i>Carpinus caroliniana</i>	American Hornbeam	
<i>Castanea dentata</i>	American Chestnut	
<i>Crataegus crusgalli</i>	Cockspur Hawthorn	
<i>Crataegus viridis</i>	Green Hawthorn	
<i>Fagus grandifolia</i>	American Beech	
<i>Fraxinus americana</i>	White Ash	
<i>Fraxinus pensylvanica</i>	Green Ash	
<i>Nyssa sylvatica</i>	Black Gum	Salt tolerant
<i>Populus grandidentata</i>	Bigtooth Aspen	
<i>Populus tremuloides</i>	Quaking Aspen	
<i>Quercus alba</i>	White Oak	Salt tolerant
<i>Quercus macrocarpa</i>	Bur Oak	Salt tolerant
<i>Quercus rubra</i>	Red Oak	Salt tolerant

Foundation Plantings

Scientific Name	Common Name	Remarks
<i>Amelanchier arborea</i>	Downy Serviceberry	
<i>Amelanchier canadensis</i>	Shadblow Serviceberry	Salt tolerant
<i>Amelanchier laevis</i>	Allegheny Serviceberry	
<i>Amelanchier polifolia</i>	Bog Rosemary	Evergreen
<i>Arctostaphylos uva-ursi</i>	Bearberry	Evergreen
<i>Aronia arbutifolia</i>	Red Chokeberry	
<i>Aronia melanocarpa</i>	Black Chokeberry	
<i>Bouteloua gracilis</i>	Misquito Grass	
<i>Cornus sericea</i>	Red-osier Dogwood	Salt tolerant
<i>Deschampsia caespitosa</i>	Tufted Hair Grass	Salt tolerant
<i>Hamamelis virginiana</i>	Common Witchhazel	
<i>Ilex glabra</i>	Inkberry	Salt tolerant
<i>Ilex verticillata</i>	Winterberry	
<i>Kalmia latifolia</i>	Mountainlaurel	Evergreen
<i>Myrica pensylvanica</i>	Bayberry	Salt tolerant
<i>Festuca amethystina</i>	Large Blue Fescue	
<i>Gaultheria procumbens</i>	Checkerberry	
<i>Geranium sanguineum</i>	Blood-red Cranesbill	
<i>Helictotrichon sempervirens</i>	Blue Oat Grass	Salt tolerant
<i>Kalmia latifolia</i>	Mountainlaurel	
<i>Koeleria glauca</i>	Blue Hair Grass	
<i>Panicum virgatum</i>	Switch Grass	Salt tolerant
<i>Pennisetum alopecuroides</i>	Fountain Grass	Salt tolerant
<i>Phalaris arundinacea picta</i>	Ribbon Grass	
<i>Phlox subulata</i>	Moss Pink	Salt tolerant
<i>Potentilla fruticosa</i>	Shrubby Cinquefoil	Salt tolerant
<i>Rhododendron maximum</i>	Rosebay Rhododendron	
<i>Rhododendron prinophyllum</i>	Roseshell Azalea	Evergreen
<i>Rhododendron viscosum</i>	Swamp Azalea	Evergreen
<i>Rosa rugosa</i>	Rugosa Rose	
<i>Rosa virginiana</i>	Virginia Rose	
<i>Symphoricarpos alba</i>	Common Snowberry	
<i>Symphoricarpos orbiculatus</i>	Coralberry	
<i>Vaccinium corymbosum</i>	Highbush Blueberry	
<i>Viburnum dentatum</i>	Arrowwood	Salt tolerant
<i>Vaccinium macrocarpon</i>	American Cranberry	
<i>Viburnum prunifolium</i>	Blackhaw	Salt tolerant

Shrub and Groundcovers

Scientific Name	Common Name	Remarks
<i>Bouteloua gracilis</i>	Misquito Grass	
<i>Casmanthium latifolium</i>	Northern Sea Oats	Salt tolerant
<i>Cornus sericea</i>	Red-oiser Dogwood	Salt tolerant
<i>Deschampsia caespitosa</i>	Tufted Hair Grass	Salt tolerant
<i>Festuca amethystina</i>	Large Blue Fescue	
<i>Gaultheria procumbens</i>	Checkerberry	
<i>Geranium sanguineum</i>	Blood-red Cranesbill	
<i>Hamamelis virginiana</i>	Common Witchhazel	
<i>Helictotrichon sempervirens</i>	Blue Oat Grass	Salt tolerant
<i>Kalmia latifolia</i>	Mountainlaurel	
<i>Koeleria glauca</i>	Blue Hair Grass	
<i>Panicum virgatum</i>	Switch Grass	Salt tolerant
<i>Pennisetum alopecuroides</i>	Fountain Grass	Salt tolerant
<i>Phalaris arundinacea picta</i>	Ribbon Grass	
<i>Phlox subulata</i>	Moss Pink	Salt tolerant
<i>Potentilla fruticosa</i> var. <i>arbuscula</i>		Shrubby Cinquefoil
	Salt tolerant	
<i>Rhododendron prinophyllum</i>	Roseshell Azalea	Evergreen
<i>Rhododendron viscosum</i>	Swamp Azalea	Evergreen
<i>Rosa rugosa</i>	Rugosa Rose	
<i>Rosa virginiana</i>	Virginia Rose	
<i>Symphoricarpos alba</i>	Common Snowberry	
<i>Symphoricarpos orbiculatus</i>	Coralberry	
<i>Vaccinium macrocarpon</i>	American Cranberry	

Special Zones

Scientific Name	Common Name	Remarks
<i>Amelanchier arborea</i>	Downy Serviceberry	
<i>Amelanchier canadensis</i>	Shadblow Serviceberry	Salt tolerant
<i>Amelanchier laevis</i>	Allegheny Serviceberry	
<i>Amelanchier polifolia</i>	Bog Rosemary	Evergreen
<i>Arctostaphylos uva-ursi</i>	Bearberry	Salt tolerant
<i>Aronia arbutifolia</i>	Red Chokeberry	
<i>Aronia melanocarpa</i>	Black Chokeberry	
<i>Bergenia cordifolia</i>	Heartleaf Bergenia	Evergreen

<i>Betula populifera</i>	Gray Birch	
<i>Bouteloua gracilis</i>	Misquito Grass	
<i>Cornus sericea</i>	Red-oiser Dogwood	Salt tolerant
<i>Deschampsia caespitosa</i>	Tufted Hair Grass	Salt tolerant
<i>Festuca amethystina</i>	Large Blue Fescue	
<i>Gaultheria procumbens</i>	Checkerberry	
<i>Geranium sanguineum</i>	Blood-red Cranesbill	
<i>Hamamelis virginiana</i>	Common Witchhazel	
<i>Helictotrichon sempervirens</i>	Blue Oat Grass	Salt tolerant
<i>Kalmia latifolia</i>	Mountainlaurel	
<i>Koeleria glauca</i>	Blue Hair Grass	
<i>Panicum virgatum</i>	Switch Grass	Salt tolerant
<i>Pennisetum alopecuroides</i>	Fountain Grass	Salt tolerant
<i>Phalaris arundinacea picta</i>	Ribbon Grass	
<i>Phlox subulata</i>	Moss Pink	Salt tolerant
<i>Potentilla fruticosa</i>	Shrubby Cinquefoil	Salt tolerant
<i>Rhododendron prinophyllum</i>	Roseshell Azalea	Evergreen
<i>Rhododendron viscosum</i>	Swamp Azalea	Evergreen
<i>Rosa rugosa</i>	Rugosa Rose	
<i>Rosa virginiana</i>	Virginia Rose	
<i>Sorbus Americana</i>	American Mountain Ash	
<i>Symphoricarpos alba</i>	Common Snowberry	
<i>Symphoricarpos orbiculatus</i>	Coralberry	
<i>Vaccinium macrocarpon</i>	American Cranberry	

Appendix Section 2 – Exterior Lighting

I. Development and Design Standards

The Institutional Master Plan shall establish development and design standards that shall apply to all development proposals and other improvements within the Institutional Zone. These development and design standards will apply to individual projects that are submitted for site plan review. These standards shall foster the development of a visually and architecturally integrated campus that is safe, environmentally sensitive, and that minimizes the adverse impact of the campus on neighboring residential areas. At a minimum, these development and design standards shall address the following areas:

2. *Exterior Lighting - The standards shall establish a general lighting theme for the campus and shall identify the appropriate maximum, average, or minimum illumination levels and uniformity ratios for various areas and facilities, the typical type of lighting fixtures and poles that will be used, and shall detail how nighttime sky glow and light intrusion on neighboring residential areas will be minimized.*

Exterior Lighting – General Site

The purpose of this document is to provide recommendations for exterior lighting master plan standards in the Biddeford **IN Zone**. Included are lighting standards for parking lots, roadways, walkways, and landscape accent areas.

References are made in this document to lighting standards published by the *Illuminating Engineering Society of North America (IESNA)*.

- The Lighting Handbook, 9th Edition
- RP-33-99 Lighting for Exterior Environments
- RP-6-01 Sports and Recreational Area Lighting
- RP-8-00 Roadway Lighting
- DG-5-94 Recommended Lighting for Walkways and Class 1 Bikeways
- RP-33-99 Lighting for Exterior Environments
- RP-6-01 Sports and Recreational Area Lighting

Lighting Fixture Distribution Classifications

The primary components of a light fixture that determine its performance are the lamp, reflector/refractor system, and ballast. The *IESNA* classifies exterior lighting fixtures by their performance characteristics relating to optical control: full cutoff, cutoff, semicutoff and noncutoff:

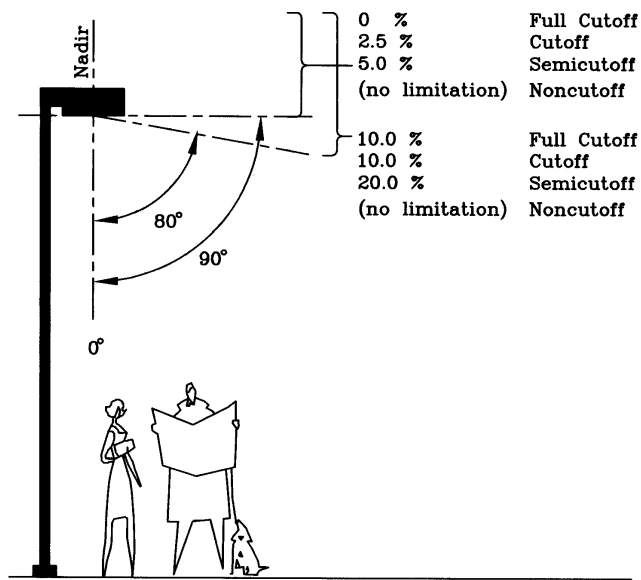


Fig. 1 IESNA Luminaire Cutoff Classifications

Full Cutoff

A luminaire light distribution where zero candela intensity occurs at an angle of 90° above nadir, and at all greater angles from nadir. Additionally, the candela per 1000 lamp lumens does not numerically exceed 100 (10 percent) at a vertical angle of 80° above nadir. This applies to all lateral angles around the luminaire.

Cutoff

A luminaire light distribution where the candela per 1000 lamp lumens does not numerically exceed 25 (2 1/2 percent) at a vertical angle of 90° above nadir and 100 (10 percent) at a vertical angle of 80° above nadir. This applies to all lateral angles around the luminaire.

Semicutoff

A luminaire light distribution where the candela per 1000 lamp lumens does not numerically exceed 50 (5 percent) at a vertical angle of 90° above nadir and 200 (20 percent) at a vertical angle of 80° above nadir. This applies to all lateral angles around the luminaire.

Noncutoff

A luminaire light distribution where there is no candela limitation in the zone above maximum candela.

Exterior Lighting Performance Standards

Roadways

Exterior illuminance levels for roadways in the **IN Zone** should conform to the following criteria listed in **Table 1**. For the **IN Zone**, there are two roadway use classifications that apply: *Collector* and *Local*. In each case, the classification for pedestrian/vehicle conflict would be a *High* rating.

Collector Roadway: Roadways servicing traffic between major and local streets. These are streets used mainly for traffic movements within residential, commercial and industrial areas. They do not handle long, through trips. Collector streets may be used for truck or bus movements and give direct service to abutting properties.

Local Roadway: Local streets are used primarily for direct access to residential, commercial, industrial, or other abutting property. They make up a large percentage of the total street system, but carry a small proportion of vehicular traffic.

High Pedestrian Conflict Areas: Areas with significant numbers of pedestrians expected to be on the sidewalks or crossing the streets during darkness. Examples are downtown retail areas, near theaters, concert halls, stadiums, and transit terminals.

IESNA RP-8-00 Roadway Lighting

**MAINTAINED ILLUMINANCE
VALUES FOR ROADWAYS IN FOOTCANDLES
TABLE 1**

	<i><u>Pedestrian Conflict Area</u></i>	<i><u>Ave. Illuminance (Footcandles)</u></i>	<i><u>Illuminance Uniformity Ratio (Average-to-Minimum)</u></i>
Collector	High	1.2	4.0 to 1
Local	High	0.8	6.0 to 1

Parking Areas

Exterior illuminance levels for outdoor parking lots in the **IN Zone** should conform to the following criteria listed in **Table 2**.

**MAINTAINED ILLUMINANCE
VALUES FOR OPEN PARKING LOTS
TABLE 2**

	<i>Basic</i>	<i>Enhanced Security¹</i>
Minimum Horizontal Illuminance	0.2 footcandles ²	0.5 footcandles ²
Maximum Horizontal Illuminance	7.5 footcandles ²	10.0 footcandles ²
Average Horizontal Illuminance	1.5 – 2.0 footcandles	2.0 – 2.5 footcandles
Uniformity Ratio, Maximum to Minimum	20:1	15:1

¹ If personal security or vandalism is a likely and/or severe problem, an increase of the basic level may be appropriate.

² Measured on the parking surface, without any shadowing effect from parked vehicles or trees at points of measurement.

Walkways and Bikeways

Exterior illuminance levels for outdoor walkways and bikeways that are remote from streets in the **IN Zone** should conform to the following criteria listed in **Table 3**. The recommendations are based on classification of walkway locations. For the **IN Zone**, the walkway use classifications that best applies, is that of *Intermediate*.

Intermediate Walkway: Those areas of a municipality often characterized by moderately heavy nighttime pedestrian activity such as in blocks having libraries, community recreation centers, large apartment buildings, industrial buildings, or neighborhood retail stores.

**MAINTAINED ILLUMINANCE
VALUES FOR WALKWAYS
TABLE 3**

	<i>Average Horizontal (footcandles)¹</i>	<i>Average Hor. Uniformity (Ave.-to-Min.)</i>	<i>Average Vertical (footcandles)²</i>	<i>Average Vert. Uniformity (Ave.-to-Min.)</i>
Intermediate (Average Conditions)	0.5	4:1		
Intermediate (Special Conditions)			1.0	5:1

¹ Values measured or calculated at ground level.

² Values measured or calculated at 5 feet above pavement, in both directions, parallel to the direction of travel on the walkway.

Exterior Lighting Control Standards

Light Trespass

Exterior lighting in the **IN Zone** should be selected and arranged such that not more than 0.1 footcandles are allowed to extend beyond property lines.

Glare Control

Exterior lighting fixtures shall include proper shielding and aiming such that excessive brightness is not seen from neighboring properties or along adjacent roadways.

Light Pollution

Exterior lighting fixtures used for the lighting of parking lots, walkways, and roadways shall not direct light at angles higher than 90 degrees above the horizontal. Directional accent lighting fixtures for accent of landscaping, signage and buildings shall include shielding as required to prevent light from being directed beyond the surfaces intended to be lighted.

Exterior Lighting Equipment Selection Standards

For the purposes of establishing a sense of visual consistency, and to assure that glare and fixture brightness are properly controlled, the following lighting equipment standards in **Table 4** should be followed.

EXTERIOR LIGHTING EQUIPMENT REQUIREMENTS TABLE 4

Roadways

<u>Luminaires:</u>	<i>IESNA</i> full cutoff distribution classification with flush, flat lenses.
<u>Lamps:</u>	Metal Halide, 250 to 400 watt, or the equivalent in LED.
<u>Controls:</u>	Integral photocell.
<u>Lighting Poles:</u>	Pole heights between 12 and 20 feet.

Parking Areas

<u>Luminaires:</u>	<i>IESNA</i> full cutoff distribution classification with flush, flat lenses.
<u>Lamps:</u>	Metal Halide, 250 to 400 watt, or the equivalent in LED.
<u>Controls:</u>	Integral photocell.
<u>Lighting Poles:</u>	Pole heights between 16 and 24 feet.

Walkways

<u>Luminaires:</u>	<i>IESNA</i> full cutoff distribution classification with flush, flat lenses.
<u>Lamps:</u>	Metal Halide, 100 to 250 watt, or the equivalent in LED.
<u>Controls:</u>	Integral photocell.
<u>Lighting Poles:</u>	Pole heights between 10 and 12 feet.

Building Entryways

<u>Luminaires:</u>	<i>IESNA</i> full cutoff, cutoff, or semi-cutoff distribution classification.
<u>Lamps:</u>	Metal Halide, 35 to 150 watt. Compact fluorescent 13 to 42 watts, or the equivalent in LED.
<u>Controls:</u>	Integral photocell and/or local switching.
<u>Mounting Heights:</u>	Between 10 and 16 feet

Building Entry Plazas

<u>Luminaires:</u>	36 inch high bollard lights with louver shields.
<u>Lamps:</u>	Metal halide 35 to 150 watts, or the equivalent in LED.
<u>Controls:</u>	Local switching.

Building and Landscape Accent Lighting

<u>Luminaires:</u>	Ground mounted floodlights with front face louvers or top/side shields.
<u>Lamps:</u>	Metal halide 35 to 150 watts, or the equivalent in LED.
<u>Controls:</u>	Integral photocell.

Exterior Lighting – Athletic Field Lighting

Class of Play

The *Illuminating Engineering Society of North America (IESNA)* publishes recommendations for sports lighting applications. Included in the *IESNA* publication *RP-6* is information pertaining to general outdoor sports lighting practices as well as specific suggestions for equipment layout and illuminance levels. Illuminance recommendations are organized in terms of need given the sport being lighted and the anticipated class of play. The *IESNA* has identified four general classes for consideration:

- Class I For competition play before a large group of spectators (over 5000). Included in this classification are facilities for professional, college, semi-professional and sports club levels of play.
- Class II For competition play with less than 5000 spectators. Included in this classification are facilities for college, semi-professional, sports club, amateur league, and high school levels of play.
- Class III For competition play with some provisions for spectators. Included in this classification are facilities for sports club, high school, and training facilities levels of play.
- Class IV Facilities with no provisions for spectators. Included in this classification are facilities for amateur leagues, high schools, training facilities, elementary schools, recreational events, and social events level of play.

Each of these classes requires different levels of illumination given the corresponding purpose of play, skill levels of players, and spectator/broadcasting needs.

Soccer Field Lighting

Soccer is considered a multi-directional aerial sport since it involves the playing of a ball in the air as well as on the ground. Accordingly, it is important that soccer field lighting provide both adequate levels of horizontal illuminance to light the playing field, as well as vertical illuminance to light the ball in flight. The degree to which a lighting solution can provide both high levels of horizontal and vertical illuminance is largely dependant upon the location of luminaires with respect to the playing field. Luminaires that are mounted on tall poles aimed in a sharp downward direction can easily provide high levels of horizontal illuminance at the field below. Lighting the sides of a ball in flight, however, is made difficult when a vast majority of the light is delivered from overhead at great mounting heights. Vertical illuminance is more easily achieved from luminaires that are located at lower mounting heights, allowing for light to be directed from the sides. A successful athletic field lighting solution is one that achieves a balance between horizontal and vertical illuminance needs. Lighting pole heights and setback locations play a critical role in achieving this balance. As a design guide, the relationship of the pole height to the pole setback dimension from the soccer field should be as follows: pole height = (setback dimension plus 1/3 the width of the playing field) times the tangent of 30 degrees.

$$PH = (SB + 1/3W)(\tan 30^\circ)$$

As the setback dimension increases, so too does the pole height. At sites where there is a limitation of space available for pole setback, the pole heights become shorter. Ideally, the setback distance should not be less than about fifteen feet. This would result in a pole height of about fifty feet for the average size soccer field. Poles that are less than 50 feet in height significantly increase the chance for unacceptable glare seen from areas that are adjacent to the field due to the resulting high aiming angles of the sports lights.

Softball Field Lighting

Softball is also considered a multi-directional aerial sport since it involves the playing of a ball in the air as well as on the ground. Like soccer, it is important that softball field lighting provide both adequate levels of horizontal illuminance to light the playing field, as well as vertical illuminance to light the ball in flight. Lighting poles are generally located parallel to the base lines to light the infield, and along the outfield fence to light the outfield. Pole heights must be selected to not only provide proper coverage of the playing field, but also to assure that the top of the lighting beam from floodlights forms an angle with the horizontal of at least 10 degrees.

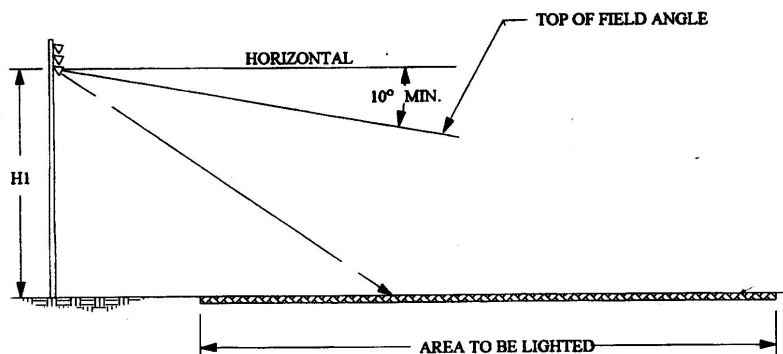


Fig. 1 Softball Floodlight

Athletic Field Lighting Performance Standards

Illuminance Standards

Maintained illuminance levels for athletic fields should be as listed in **Table 1** and **Table 2**, below. Illuminance criteria is listed in footcandles, measured at the playing surface.

MAINTAINED ILLUMINANCE VALUES FOR SOCCER FIELDS

TABLE 1

	<i>Max. to Min.</i>
<u>Illuminance</u>	<u>Uniformity</u>
Class I	75 FC 1.7 : 1
Class II	50 FC 2.5 : 1
Class III	30 FC 3 : 1
Class IV	20 FC 4 : 1

MAINTAINED ILLUMINANCE VALUES FOR SOFTBALL FIELDS

TABLE 2

	<i>Max. to Min.</i>	<i>Max. to Min.</i>
<u>Infield</u>	<u>Outfield</u>	
<u>Illuminance</u>	<u>Uniformity</u>	<u>Illuminance</u>
Class I	150 FC 1.3 : 1	100 FC 1.7 : 1
Class II	100 FC 1.5 : 1	70 FC 2 : 1
Class III	50 FC 2 : 1	30 FC 2.5 : 1
Class IV	30 FC 2.5 : 1	20 FC 3 : 1

Athletic Field Lighting Control Standards

Light Trespass

Exterior lighting from athletic fields should be selected and arranged such that not more than 0.1 footcandles is allowed to extend beyond property lines.

Glare Control

Exterior lighting fixtures shall include proper shielding and aiming such that excessive brightness is not seen from neighboring properties or along adjacent roadways.

Light Pollution

Exterior lighting fixtures used for the lighting of athletic fields shall be positioned such that the top of the field angle of the selected luminaires is 10 degrees, or greater.

Appendix Section 3 - Signage

I. Development and Design Standards

The Institutional Master Plan shall establish development and design standards that shall apply to all development proposals and other improvements within the Institutional Zone. These development and design standards will apply to individual projects that are submitted for site plan review. These standards shall foster the development of a visually and architecturally integrated campus that is safe, environmentally sensitive, and that minimizes the adverse impact of the campus on neighboring residential areas. At a minimum, these development and design standards shall address the following areas:

Signage

The standards shall establish a consistent design theme for all campus signs that enhances the visual environment of the campus and shall identify the general design, sizes, and locations for various types of campus signs.

In the IN Zone, the following signs shall be permitted provided that no individual sign shall be larger than thirty-two (32) square feet and that all signs shall be consistent with the design standards set forth in the approved Institutional Master Plan:

- (a) Institution Sign - One (1) sign identifying the institution in the center of the campus or at a key location within the campus. This sign shall be ground mounted, located within a landscape area, or attached to a landscape feature such as a wall, boulder or similar object. An institution sign may be externally lit with a shielded light source.*
- (b) Gateway Signs - One (1) sign identifying the institution located at each principal entrance to the campus from the major road network. Gateway signs shall be ground mounted, located within a landscape area, or attached to a landscape feature such as a wall, boulder or similar object. Gateway signs may be externally lit with a shielded light source.*
- (c) Building and Facility Signs - Each building or facility may be identified by a sign at the principal entrance and at each additional major entrance to the building or facility. Building or facility signs shall be attached to the building or facility or shall be ground mounted or attached to a landscape feature. Building and facility signs may be externally lit with a shielded light source.*
- (d) Directional Signs - Signs providing directions to buildings or facilities may be placed at appropriate locations within the campus in accordance with the sign standards contained in the Institutional Master Plan. Directional signs may be externally lit with a shielded light source.*

- (e) Public Safety and Regulatory Signs - Signs setting forth public safety regulations, parking regulations, or other public informational signs may be placed at appropriate locations within the campus in accordance with the sign standards contained in the Institutional Master Plan. Safety and regulatory signs may be externally lit with a shielded light source.
- (f) Informational Kiosks – Facilities for the posting of temporary notices or campus information such as kiosks and bulletin boards may be placed at appropriate locations within the campus in accordance with the sign standards contained in the Institutional Master Plan. Kiosks and bulletin boards may be externally lit with a shielded light source.
- (g) Temporary Signs and Banners - Temporary signs and banners related to campus events may be placed at appropriate locations within the campus in accordance with the sign standards contained in the Institutional Master Plan provided that such signs and banners do not remain in place for more than ten (10) days.”



UNIVERSITY OF
NEW ENGLAND

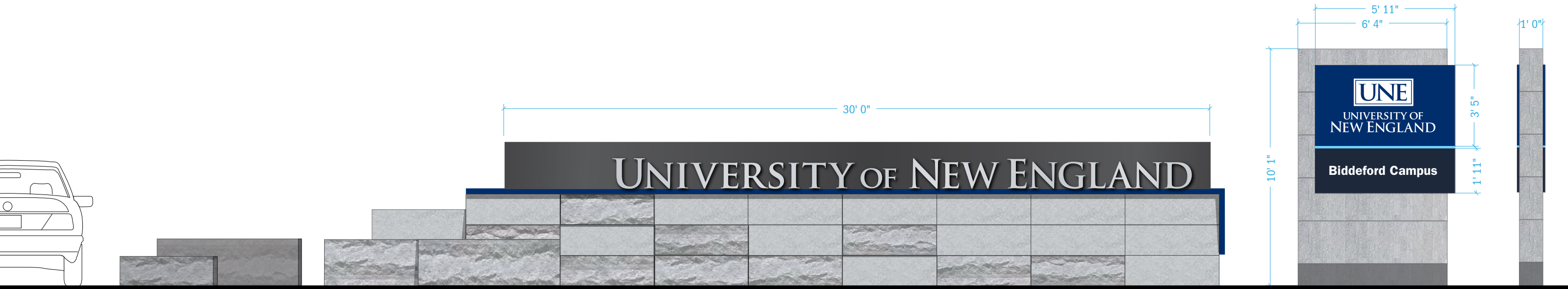
INNOVATION FOR A HEALTHIER PLANET

Biddeford Campus

Signage Standards

January 31, 2023

BIDDEFORD SIGN TYPE LINE-UP

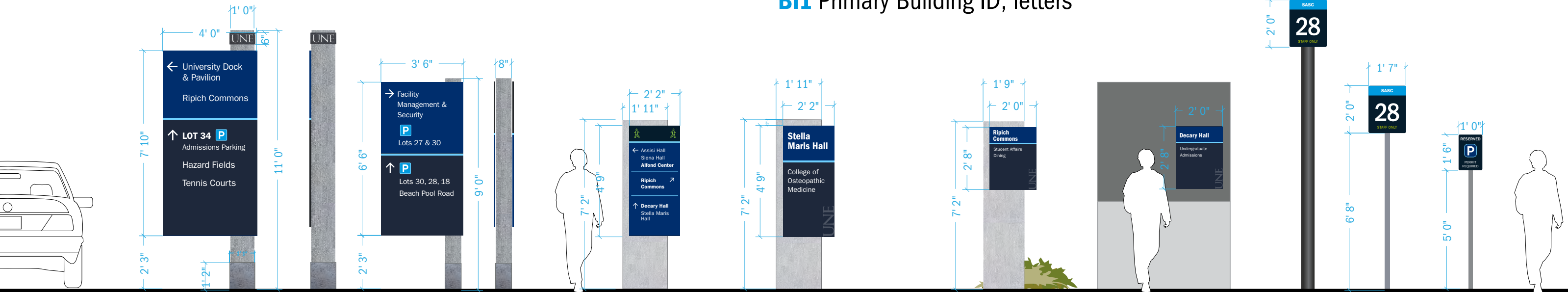


ID1 Primary Campus ID/Entry Sign

ID2 Secondary Campus ID/Entry Sign



BI1 Primary Building ID, letters



scale: 1/4" = 1'-0"

VD1
Primary Vehicular
Directional

VD2
Secondary
Vehicular Directional

PD
Pedestrian
Directional

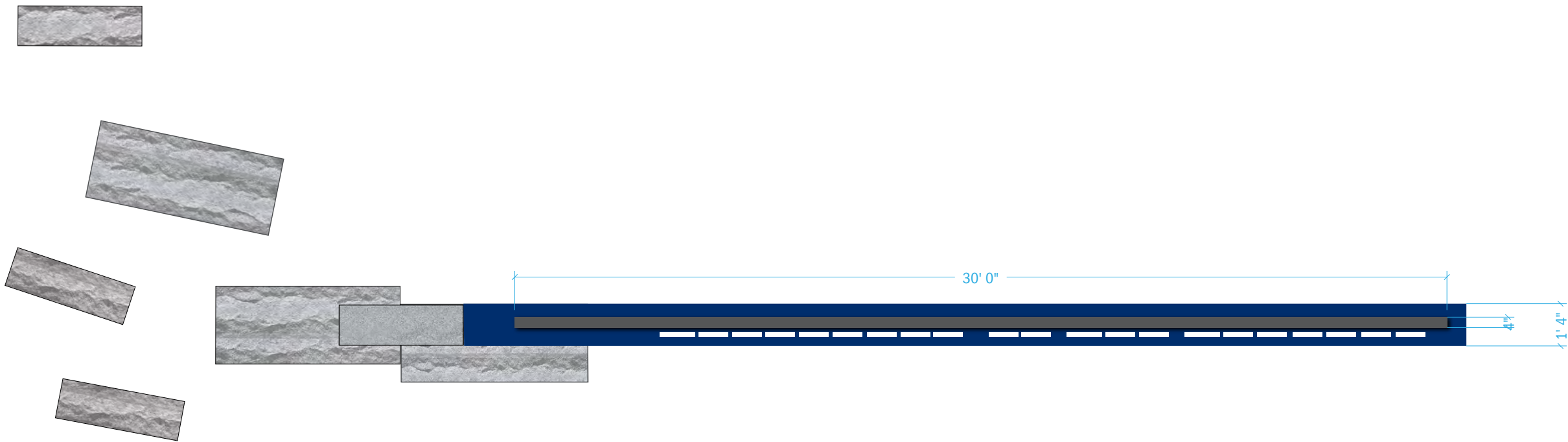
BI2
Primary Building ID,
freestanding

BD1
Building ID/Directory,
freestanding/wall mounted

BD2

PL
Parking Lot/space IDs

PRIMARY CAMPUS ID

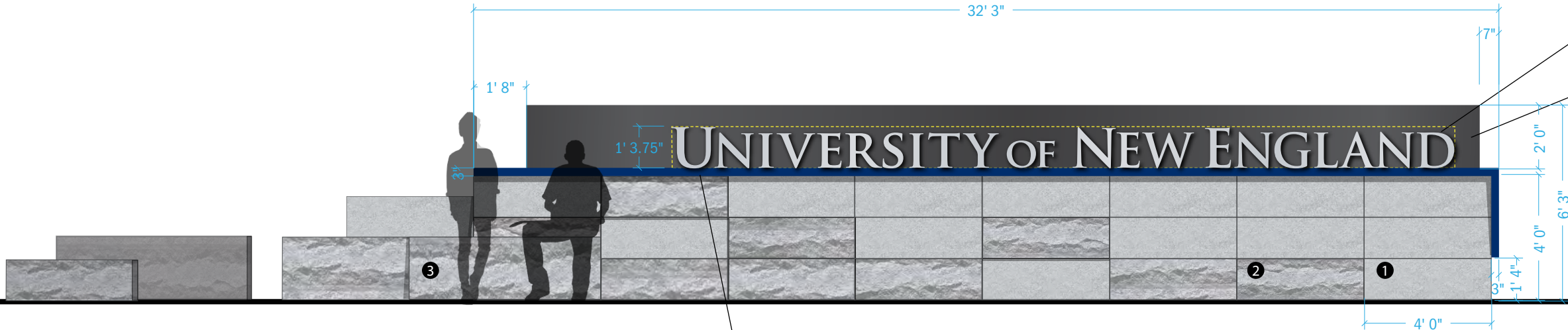


Granite Blocks

- ❶ 4'-0" x 1'-4", depth 1'-4" honed or thermal finish TBD
- ❷ 4'-0" x 1'-4", depth 1'-4" rough/rockface finish
- ❸ 6'-0" x 2'-0", depth 2'-6" rough/rockface finish

- **Base**
Woodbury Gray Granite
- **Behind Logo**
TBD

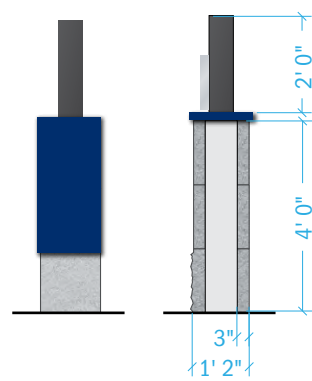
NOTE: granite can be cladding over internal sign cabinet. All seems need to be shown in fabrication drawings front/rear seams as per elevation. Side elevation can show seam edge.



2" Dimensional letters
Light silver

Darker gray granite
or metal background

Illumination (preferred)
Edge-illuminated ledge
Wash-illuminate granite behind letterforms
Ground illumination, per sign code
directed at wall
by others



scale: 1/4" = 1'-0"

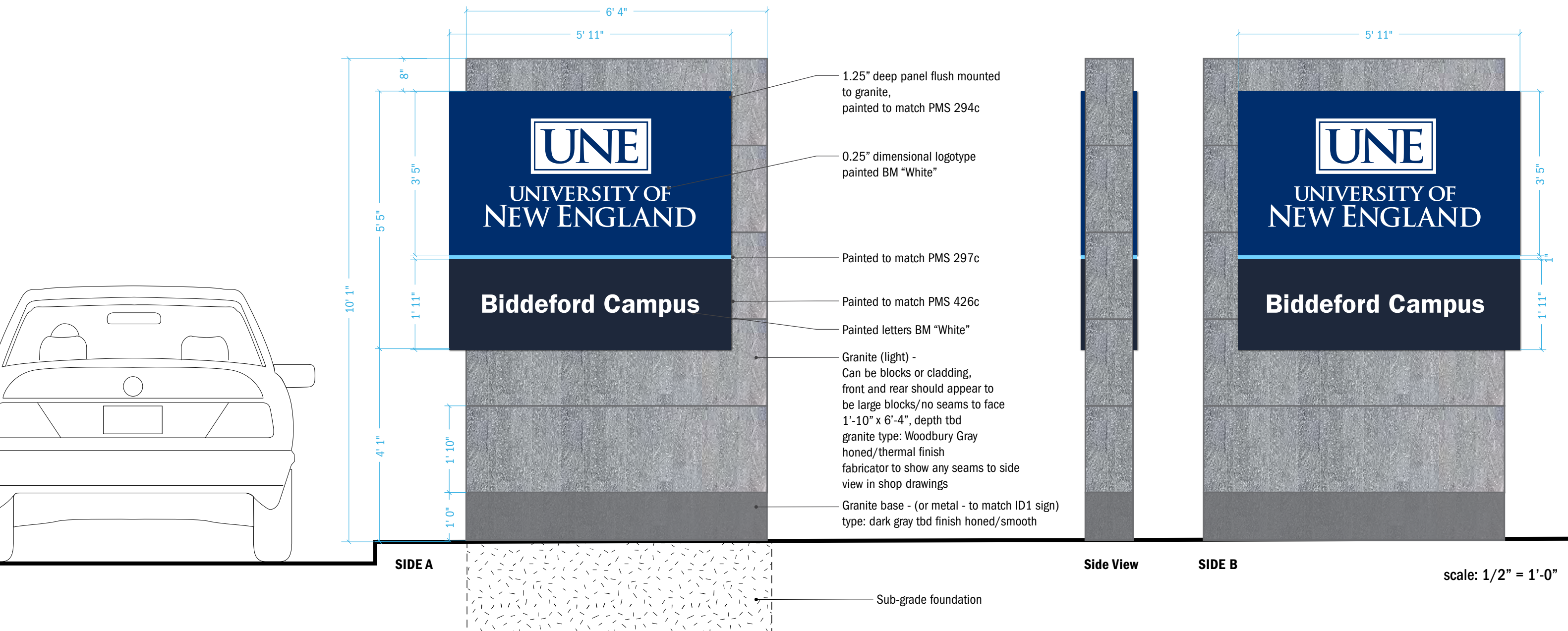
From code:
10. External illumination. In all zones where externally lit signs are allowed the illumination shall be by steady, stationary, shielded light sources directed solely on the sign in such a manner as to not cause glare for motorists, pedestrians, or neighboring premises.

a. Institution sign: one sign identifying the institution in the center of the campus or at a key location within the campus. This sign shall be ground mounted, located within a landscape area, or attached to a landscape feature such as a wall, boulder or similar object. An institution sign may be externally lit with a shielded light source.

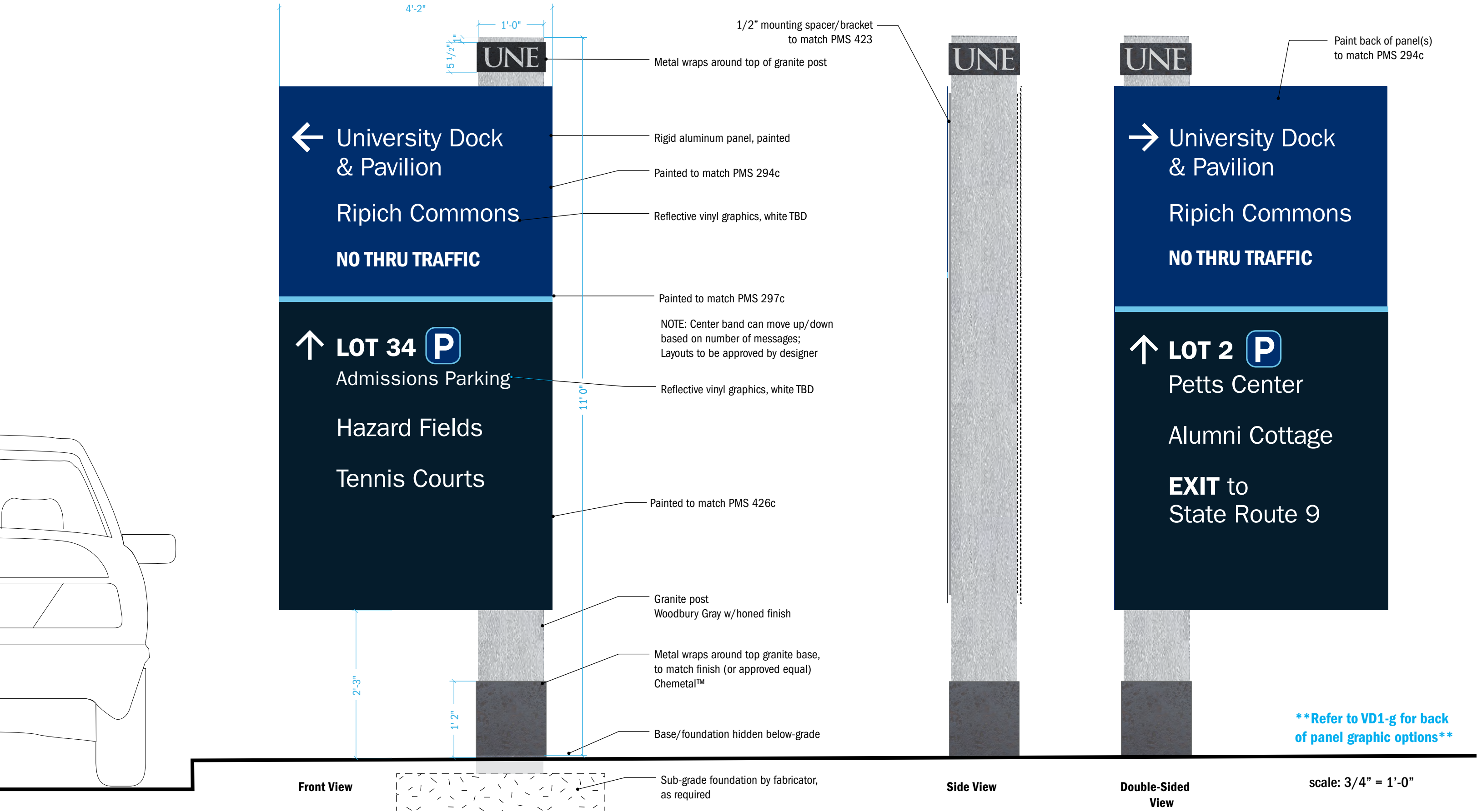
SECONDARY CAMPUS ID



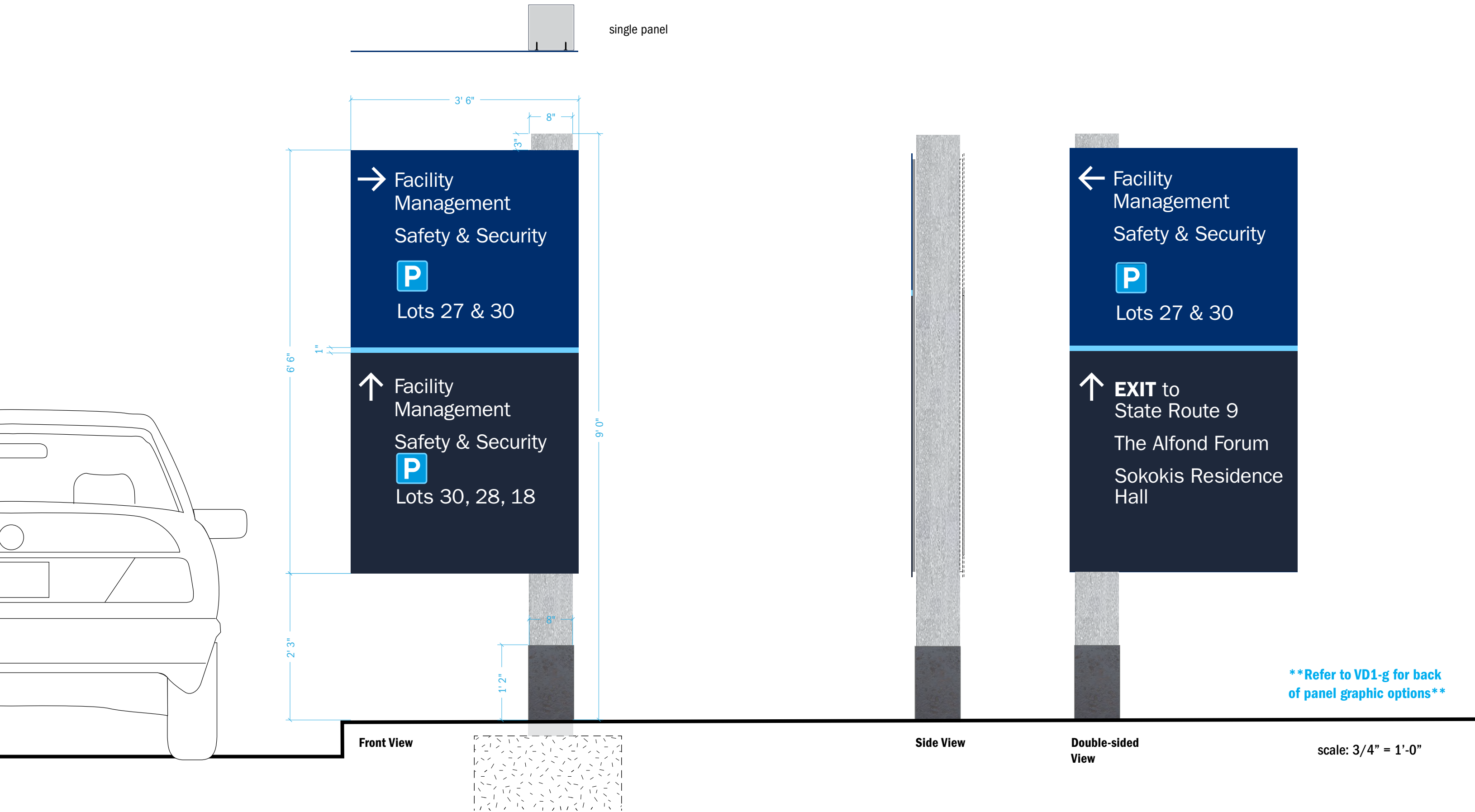
Context Image



PRIMARY VEHICULAR DIRECTIONAL



SECONDARY VEHICULAR DIRECTIONAL



PRIMARY BUILDING IDENTIFICATION

VARIES
DECARY HALL

1" dimensional letters, 5"-10" height letters are custom sized to entrance/placement on building.
Pin mounted to existing building or overlay panel where required.

Material finish to match M6
(dark on light background)

VARIES
DECARY HALL

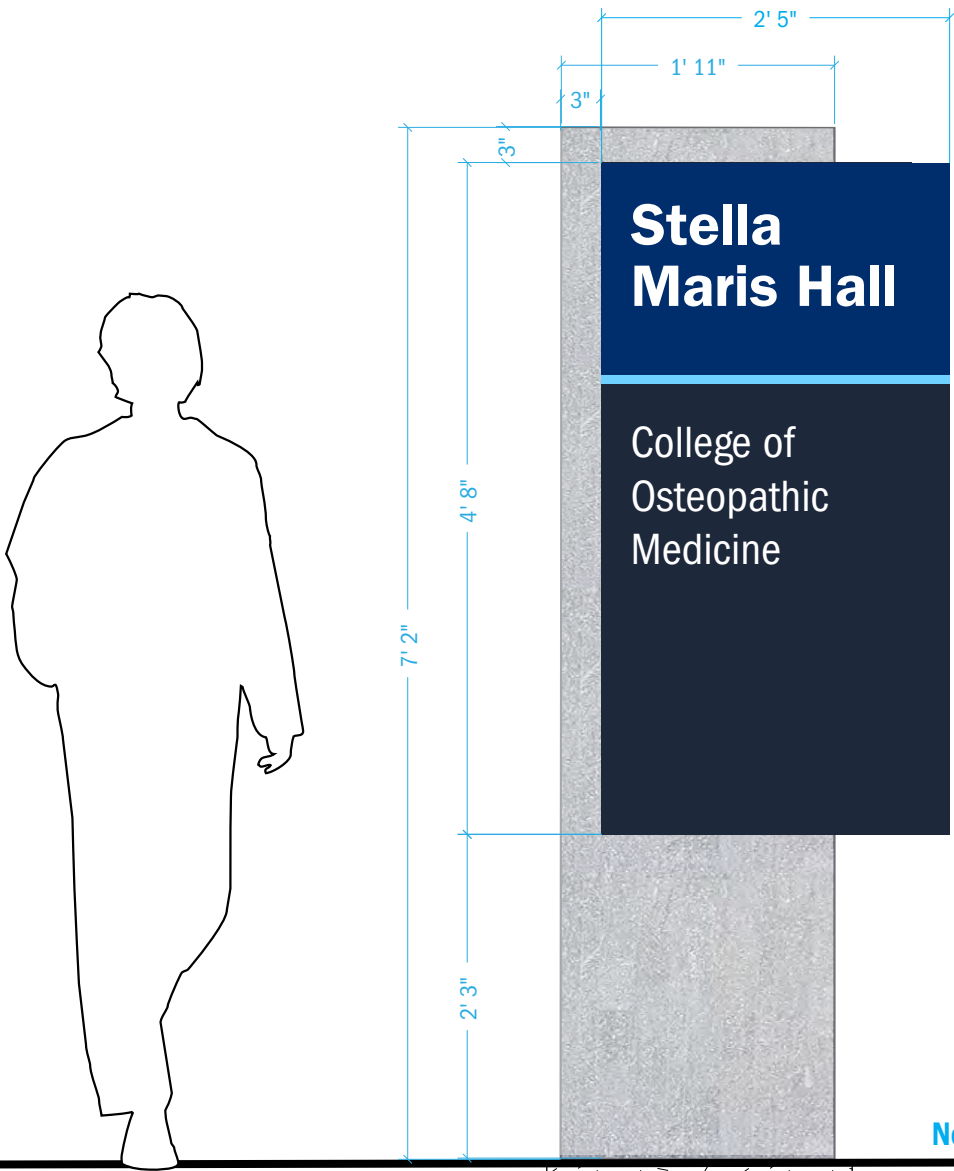
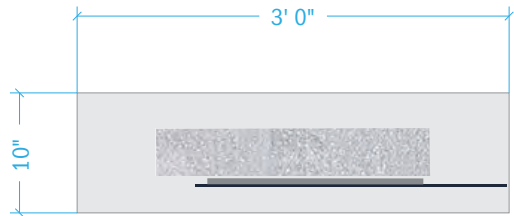
Material finish to match M4
(light on dark background)

ITC Franklin Gothic Std Medium, tracking 150pt

scale: 1/2" = 1'-0"



PRIMARY BUILDING ID - FREESTANDING



Note: Final panel size TBD

SIDE A



Side View

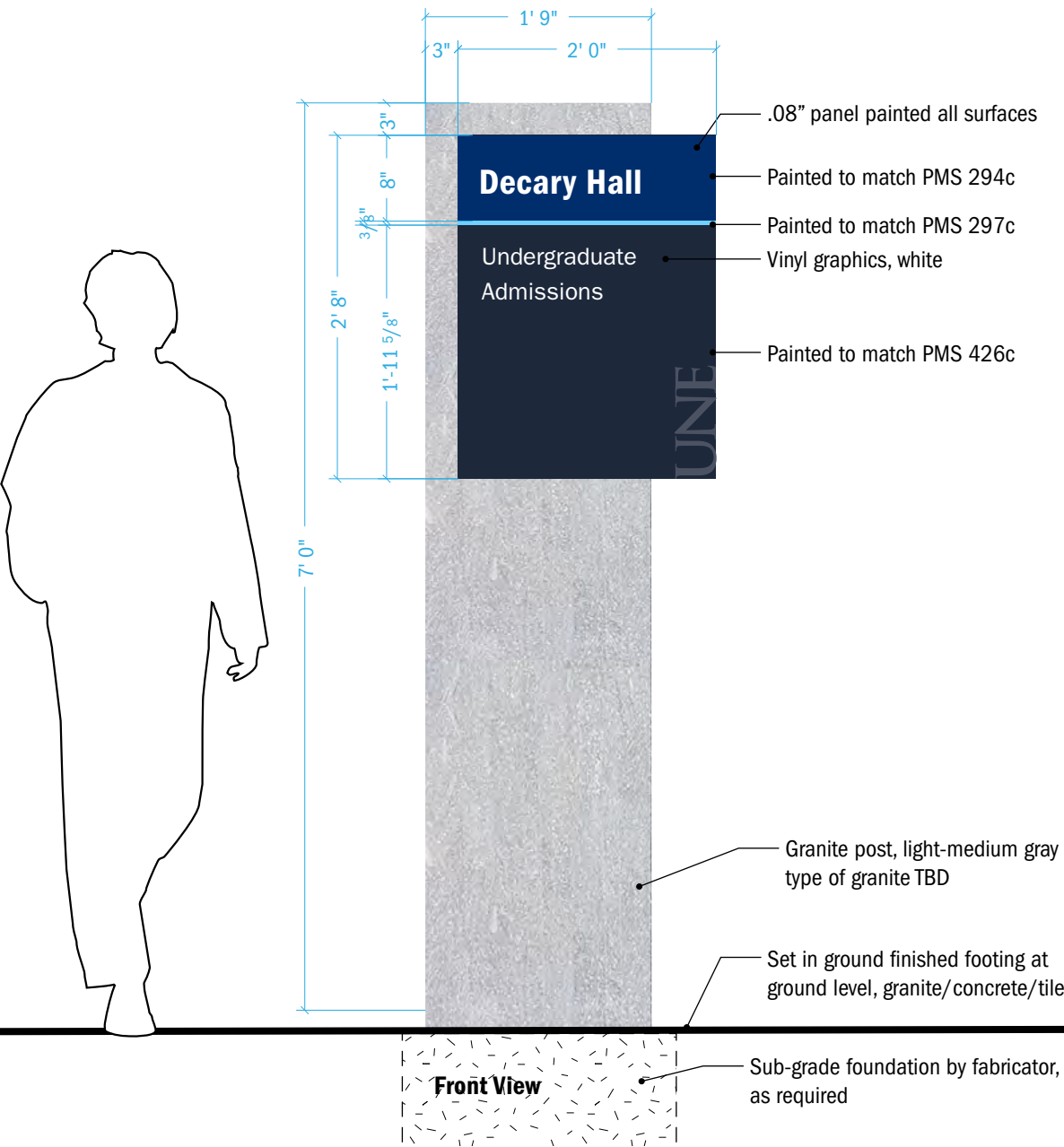
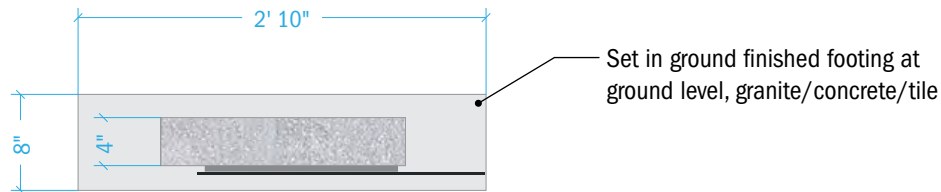


Back View



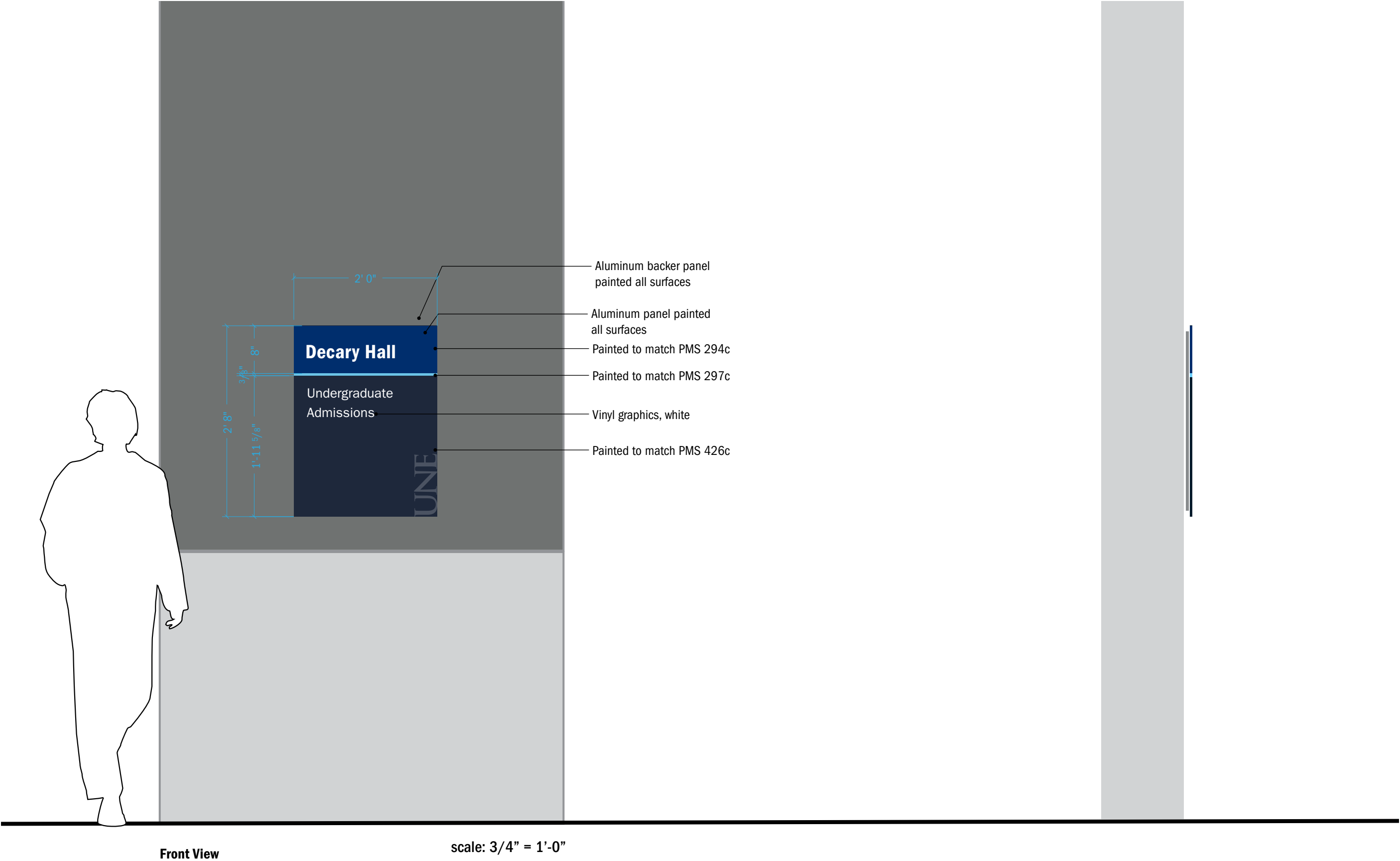
scale: 3/4" = 1'-0"

SECONDARY BUILDING ID/DIRECTORY - FREESTANDING

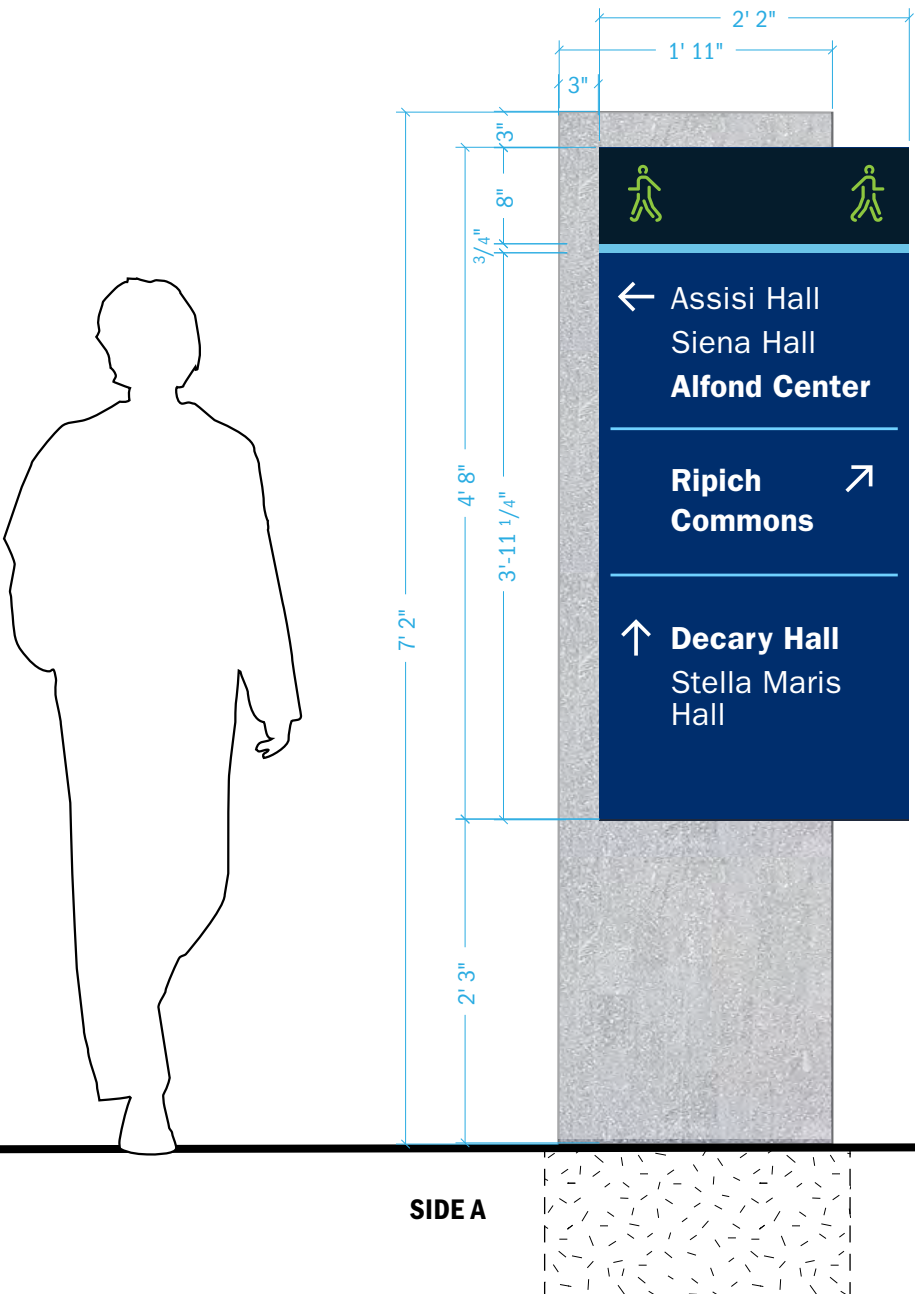
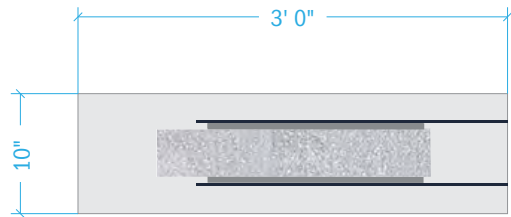


scale: 3/4" = 1'-0"

SECONDARY BUILDING ID/DIRECTORY - WALL MOUNTED



PEDESTRIAN DIRECTIONAL

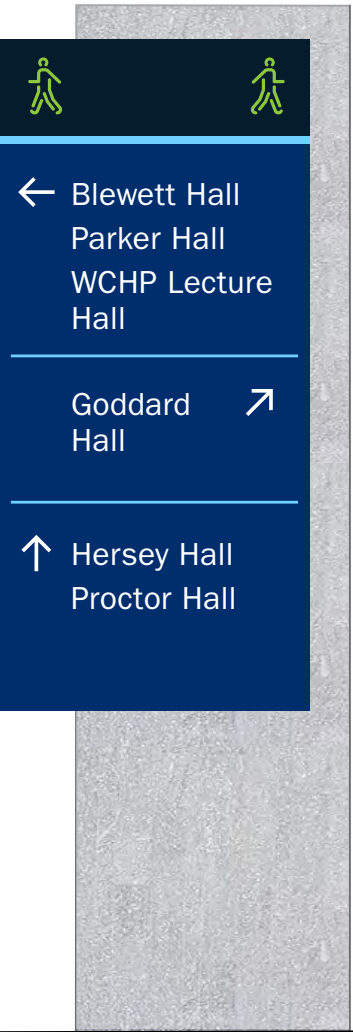


SIDE A

Back of Panel



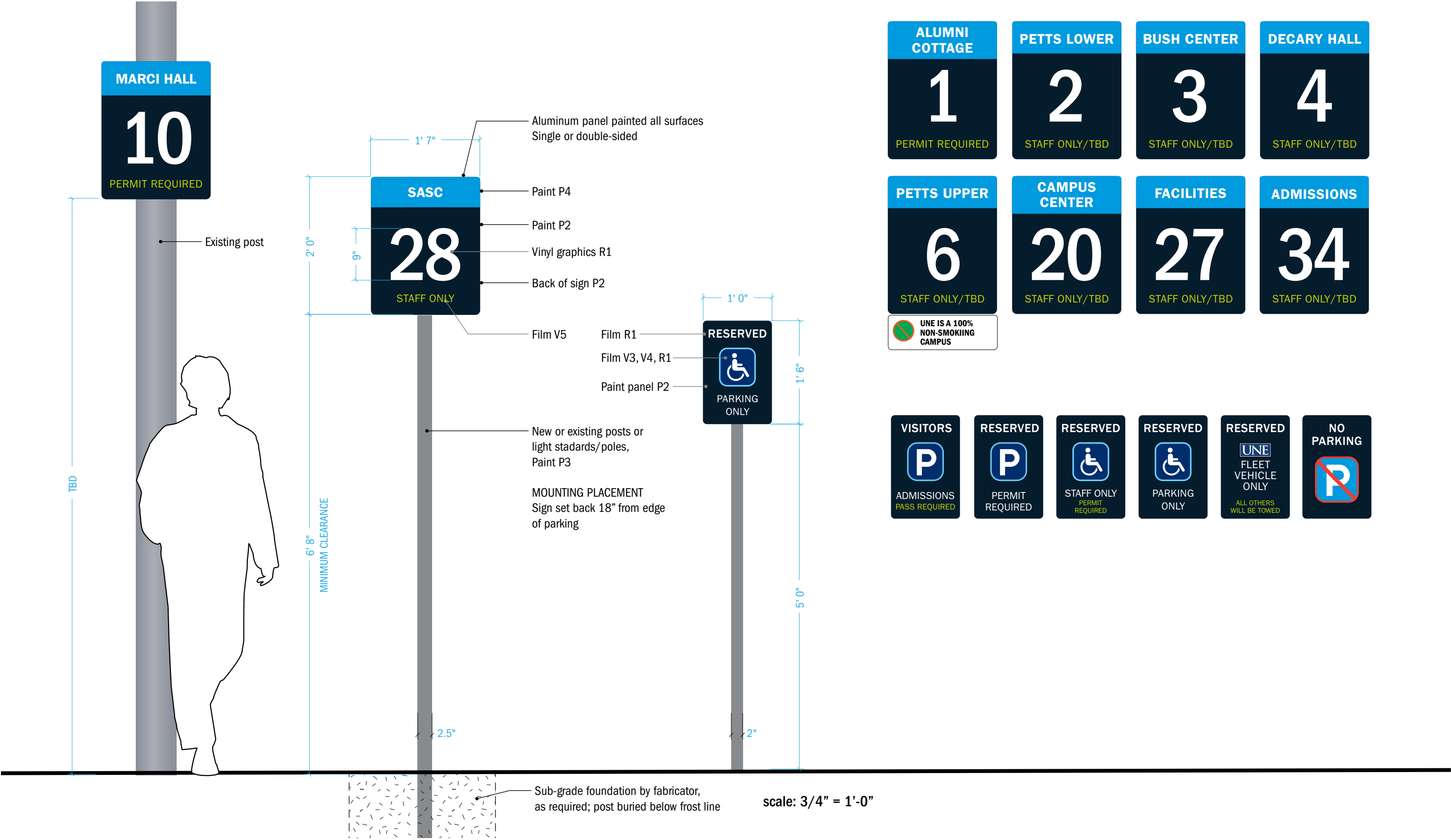
Side View



SIDE B

scale: 3/4" = 1'-0"

PARKING LOT ID



Appendix Section 4 – Pedestrian and Bicycle Facilities

I. Development and Design Standards

The Institutional Master Plan shall establish development and design standards that shall apply to all development proposals and other improvements within the Institutional Zone. These development and design standards will apply to individual projects that are submitted for site plan review. These standards shall foster the development of a visually and architecturally integrated campus that is safe, environmentally sensitive, and that minimizes the adverse impact of the campus on neighboring residential areas. At a minimum, these development and design standards shall address the following areas:

4. Pedestrian and Bicycle Facilities - The standards shall establish an integrated program for accommodating pedestrians and bicyclists safely while promoting a campus environment that is pedestrian focused. The standards shall identify the types, general location, and typical design of various pedestrian and bicycle facilities.

Pedestrian and Bicycle Facilities

The following standards will be used to accommodate pedestrians and cyclist's safety while promoting a campus environment that is pedestrian focused:

The University provides bike racks at or near the main entrance of academic and residential buildings (see specification sheet on the following page). It is expected that pedestrians and cyclists will share common walkways following the normal "rules of the road" thus avoiding the need for specific bike paths or lanes.

The University also offers a Bike Share program for community members without bicycles. This is a cellphone app based program and members can "rent" a bike for free, to use to get across campus or out into the community.

Pedestrians and all campus visitors have access to exterior emergency phones, which are located in strategic locations throughout the campus (see specification sheet on the following page). These emergency call boxes are easily identifiable by the blue lights located adjacent to them. They allow the users to contact the University Safety and Security Staff at any time. The University provides Safety and Security coverage 24 hours a day, and these highly trained Officers respond to all emergency calls.

In addition to the above information, the University has developed specific standards for pedestrian and cyclist safety which have been incorporated into the University's landscaping (see [Appendix A-Section 1](#)), exterior lighting (see [Appendix A-Section 2](#)) and architectural design standards (see [Appendix A-Section 6](#)).

Emergency Call Box



Model 294AL Wall Mount

- One button call for help.
- Housing: Die-Cast Aluminum.
- Polyurethane finish for enhanced durability.
- Sealed metal keypad ideal for access control or similar local calls. Calls can be limited to avoid toll charges.
- Front panel design maximizes useability, simplifies maintenance, and allows customization.
- Microphone and speaker located for optimal performance.
- Large "Palm" activation button standard on all phones.
- Telephone line powered.
- Remote programming.
- Auto answer.
- Auxiliary output activates peripheral equipment.
- ADA Compliance features standard on all models. Features include Braille Help tag and "Call Received" LED.
- Custom colors and silkscreening available.

S.M.A.R.T.

Also available in S.M.A.R.T.
294ALS

See S.M.A.R.T. info located on page 3

Bike Storage Rack



UNE Bike Share Program



Appendix Section 5 - Noise

I. Development and Design Standards

The Institutional Master Plan shall establish development and design standards that shall apply to all development proposals and other improvements within the Institutional Zone. These development and design standards will apply to individual projects that are submitted for site plan review. These standards shall foster the development of a visually and architecturally integrated campus that is safe, environmentally sensitive, and that minimizes the adverse impact of the campus on neighboring residential areas. At a minimum, these development and design standards shall address the following areas:

5. *Noise - The standards shall establish an overall program for minimizing the impact of campus noise on adjacent residential areas. The standards shall identify measures that will be employed to control noise at the source as well as to mitigate the impacts of noise on adjacent property.*

Noise

The MDEP and the City have detailed noise regulations. Because Biddeford has a local noise ordinance that is more restrictive than the MDEP regulations, this Master Plan focuses compliance with the City's standard. The City noise ordinance includes the following requirements:

- Excessive noise between 9:00 pm and 7:00 am shall be muffled so as not to be objectionable due to intermittence, beat frequency, shrillness or volume.
- The maximum permissible sound pressure level of any continuance (continuing), regular or frequent source of sound produced activity regulated by this ordinance shall be as established by the time period and type of land use district listed below. Sound pressure levels shall be measured at the lot lines at a height of at least four feet above the ground.

	7:00 a.m.-10:00 p.m.		10:00 p.m.-7:00 a.m.	
	db(A)	db(C)	db(A)	db(C)
Industrial districts	70	82	60	72
Business districts	60	72	50	62
Other districts	55	67	45	57

- No person shall engage in construction activities on a site abutting any residential use between the hours of 9:00 p.m. and 7:00 a.m., which exceed those limits established for residential districts. Otherwise the following activities shall be exempt from these regulations.

1. Noises created by construction and maintenance activities between 7:00 a.m. and 6:00 p.m.
2. The noises of safety signals, warning devices, and emergency pressure relief valves and any other emergency activities.
3. Traffic noise on existing public roads, and railways.

The City noise standards will be adopted as the University's Noise Standard.

As for minimization of existing noise, see section 8 of this report.

Appendix Section 6 – Architectural Design and Details

I. Development and Design Standards

The Institutional Master Plan shall establish development and design standards that shall apply to all development proposals and other improvements within the Institutional Zone. These development and design standards will apply to individual projects that are submitted for site plan review. These standards shall foster the development of a visually and architecturally integrated campus that is safe, environmentally sensitive, and that minimizes the adverse impact of the campus on neighboring residential areas. At a minimum, these development and design standards shall address the following areas:

6. Architectural Design and Details - The standards shall establish an integrated design theme for campus buildings that is harmonious with existing buildings while promoting a high level of design for new buildings. The standards shall address the scale and massing of buildings, appropriate materials and colors, rooflines, locations of building entrances, architectural detailing, and similar features to create a visually attractive campus while minimizing impacts on surrounding residential areas.

Architectural Design and Details

ARCHITECTURAL DESIGN OVERVIEW

Introduction

An educational institution's quality is reflected in its buildings and campuses. To enrich and to provide architectural continuity to both of the University of New England's campuses in Biddeford and Portland, the following Architectural Design Guidelines have been established. These guidelines will preserve and enhance the image of the University's quality, beauty, consistency and permanence.

The University of New England has developed a Master Plan and guidelines to enhance its campuses and help it fulfill its greatest potential. The Master Plan locates potential future building sites within similar use groupings, allows for a fairly dense development of the campuses while creating / reinforcing outdoor spaces, and creates functional linkages with surrounding facilities. The Architectural Design Guidelines are to be used in conjunction with the Master Plan to help reinforce its ideas and give consistency to each campus in order that one would be able to identify buildings at a glance while still allowing for individual design. The Master Plan and the Architectural Design Guidelines incorporate several concepts to give the University a visual identity through building location, mass and consistent use of materials.

The first important step is to hire a qualified architectural and engineering team that is able to deliver a structure within the budget, meet the desirable parameters identified during programming and adhere to the University's established Architectural Design

Guidelines. In order to facilitate these requirements, it is important that the design team be familiar with the campus on which they are working. The design team will need to preserve and enhance the architectural concepts, which serve as the basis for design while meeting the goals of University's Master Plan.

Accessibility

All new building designs and major renovations need to be in accordance with the American with Disabilities Act. The University is committed to making its spaces accessible to the public.

Quality of Material

The American Society for Testing and Materials (ASTM) is recognized as the industry standard for establishing the performance requirements for various building materials. It is recognized that adherence to ASTM standards for design criteria, material performance and construction made available through the various building trade guidelines, will do much to control quality levels while eliminating untested / unproven materials, products and systems from consideration on future projects. No asbestos material is to be used in any facility.

Energy Efficiency

The focus on energy-efficient design will continue to influence the delivery of new and renovated buildings well into the next century. The University has adopted the Maine Energy Code. Whenever economically feasible, new and renovated buildings will be designed with approaches targeting energy conservation and energy efficiency at the LEED Silver Level of certification.

Sustainability

Whenever possible and economically feasible, the University practices sustainable design follows the criteria set forth by the United States Green Building Council.

Life Cycle Costs

Life Cycle Costing (LCC) is a process used to select the most appropriate and durable material based upon the owner's ability to initially purchase it, evaluate the materials' longevity, and its expected maintenance costs. LCC systems principally address mechanical, electrical and plumbing. Analysis of architectural, civil and structural materials is more of a "judgment" call based upon past performance, life, history and/or environmental factors that change from location to location. The University's life cycle expectations are based on a 50-year building.

Scale and Proportion

The concept of scale and proportion is composed of many separate elements, most notably the personal scale, pedestrian orientation of circulation and frequent placement of open spaces and places to congregate on campus. The perceived proportion of both individual and collective buildings needs to be well balanced, with deliberate designer efforts to avoid architectural competition between neighboring exterior elevations. The Architectural Design Guidelines offer some well-known aids to create and reinforce the concept of human scale on any new building or addition.

Graphics and Signage

The University currently has a comprehensive and consistent interior/exterior signage system on campus. Please see Appendix Section 3. All signs need to comply with ADA Guidelines.

Safety Standards

The safety standards identified in the Architectural Design Guidelines reflect the most recent safety guidelines established for materials and building systems. They also recognize and reference the importance of adhering to building code requirements in the design and construction of campus facilities.

Building Siting and Linkages

The Master Plan identifies potential building sites and maintained open areas. The design team should follow Architectural Design Guidelines to reinforce the University's Master Plan while creating a cohesive campus. Access for emergency and maintenance vehicles, ADA issues, the relationship of new facilities with respect to adjacent facilities and the surrounding natural environment must all be considered and maintained by the individual design teams.

Building sites should carefully maintain the concept of the Master Plan and work to maintain a relationship to existing buildings, as well as, creating systems of pedestrian pathways, which are a part of the University

Temporary Buildings

Temporary buildings are defined as structures that provide program support space in anticipation of the construction of new buildings. Temporary structures should be sited so as to minimize view from public streets, to the extent reasonably practical.

Lightning Protection

A UL Master Label lightning protection system will be installed when practical or whenever economically feasible,

ARCHITECTURAL DESIGN GUIDELINES

The Architectural Design Guidelines (ADG) were developed to address the following requirements and needs of the University of New England. These guidelines are intended to provide general guidance and direction and are not intended to supersede any local, state, or federal codes. It is the architect's responsibility to comply with all applicable codes.

1. Building Siting:

The first consideration in building design is the building siting including locations for entrances. While each building will have a primary entrance(s), all entrances should consider connections with neighboring buildings, the orientation to views and protection from inclement weather. The University requires coordination with its Master Plan and a site matrix analysis for new building sites.

- ☐ **Building Linkages:** New structures should respond to connections to existing buildings and to paths. Ideally, buildings serving the needs of similar departments or colleges should be located in close proximity to one another with paths linking them to reinforce the concept of the pedestrian campus.
- ☐ **Enhance Pedestrian Activity Areas:** Main entrances of new buildings should be oriented toward pedestrian-oriented activity areas including parking areas to facilitate safe and barrier free access.
- ☐ **Out door spaces:** Buildings should reinforce the existing exterior space.
- ☐ **Respect Pedestrian Circulation Routes:** New buildings should be sited to provide convenient connections for pedestrians. As much as possible, buildings should not be located in such a way as to block pedestrian corridors or compromise the ability to provide safe pedestrian corridors.
- ☐ **Orient Buildings to Take Advantage of Views:** Ideally, buildings should be sited to take advantage of views.
- ☐ **Consider Placement of Parking Garages:** Parking garages should not detract from the overall visual quality of the campus. As much as possible, garages should be visually incorporated as part of a

mixed-use facility, or sited to help diminish their visual impact from a public way.

- ☐ **Utility Lines, Connections and Ancillary Equipment:** Utility connections, including electric and tele-communications, should be located underground. Ideally, the location of transformers or meters should not be placed on exterior power poles or hung on the outside of a new building located in highly visible locations. Preferably, transformers, pump stations and other utility structures should be placed at grade and screened from view.
- ☐ **Location of Utilities:** The University requires a site matrix analysis for new building sites that includes the availability and proximity of utilities. Potential structure locations may not be feasible due to their distance from existing utilities.
- ☐ **Service and Material Storage Areas:** Ideally, service and material storage areas should be located at the side or rear of buildings in order to be screened from public view. Consideration for the movement of traffic, access to drives and parking areas should be evaluated.
- ☐ **Loading Docks:** Loading docks, where required, should, if practical, be recessed entirely within the building or appropriately screened.
- ☐ **Existing Trees:** Existing trees and existing tree canopy that have either historical or sentimental importance to the campus should be respected whenever possible.
- ☐ **Topography:** The site selection matrix requires the designer to evaluate the local topography of a site including the presence of ledge. In some cases, it will not be feasible to build on existing topography, while other locations may be suited for taking advantage of topography to enhance the building and allow two different levels of entrance.
- ☐ **Soils and Wetland Constraints:** Soil and Wetland conditions need to be assessed for every building site in order to comply with State and Local regulations. Under the Maine Natural Resources Protection Act there are provisions that permit the mitigation of wetlands by preserving or mitigating other lands.
- ☐ **Site Features:** There are many existing natural and manmade site features including existing open space that should be retained or reinforced by new structures, if possible, without comprising functional sites that are essential to programs.
- ☐ **Snow Removal Areas:** Care needs to be taken with the design to allow for easy snow removal and adequate space must be provided for the containment of excess snow.

2. Materials:

The materials standards are created to help designers choose acceptable materials for any new or renovated building as they relate to adjacent buildings. In its assessment of any materials the design team will consider the durability, maintainability, and uniformity to the adjacent structures.

- ☐ **Color and Texture:** A material's color and texture can affect a person's perception of a building or of a working environment. Care should be used when selecting finishes to aid in the person's interaction with the space. Colors should also be used to denote similar uses and enhance entries and special features.
- ☐ **Detailing:** All new or renovated building exteriors should relate to neighboring buildings in the level of detailing while considering current materials and technologies. Detailing may include brick pilasters, high water lines, dentils, and window trim. The following decorative elements should be incorporated where appropriate: brickwork patterning, coursing, window opening and entry rhythms, as well as medallions and reliefs.
- ☐ **Durability:** Materials exposed to weather, harsh cleaning, and traffic must be given special consideration and need to be detailed carefully. The design team should review the potential for fading or bleaching by UV exposure and salt air, resistance to acid rain, runoff from staining or corrosive materials, contraction/expansion, as well as vehicular, and pedestrian traffic.
- ☐ **Maintenance and Cleaning:** Consideration should be given where possible to the maintenance and cleaning of materials and fixtures incorporated in a design. For example, wall hung toilets and minimal horizontal surfaces make cleaning more efficient for janitorial staff.
- ☐ **Materials should remain honest.** There are many imitations of various materials. The substitution of materials must be disclosed and supported by a cost benefit analysis showing the rationale for a diminution of quality and substance.
- ☐ **Energy Efficiency:** Lighter, more reflective materials can reduce the heat load of the building. Additionally, lighter colored materials can be used in association with light shelves to bring indirect day lighting into the interior of the building, thereby reducing lighting loads.
- ☐ **Lights:** New or renovated buildings should have adequate exterior lighting to insure that entrances and surrounding areas are safe. See campus lighting standards.
- ☐ **Standardized interior materials:** Standardize interior materials with those that are currently used throughout the campus.

3. Massing:

While each building has its own functional program demands, it must also be sensitive to its neighboring context. Massing, fenestration and entries should be used to create interest and shall be sympathetic to adjoining structures. Building mass should be articulated both horizontally and vertically as much as possible. Fenestration and detailing should emphasize human scale and help to define the use and levels of the building.

- ☐ **Massing:** Building mass should have a ‘base’, ‘building’ and ‘top’. The scale of materials usually diminishes as it is used at each of these points. Changes in material, coursing and fenestration help to define various levels of buildings. Cornices, roof forms, parapets, gables and crenellation add interest to building tops by drawing the eye upward.
- ☐ **Proportion:** New projects, in context with existing buildings, should strive to improve the relationship of fenestration, facades, coursing lines and materials. Buildings and other exterior elements should be scaled and proportioned to human dimension to help to impart a sense of comfort and well-being.
- ☐ **Height:** Where heights are much different than the context, care should be taken to match important horizontal building elements as bases, fenestration, cornices and parapet lines. On the University Campus the maximum allowable heights of buildings start at thirty-five feet on the perimeter and get taller towards the center and must meet the conditions of the City of Biddeford’s Institutional Zone. Any future buildings should also take into consideration the scale of adjacent buildings.
- ☐ **Roofs:** Unless justified by a cost analysis, roofs should be sheathed with forty-year asphalt shingles, EPDM, slate or approved metal roofing.
- ☐ **Spaces Characteristics:** The relationships and the character of spaces should begin from the exterior and move to the interior with similar spaces flowing into each other. The exterior of a building should allude to interior spaces by reinforcing building functions on the facades. Most inhabited spaces should have natural light. Windows are preferred but in some cases, skylights can be substituted. As much as possible, formal and shared spaces should have windows that look out on the nicer local features and not at the back of other buildings or parking lots. There should be a hierarchy of spaces that should begin at the entrance and flow down hallways to any space. Formal and informal meeting spaces should be sited in quiet contemplative locations.

- ☐ **Mechanical equipment:** As much a practical or economically feasible, equipment on roofs should be hidden from view from the ground by centering on the roof or hidden by canted parapets or screening as appropriate. Exhaust stacks should be minimized consistent with safety requirements and integrated into the architecture.
- ☐ **Facade Treatment:** Due to the very public nature of most campus buildings, it is important to give the same quality of design effort to all of a project's facades. There should not be a 'rear' elevation per se. New projects should also endeavor to invite the public into the University at all major entrances of the building.
- ☐ **Lighting:** All new exterior lighting should comply with University of New England's Exterior Lighting Standards.
- ☐ **Public Safety:** Public spaces should be designed to facilitate building evacuation and maximize accessibility by fire, police and other emergency personnel and equipment. Consideration needs to be made for emergency equipment such as emergency phones.
- ☐ **Security:** All design concepts should be directed to keeping people easily observable. To do this, any structure or feature should not limit visibility of people, parking areas and building entrances, doors and windows should look out on to paths and parking areas; pedestrian-friendly sidewalks and streets; the provision for emergency call boxes; and finally, all these spaces require adequate nighttime lighting.
- ☐ **Sight Distance:** New construction should not be located in areas that will obstruct sight distance clear zones essential for safe vehicular and pedestrian movement. Landscaping and entrance signage should be setback and kept clear of these zones especially at intersections.

4. Sustainable Design:

Whenever possible and economically feasible, the University practices Sustainable Design by Reduce Reuse Recycle. The design team should consider: energy efficiency, the removal and replacement of trees, and the use of materials that conserve natural resources during their production and usage. The guidelines also encourage the incorporation of the building siting with respect to the orientation to the sun, wind and the coast to minimize energy use. The University, where possible, follows the criteria set forth by the United States Green Building Council (USGBC).

- ☐ **Sustainable Materials:** Materials should be chosen for their value in energy cost savings and renewable ability.

- ☐ Orientation: Building orientation, when it can, should be done in such a way as to make the most out of the site in order to gain solar benefits while also considering other issues such as building and pathway relationships etc.
- ☐ Building Envelope: A tight building envelope allows for increased energy efficiency and thereby decreases the impact on the environment.
- ☐ Proper Insulation: Maintain a standard set of R-values to prevent energy loss and meet Maine energy codes.
- ☐ Recycle Materials: Whenever possible or economically feasible, existing materials should be recycled or reused within the renovation.

5. External circulation:

Internal circulation needs to be coordinated with external access and egress points in order that main entrances to buildings relate to the campus Master Plan.

- ☐ Vehicular Circulation and Access: When possible coordinate vehicular access points to individual building sites with existing or proposed median breaks and/or curb cuts on the opposite side of the roadway. Shared access drives between adjacent sites are encouraged.
- ☐ Drop-Off Zones and Parking: Drop-off zone and parking should be located near main entrances.
- ☐ Parking: Parking areas should be arranged in a logical, efficient manner to minimize the land area dedicated to parking.
- ☐ Curbs and Pavement: All driveways, surface parking and other vehicular use areas should be paved in asphalt concrete in conformance with the University's Construction Standards. Care should be given in the design and layout of curbs to facilitate snow removal.
- ☐ Dimensions and Striping: Parking lot dimensions will meet local code.
- ☐ Handicap Parking: All parking lots must conform to federal handicapped accessibility requirements (ADA) Standards. Slopes in the handicap spaces should be 2% maximum in all directions. All handicap spaces must have adequate signage. Handicap spaces should be located near accessible entrances in renovated buildings and the main entrance on new structures.

- ☐ **Parking Structures:** The development of parking structures may be necessary as part of campus growth and should be carefully assessed as to impact, land ordinances and safety. Where proposed, special attention should be given to the exterior design and scale of the structure so that it is compatible with the surrounding context area. Screening at the perimeter of the structure should be provided for buffering and minimization of the visual impact on the landscape.
- ☐ **Outdoor Uses:** Outdoor spaces include intercollegiate sports, intramural sports, picnic areas, etc. Such areas should be located in areas relatively free of conflicting activities such as deliveries, service areas, major access routes and vehicular use areas.
- ☐ **Outdoor Spaces:** Building designs should strive to include a variety of open spaces and activities ranging from small intimate courtyards for contemplative study to open lawn areas for informal recreation and outdoor classes. Where applicable, provision should be made during the programming and conceptual design of new facilities to provide opportunities for outdoor use of open space as part of the site and for integration within the larger open space/conservation network.
- ☐ **Natural features:** A variety of natural features ranging from conservation areas, passive open space and vegetative areas should be retained as much as practicable on any future development site. Federal and State law currently protects many such areas and encroachment is highly regulated. In the case of jurisdictional wetlands and the Saco River, a setback buffer area is required around these areas. Site criteria for proposed new construction should provide early assessments to minimize potential impact and unnecessary work.

7. **Buffering:**

Various methods of separation may be used to foster compatibility between differing land and building uses within the campus as well as on the perimeter to form separation from the neighbors.

- ☐ **Visual Separation:** Maintain visual separation from neighbors and roadways by means of landscaping and topography.
- ☐ **Tree Removal:** Existing trees and existing tree canopy that have either historical or sentimental importance to the campuses should be respected whenever possible. For more information about which trees need to be preserved, see facilities management. Tree removal must be disclosed as part of any site evaluation process.

- ☐ Physical Separation: Maintain physical separation, where possible, between non-compatible buildings or areas.
- ☐ Screening of Service and Utility Areas and Waste Containers: Service areas and waste container locations should be located out of public view and in an inconspicuous but accessible location.

Architectural Design and Details

EXISTING CHARACTER/REQUIRED CHARACTER

The Architectural Design Guidelines for the color and texture of new and renovated / expanded facilities have been established to provide continuity between the new and existing facilities. In addition to providing aesthetic harmony in the campus' appearance, this approach allows more cost-efficient maintenance of all University facilities. The recommended guidelines for materials are included within the Architectural Design Guidelines.

Characteristics to strive for:

- ☐ Safe and healthy buildings for the users.
- ☐ Comfortable building for the users.
- ☐ Durable buildings both in details and materials.
- ☐ Ease in maintaining buildings and facilities.
- ☐ Resource efficient including energy, water, materials and capital.
- ☐ Adaptable use (includes chases from the lowest floor to the highest floor and adequate ceiling space for future electrical or mechanical upgrades).
- ☐ User friendly spaces / buildings from faculty, staff and students
- ☐ Buildings should support the academic and ancillary functions that dwell within and allude to such functions on the exterior.
- ☐ Natural lighting at all occupied spaces.
- ☐ Produce buildings that people love and they will take care of them.
- ☐ Meet ADA guidelines.
- ☐ Use ASTM approved materials.
- ☐ Provide safe and friendly outdoor space.
- ☐ Foster the living/learning committee approach throughout the campus to encourage interaction between residential and commuting students, faculty, and staff.

Existing Character – University Campus

The current campus is a mix of building types and materials. Not all current buildings on campus are in keeping with the intentions of the Master Plan buildings and they do not provide as timeless a look or have historical precedent. Many of these building should not be emulated. The character of the main campus can be generalized in the following way:

Site:

- ☐ Major public road through campus.
- ☐ Asphalt paths.
- ☐ Woodland landscape - shaded areas and shade perennials.

Building Characteristics:

- ☐ Brick buildings with lead coated copper accents.
- ☐ Aluminum windows.
- ☐ Flat roofs prevalent.

User:

- ☐ Predominantly residential campus.

Desired Character - University Campus

The following are goals to strive for in order to enrich the existing campus.

Site:

- ☐ Provide spaces within the landscape to promote gathering.
- ☐ The “heart of the campus” needs to be created as illustrated in the Master Plan and then maintained.
- ☐ The paths should be asphalt, masonry, or asphalt with masonry accents with concrete or masonry pads at all doors.
- ☐ Perennial gardens, with seating nodes throughout the campus when practical or economically feasible
- ☐ Exterior benches and seating.

Buildings:

- ☐ Exterior building materials should be compatible/complimentary to adjacent buildings.
- ☐ Shingle, slate, or metal roofing is encouraged.
- ☐ Peaked roofs with gable ends are preferred when appropriate to surrounding buildings and existing adjacent architecture. Provide canopies or snow guards at entrances and near pathways.
- ☐ All equipment should be out of sight or as inconspicuous as possible.

- ☐ When brick is selected as exterior treatment for an addition, Brick should match existing.
- ☐ Coated Copper accents are preferred.
- ☐ Granite, pre-cast concrete, cementitious composite panels, or architectural rubbed concrete should be used at the base of buildings.

Materials:

Major Approved Materials

- EIFS - accents should be at 8'-0" or above.
- Granite, pre-cast concrete, cementitious composite panels, or architectural rubbed concrete,
- Aluminum or fiberglass windows with finish-

Minor Approved Materials

- Lead-coated Copper
- Spandrel glass.
- Concrete with either architectural rubbed surface or coating / split-face CMU in limited quantities and in less prominent places.
- Painted exposed steel

Restricted Materials - Requiring Approval from the University

- Vinyl siding.
- Large quantities of cement block.

Appendix Section 7 – Protection of Scenic Views

I. Development and Design Standards

The Institutional Master Plan shall establish development and design standards that shall apply to all development proposals and other improvements within the Institutional Zone. These development and design standards will apply to individual projects that are submitted for site plan review. These standards shall foster the development of a visually and architecturally integrated campus that is safe, environmentally sensitive, and that minimizes the adverse impact of the campus on neighboring residential areas. At a minimum, these development and design standards shall address the following areas:

7. Protection of Identified Scenic Views - The standards shall establish a standard approach for protecting scenic views within or from the campus that have been formally identified and approved by the City Council.

Protection of Identified Scenic Views

The basic scenic view values are already addressed through a comprehensive array of state, regional and City land use protections. Therefore, this Master Plan process and the guiding framework of the City's Institutional Zone Ordinance, have required careful consideration of scenic view values throughout our Master Plan process.

The University must work within the confines of several laws and regulations that are fully protective of scenic values in fashioning its Master Plan:

State of Maine Site Location of Development Act, 38 MRSA section 484(3) and implementing regulations DEP Regulations Chapter 375(14) (providing that a proposed development may not have an unreasonable adverse effect on the scenic character of the surrounding area).

State of Maine Shoreland Protection Act, 38 MRSA section 435 "Shoreland Areas" and City of Biddeford implementing Shoreland Zoning Ordinance (providing for conservation of shore cover and visual access to inland and coastal waters in shoreland areas within 250 feet of the Saco River).

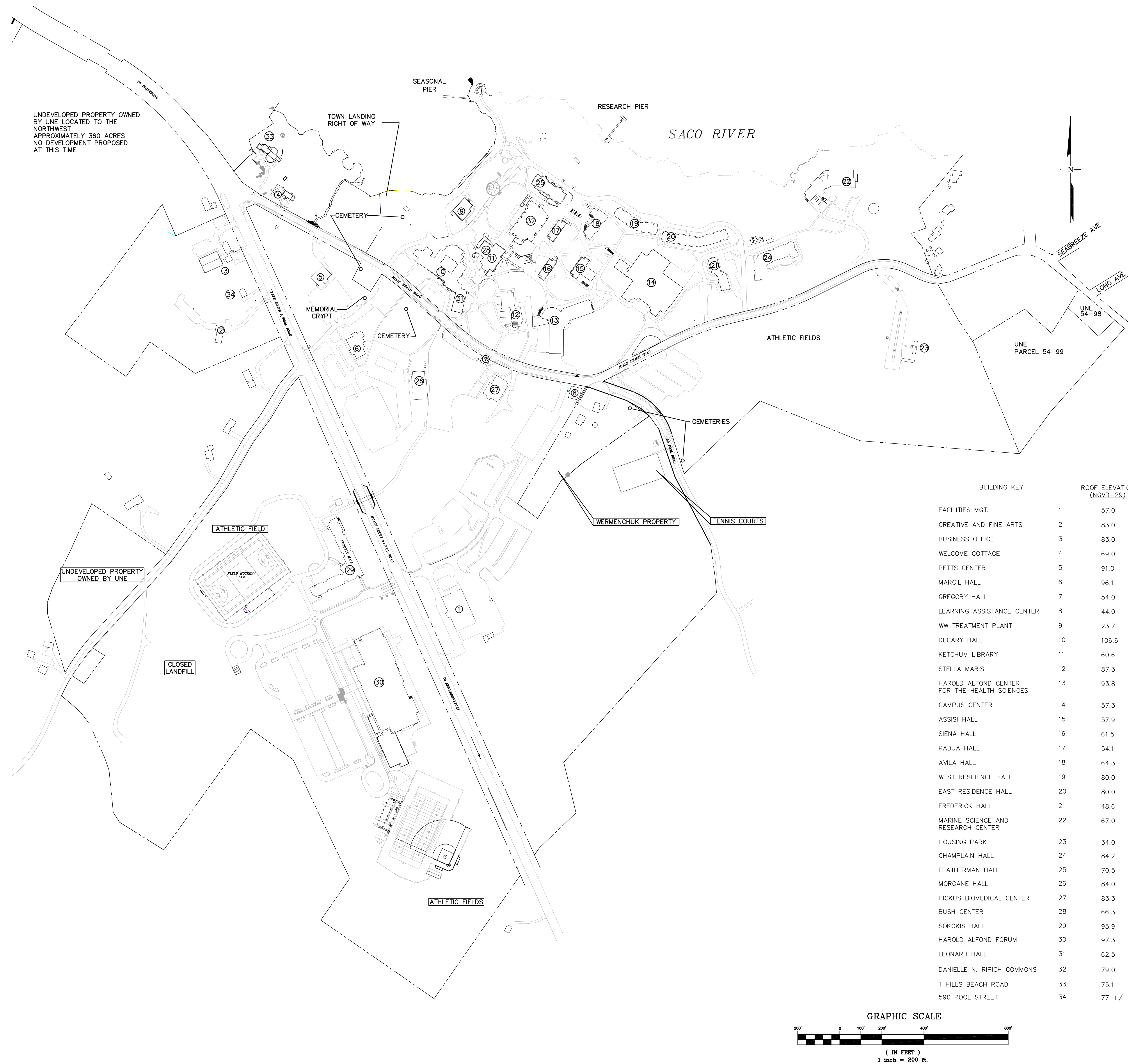
Saco River Corridor Commission law, 38 MRSA section 954, and implementing regulations (protecting against despoliation of scenic areas in the Saco River Corridor, an area extending at least 500 feet from the Saco River).

City of Biddeford Institutional Zone, creating “No Build” Zones within UNE campus, and requiring creation of a Master Plan incorporating a number of development and design standards, including: landscaping; exterior lighting; architectural design standards; and scenic view standards. Some performance standards, such as landscaping, even require that the Master Plan detail how landscaping will enhance the visual environment of the campus.

In response, this Master Plan encompasses the protection of scenic view values in its Architectural Design and Landscape designs standards.

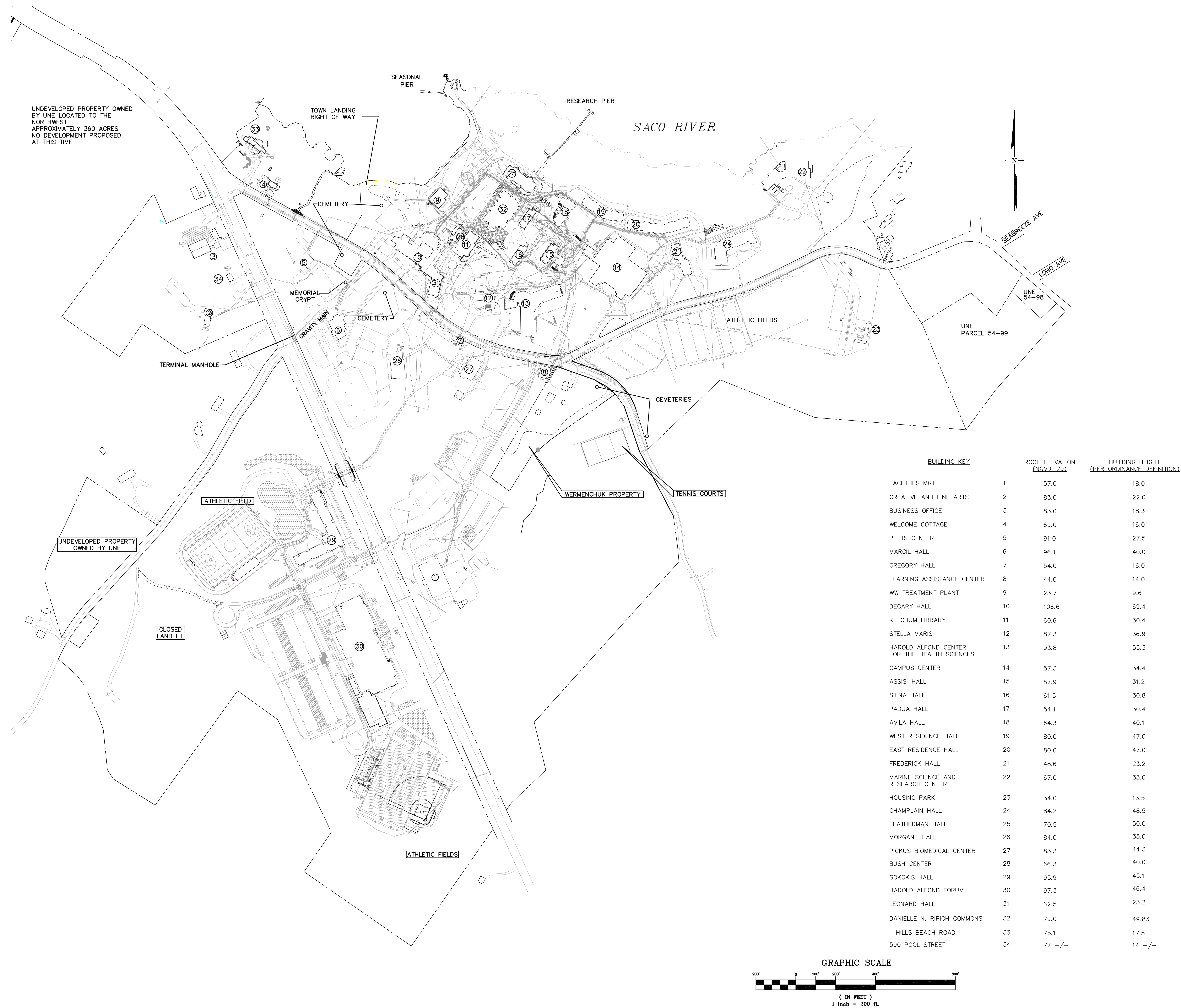
APPENDIX B

UNIVERSITY OF NEW ENGLAND INSTITUTIONAL ZONE MASTER PLAN SUBMISSION 2023-2027



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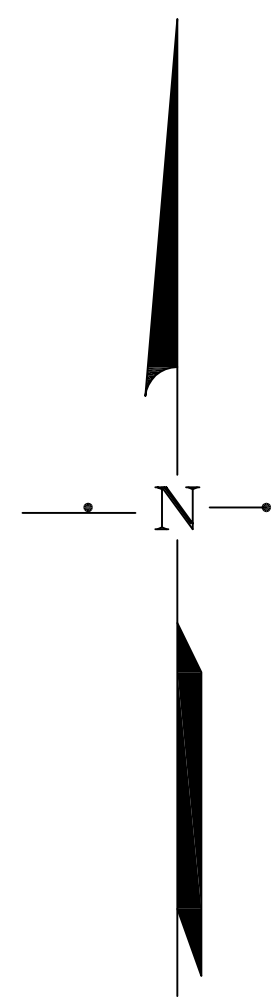
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UNE CONTRACTED WITH A PRE HISTORIC ARCHAEOLOGIST TO MONITOR EARTHWORK DURING CONSTRUCTION OF FEATHERMAN HALL IN 2006. THE RESULTS WERE NEGATIVE

ARCHAEOLOGICAL SURVEY BY ARC, INC. OF ELLSWORTH, MAINE.

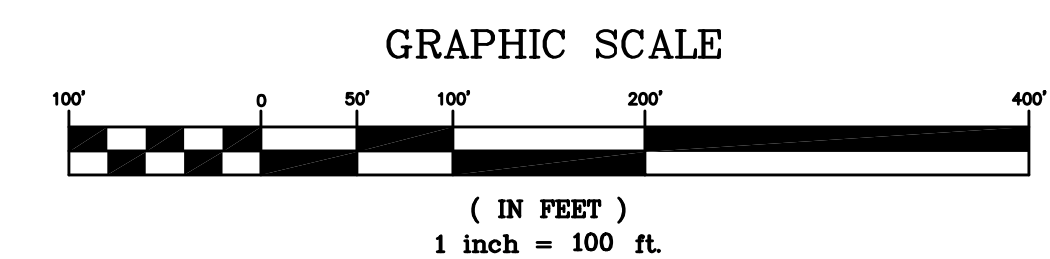
- POSITIVE TEST PIT (TYP)
- NEGATIVE TEST PIT (TYP)
- TEST PIT IDENTIFICATION (TYP)
- APPROXIMATE TREE LOCATION

SACO RIVER

<u>BUILDING KEY</u>		<u>ROOF ELEVATION</u> <u>(NGVD-29)</u>	<u>BUILDING HEIGHT</u> <u>(PER ORDINANCE DEFINITION)</u>
FACILITIES MGT.	1	57.0	18.0
CREATIVE AND FINE ARTS	2	83.0	22.0
BUSINESS OFFICE	3	83.0	18.3
WELCOME COTTAGE	4	69.0	16.0
PETTS CENTER	5	91.0	27.5
MARCIL HALL	6	96.1	40.0
GREGORY HALL	7	54.0	16.0
LEARNING ASSISTANCE CENTER	8	44.0	14.0
WW TREATMENT PLANT	9	23.7	9.6
DECARY HALL	10	106.6	69.4
KETCHUM LIBRARY	11	60.6	30.4
STELLA MARIS	12	87.3	36.9
HAROLD ALFOND CENTER FOR THE HEALTH SCIENCES	13	93.8	55.3
CAMPUS CENTER	14	57.3	34.4
ASSISSI HALL	15	57.9	31.2
SIENA HALL	16	61.5	30.8
PADUA HALL	17	54.1	30.4
AVILA HALL	18	64.3	40.1
WEST RESIDENCE HALL	19	80.0	47.0
EAST RESIDENCE HALL	20	80.0	47.0
FREDERICK HALL	21	48.6	23.2
MARINE SCIENCE AND RESEARCH CENTER	22	67.0	33.0
HOUSING PARK	23	34.0	13.5
CHAMPLAIN HALL	24	84.2	48.5
FEATHERMAN HALL	25	70.5	50.0
MORGANE HALL	26	84.0	35.0
PICKUS BIOMEDICAL CENTER	27	83.3	44.3
BUSH CENTER	28	66.3	40.0
SOKOKIS HALL	29	95.9	45.1
HAROLD ALFOND FORUM	30	97.3	46.4
LEONARD HALL	31	62.5	23.2
DANIELLE N. RIPICH COMMONS	32	79.0	49.83
1 HILLS BEACH ROAD	33	75.1	17.5
590 POOL STREET	34	77 +/-	14 +/-

— EXISTING FOUNDATION
AND DUG WELL

- A PHASE 1 ARCHAEOLOGICAL SURVEY WAS PERFORMED IN 2003 WITHIN A 200' RADIUS OF STELLA MARIS HALL. THE RESULTS WERE NEGATIVE

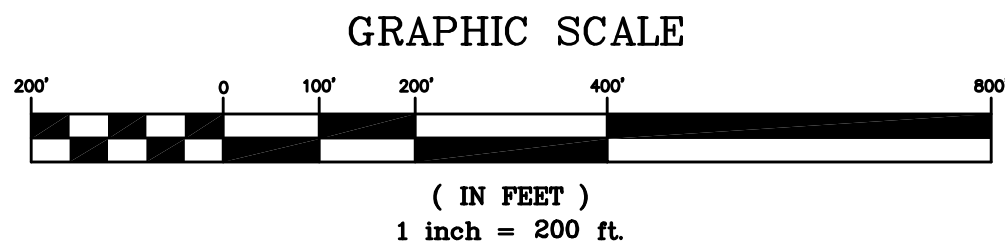
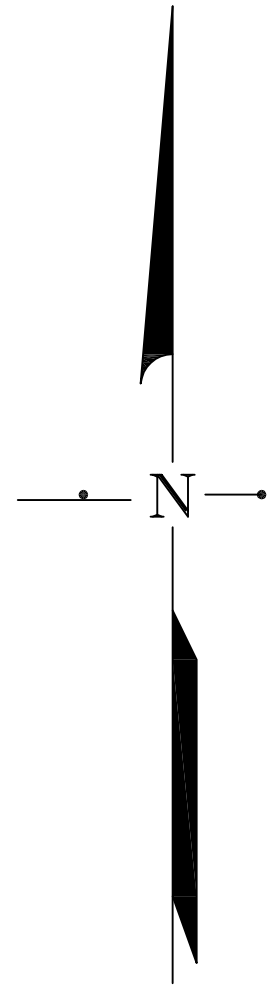


THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SITE DESIGN ASSOCIATES, ANY ALTERATIONS, OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SITE DESIGN ASSOCIATES.

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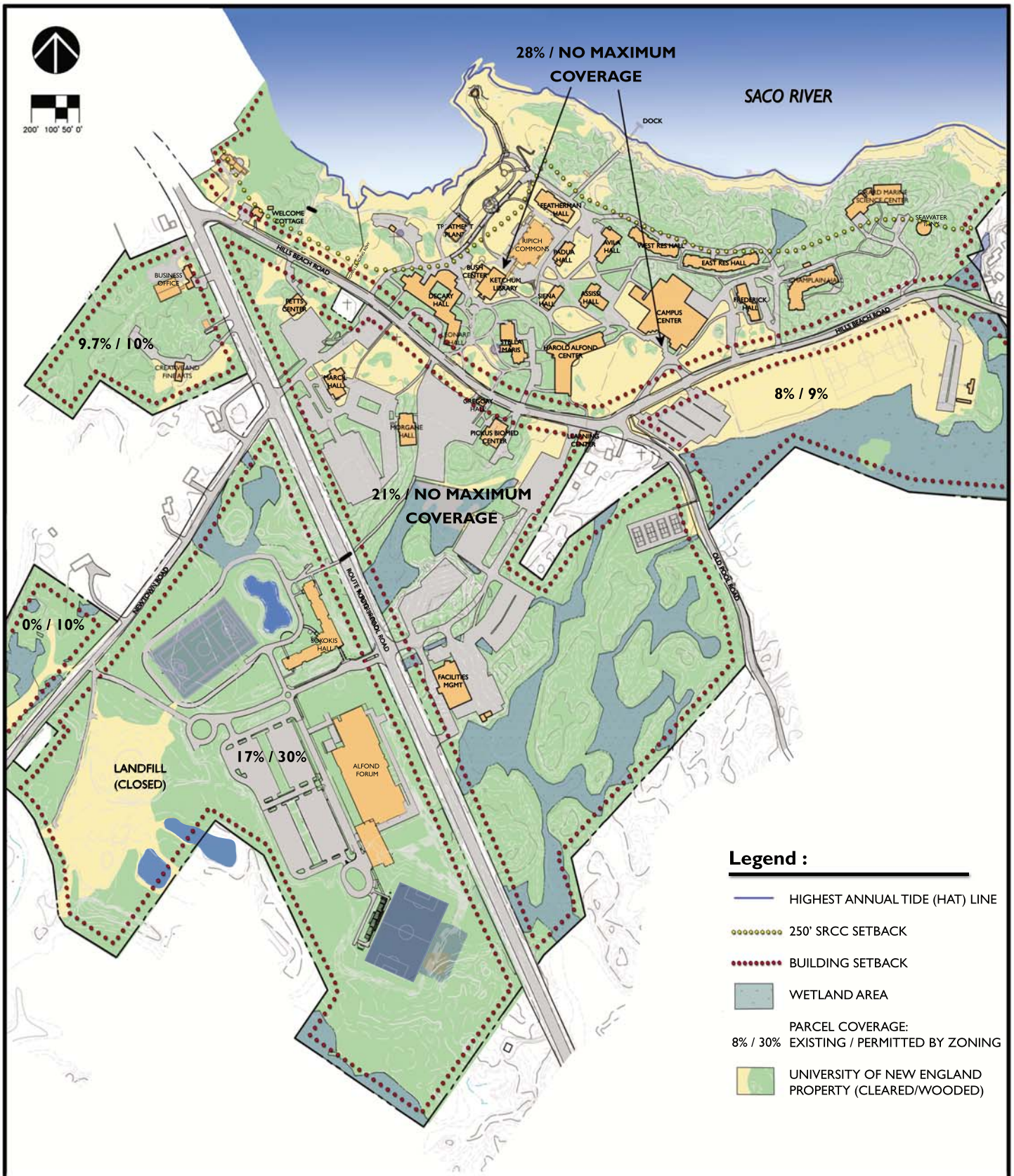


FACILITIES MGT.	1
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BUSINESS OFFICE	3
WELCOME COTTAGE	4
PETTS CENTER	5
MARCIL HALL	6
GREGORY HALL	7
LEARNING ASSISTANCE CENTER	8
WW TREATMENT PLANT	9
DECARY HALL	10
KETCHUM LIBRARY	11
STELLA MARIS	12
HAROLD ALFOND CENTER FOR THE HEALTH SCIENCES	13
CAMPUS CENTER	14
ASSISSI HALL	15
SIENA HALL	16
PADUA HALL	17
AVILA HALL	18
WEST RESIDENCE HALL	19
EAST RESIDENCE HALL	20
FREDERICK HALL	21
MARINE SCIENCE AND RESEARCH CENTER	22
HOUSING PARK	23
CHAMPLAIN HALL	24
FEATHERMAN HALL	25
MORGANE HALL	26
PICKUS BIOMEDICAL CENTER	27
BUSH CENTER	28
SOKOKIS HALL	29
HAROLD ALFOND FORUM	30
LEONARD HALL	31
DANIELLE N. RIPICH COMMONS	32
1 HILLS BEACH ROAD	33
590 POOL STREET	34



THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SITE DESIGN ASSOCIATES, ANY ALTERATIONS, OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SITE DESIGN ASSOCIATES

[illegible]

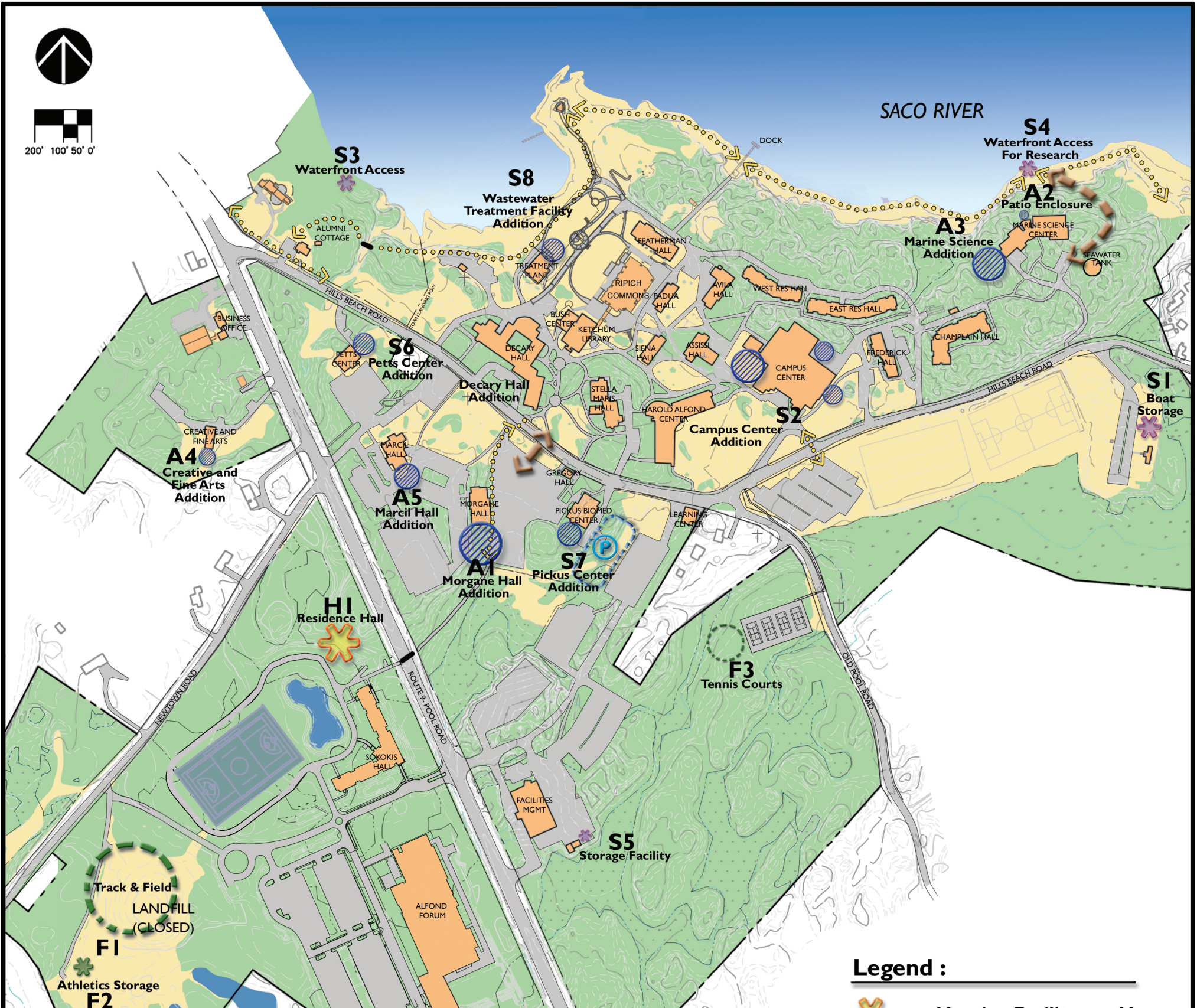


November 10, 2022



University of New England - Biddeford Campus
Campus Master Plan
Restrictions on Developable Areas

Site Design Associates
Civil Engineering and Land Planning



Legend :



364 ACRE PARCEL

Legend :

- Housing Facility
- Academic Facility
- Support Facility
- Athletic Facility
- Athletic Field
- Addition
- Vehicular Circulation
- Pedestrian Circulation
- Parking Facility
- University of New England Property (Cleared-Wooded)

Note:
Graphic symbols are representative of approximate building size (footprint) but are not representative of building shape or height.

January 18 2023

January 18, 2023

APPENDIX

Institutional Zone

Ordinance

UNIVERSITY OF NEW ENGLAND
INSTITUTIONAL ZONE
MASTER PLAN SUBMISSION
2023-2027

Section 11. Institutional master plan. [Ord. No. 2001.90, § 7, 10-16-2001]

- A. Applicability. Any university use or other use conducted by a college or university in an institutional zone shall be consistent with an institutional master plan approved by the Planning Board in accordance with this section. Any site plan approval or other approval for such uses shall be consistent with the approved institutional master plan.
- B. Transition provisions.
 - 1. Following the adoption of this section, the City shall continue to process any pending applications for site plan approval in the institutional zone and shall issue the required permits for these projects if approved and for any other approved but unbuilt projects. This shall include only the following University of New England projects:
 - a. Construction of two approved residence halls;
 - b. Expansion of the cafeteria;
 - c. Construction of a facilities management building;
 - d. Installation of lighting at the existing athletic fields.
 - 2. The Planning Board shall not approve site plans for any other new or expanded buildings and structures, including parking lots, in the institutional zone not addressed in 1. until an institutional master plan has been approved for the college or university. Similarly, the City shall not issue building, plumbing, electrical, or other permits for any other new or expanded buildings or structures in the institutional zone not addressed in 1. until an institutional master plan is approved.
- C. Coordination with site plan review. All projects in the institutional zone that require site plan review in accordance with Article XI of this Code shall continue to require site plan review and approval. In reviewing site plans for university uses or other uses conducted by a college or university in an institutional zone, the Planning Board shall consider the conformance of the proposed activities with the approved institutional master plan and shall approve the project only if it finds that the activities are consistent with the institutional master plan as well as the other standards of Article XI and the provisions of the institutional zone.

In its review of projects in the institutional zone, the Planning Board shall be guided by the approved institutional master plan and shall not impose conditions or requirements on an applicant that are in conflict with the approved institutional master plan. In those areas where the master plan addresses issues that are also covered by site plan review, the Planning Board shall be guided by the overall direction provided in the approved institutional master plan and shall limit the scope of its review under the site plan provisions to how the projects contained in the master plan are designed and constructed to conform to the standards of Section B of Article XI. The following chart outlines the respective areas of concern for the review of an institutional master plan and the site plans for individual projects contained in the master plan for those areas covered in both reviews:

Review Topic	Institutional Master Plan Review Focus	Site Plan Review Focus
Buildings, athletic facilities, and supporting structures	The need for the facilities is related to program growth and changes supported in the master plan, and the general sizes and locations are appropriate based upon those needs	The buildings and/or facilities generally conform to the approved master plan and meet the specific zoning and site plan review standards
Road network and traffic	The primary road network providing access to the campus and within the campus will be adequate to handle the anticipated increase in traffic safely and efficiently while minimizing the impact on other users as a result of the identified improvements	Any road or traffic improvements that are identified in the overall traffic management program in the master plan that are needed to support the specific development project will be built and will meet the technical standards set out in the ordinance
Parking	The amount of parking and general parking locations will be adequate to accommodate the anticipated increase in parking demand resulting from the growth and changes anticipated in the master plan	Any parking improvements that are identified in the overall parking program in the master plan that are needed to support the specific development project will be built and will meet the technical standards set out in the ordinance

Review Topic	Institutional Master Plan Review Focus	Site Plan Review Focus
Water and sewer	The water and sewer systems will be adequate to accommodate the anticipated increase in demand resulting from the growth and changes anticipated in the master plan	The location and design of the water and sewer facilities associated with the specific development proposal are consistent with the master plan and meet the technical standards set out in the ordinance
Landscaping, lighting, signs, noise, scenic views	The master plan establishes appropriate standards for the design of these elements and to minimize the impact on surrounding neighborhoods	The location and design of these elements are consistent with the standards set out in the master plan and meet any other applicable technical standards set out in the ordinance
Pedestrian and bicycle facilities	The pedestrian and bicycle facilities will be adequate to accommodate the anticipated increase in demand resulting from the growth and changes anticipated in the master plan and standards are established for the design of these elements	The location and design of these elements are consistent with the master plan, meet the standards set out in the master plan, and any other technical standards set out in ordinance

- D. Variances. Notwithstanding the provisions of Section 4 of Article IX of this Code, the Zoning Board of Appeals shall not grant variances with respect to the dimensional standards of the institutional zone unless the need for such variation is identified in an approved institutional master plan and such variation is explicitly endorsed by the Planning Board in its approval of the master plan.
- E. Timing of the initial master plan submission. Any college or university located within an institutional zone shall submit an institutional master plan meeting the requirements of this section to the Planning Board for review within two years of the adoption of this section.
- F. Amendment of an approved master plan. A college or university may submit a request to amend the approved institutional master plan at any time provided that no request for an amendment shall be considered within three months of the date of the previous approval of the institutional master plan. The process, procedures, and standards for amending a master plan shall be the same as for the initial approval, however, the applicant may submit an application containing only those items that have been changed from the prior master plan.

- G. Submission and review procedures. The institutional master plan shall contain the information and exhibits set forth in Subsection H. Upon receipt of the initial submission of an institutional master plan or a proposed amended master plan, the application shall be processed and reviewed in accordance with the procedures for reviewing site plan applications with the following additional provisions:
1. Upon receipt of an institutional master plan or an amendment to an approved master plan, the City planning staff shall have 14 days to review the plan for completeness. If the staff finds that the master plan provides all of the information set forth in Subsection H, the staff shall find the plan to be complete, shall notify the applicant, in writing, of this determination, and shall place the master plan on the agenda of the next regularly scheduled Planning Board meeting. The applicant will forward 10 copies of the proposed master plan for Planning Board review. If the staff finds the master plan to be incomplete, it shall notify the applicant, in writing, of this determination and shall indicate the additional information required.
 2. Upon receipt of an institutional master plan, the planning department shall notify all agencies and departments regularly notified of site plan applications as well as the Biddeford Conservation Commission and any neighborhood organization that has requested to be notified of the submission of the master plan.
 3. Prior to the approval of an institutional master plan or an amended institutional master plan, the Planning Board shall hold a public hearing.
 4. The Planning Board shall review the institutional master plan at a regularly scheduled meeting of the Board. The Board shall have 30 days following its initial consideration of the plan to approve, approve with conditions, or deny the master plan.
 5. A copy of any approved institutional master plan or an amendment to a master plan shall be filed with the City Clerk. **[Amended 3-5-2019 by Ord. No. 2019.14]**
- H. Contents of the institutional master plan. An institutional master plan shall provide the City and abutting neighborhoods with a clear outline of the anticipated growth and changes of the institution over the next five to 10 years and the potential impact of those changes on the City and areas surrounding the institution. The master plan should, therefore, contain a description of the current programs and facilities of the college or university, a description of anticipated changes in programs and facilities over the next five years, an analysis of the potential impacts of the anticipated changes on the facilities and the surrounding neighborhoods, an assessment of actions proposed to mitigate any adverse impacts resulting from the anticipated changes, and a conceptual plan showing the approximate size and location of proposed facility improvements.

The institutional master plan shall contain at least the following information and exhibits:

1. Mission statement and institutional objectives.
 - a. The institution's adopted mission statement.
 - b. A statement of any anticipated changes in the institution's mission over the next five years.
 - c. A statement of the institution's objectives with respect to growth and change over the next five years.
2. Existing physical conditions.
 - a. A scaled plan at a scale of not more than one inch equals 200 feet showing the location of all existing buildings, structures, athletic fields and facilities, parking, walkways, service areas, and other impervious surfaces and the height of all buildings and structures referenced to the National Geodetic Vertical Datum (NGVD).
 - b. A scaled plan at the same scale as the existing conditions plan showing the location of all existing utilities, sewer and water systems, and stormwater drainage facilities.
 - c. A natural resources inventory and analysis showing the location of all significant natural resources within those areas of the campus that are already developed or where development activities including clearing or filling are proposed or that will be potentially impacted by proposed development activities. The analysis shall assess the significance of these resources and the issues they raise with respect to the master plan. This shall include a plan at the same scale as the existing conditions plan showing the locations of the significant resources.
 - d. An historic and archeological resources inventory and analysis showing the location of any known historic or archeological resources and any area with potential as an area of historic or archeological significance within those areas of the campus that are already developed or where development activities including clearing or filling are proposed or that will be potentially impacted by proposed development activities. This shall include a plan at the same scale as the existing conditions plan.
 - e. Data on the existing lot coverage and lot coverage ratio.
3. Programs and activities.
 - a. A narrative providing at least the following information about current programs and activities:
 - (1) The current educational programs and degree offerings.
 - (2) Other regularly scheduled programs or activities offered or hosted by the institution.

- (3) Current enrollment of full time and part time students by head count based upon the most recent integrated postsecondary data survey (IPDS) report.
 - (4) Current employment by type of positions and full time/part time status by head count based upon the most recent IPDS report.
 - (5) The number of people living on campus.
- b. A narrative describing how the programs and activities and the number of students, employees, campus residents, and program participants are anticipated to change over the next five years.
- 4. Educational, research, residential, support and athletic facilities.
 - a. A description and plan identifying what buildings and facilities are currently used for these purposes.
 - b. The current bed capacity of all residential buildings and the anticipated change in the total bed capacity.
 - c. A description of any significant changes in the type of use made of existing buildings, significant expansions of existing buildings, or new buildings and facilities that are anticipated to be needed in the next five years.
 - d. A description of how the anticipated changes in facilities relate to program changes and the institution's mission.
- 5. Parking and traffic.
 - a. Information on current traffic volumes and conditions including levels of service on the principal public streets and intersections of public streets within the zone and on the primary access routes to the campus.
 - b. A description of anticipated changes in traffic volumes over the next five years resulting from the changes in programs and facilities included in the master plan.
 - c. An analysis of the impact of these changes on traffic flow and vehicular and pedestrian safety on public streets within the zone and that provide access to the campus.
 - d. A proposed program of improvements to address any unacceptable impacts resulting from changes in traffic volumes including activities that will be undertaken to mitigate any adverse impacts on adjacent residential neighborhoods.
 - e. Information on the number and location of existing parking spaces.
 - f. An analysis of the adequacy of the existing parking to meet anticipated changes in programs and facilities over the next five years.

- g. An assessment of pedestrian and bicycle movements and safety related to the parking supply and locations.
 - h. A proposed program of parking improvements to meet any identified deficiencies.
- 6. Water and sewer service.
 - a. A description of current provisions for water supply and sewage disposal including capacities, current utilization rates, and conformance with any permit or other legal standards.
 - b. An analysis of the change in demand for water supply and sewage disposal resulting from anticipated changes in programs and facilities over the next five years and the adequacy of the existing systems to meet this demand.
 - c. A proposed program of improvements to address any identified deficiencies.
 - d. A statement as to how water supply and sewer disposal improvements are or will be coordinated with City programs and the needs of neighboring residential areas.
- 7. Municipal and community services.
 - a. A description of all municipal and community services (police, fire, rescue, recreation, etc.) currently utilized by the institution and data on the current level of usage.
 - b. An analysis of the change in demand for municipal and community services and the adequacy of the existing services to meet this demand.
 - c. A proposed program of improvements to meet the identified deficiencies including proposed funding mechanisms.
- 8. Neighborhood impacts.
 - a. An assessment of how current campus activities impact neighboring residential areas including, but not limited to, traffic, noise, and visual intrusions. This assessment shall consider conformity to current City and state standards with respect to these items as well as documented evidence of any community or neighborhood concerns relative to these issues.
 - b. An evaluation of current efforts to mitigate these impacts.
 - c. An assessment of any changes in these impacts resulting from the changes in programs or facilities included in the master plan.
 - d. A program for mitigating the adverse impacts of proposed changes or improvements on surrounding residential neighborhoods.

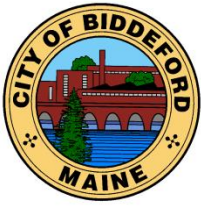
9. Community outreach.
 - a. A description of current community outreach activities.
 - b. An analysis of anticipated changes in outreach activities over the next five years.
10. Conceptual development program.
 - a. A conceptual site plan at the same scale as the existing conditions plan showing the approximate size and location of proposed changes to buildings, structures, parking lots, pedestrian facilities, bicycle facilities, athletic fields and facilities, roads, and similar facilities proposed in the master plan. This should show new facilities, modifications or enlargements of existing facilities, and the planned removal of facilities.
 - b. An accompanying narrative or tables detailing the scale or size of the proposed improvements including the approximate height of buildings, the approximate peak elevation of buildings and structures referenced to NGVD, approximate floor area, approximate size of parking areas, or approximate occupancy.
 - c. A description of all development and design standards or provisions that will apply to the proposed improvements in accordance with Subsection I.
 - d. A schedule setting out when the improvements included in the conceptual development program are anticipated to be completed.
- I. Development and design standards. The institutional master plan shall establish development and design standards that shall apply to all development proposals and other improvements within the institutional zone. These development and design standards will apply to individual projects that are submitted for site plan review. These standards shall foster the development of a visually and architecturally integrated campus that is safe, environmentally sensitive, and that minimizes the adverse impact of the campus on neighboring residential areas. At a minimum, these development and design standards shall address the following areas:
 1. Landscaping. The standards shall establish a general pattern for all campus landscaping including the typical size and type of plantings and shall detail how landscaping will be used to enhance the visual environment of the campus, shield and soften service and parking areas, and minimize impacts on surrounding residential areas and the users of public streets through the campus.
 2. Exterior lighting. The standards shall establish a general lighting theme for the campus and shall identify the appropriate maximum, average, or minimum illumination levels and uniformity ratios for various areas and facilities, the typical type of lighting fixtures and poles that will be used, and shall detail how night-time sky glow and light intrusion on neighboring residential areas

will be minimized.

3. Signage. The standards shall establish a consistent design theme for all campus signs that enhances the visual environment of the campus and shall identify the general design, sizes, and locations for various types of campus signs.
 4. Pedestrian and bicycle facilities. The standards shall establish an integrated program for accommodating pedestrians and bicyclists safely while promoting a campus environment that is pedestrian focused. The standards shall identify the types, general location, and typical design of various pedestrian and bicycle facilities.
 5. Noise. The standards shall establish an overall program for minimizing the impact of campus noise on adjacent residential areas. The standards shall identify measures that will be employed to control noise at the source as well as to mitigate the impacts of noise on adjacent property.
 6. Architectural design and details. The standards shall establish an integrated design theme for campus buildings that is harmonious with existing buildings while promoting a high level of design for new buildings. The standards shall address the scale and massing of buildings, appropriate materials and colors, rooflines, locations of building entrances, architectural detailing, and similar features to create a visually attractive campus while minimizing impacts on surrounding residential areas.
 7. Protection of identified scenic views. The standards shall establish a standard approach for protecting scenic views within or from the campus that have been formally identified and approved by the City Council.
- J. Approval standards. In reviewing an institutional master plan, the Planning Board shall approve the master plan if it finds that:
1. The activities and facilities proposed in the master plan are consistent with the institution's mission statement.
 2. The facilities conform to the requirements of the institutional zone and other applicable provisions of the zoning ordinance.
 3. There is a reasonable expectation that individual projects carried out in accordance with the institutional master plan will be able to be designed so that they comply with the site plan review standards of Article XI.
 4. The activities and facilities will be designed in a manner that will not unreasonably increase adverse impacts on adjacent residential neighborhoods or the facilities or services of the City of Biddeford.
 5. The City Council and UNE shall establish a scholarship and community grant program, within the first six months of the acceptance of the university's master plan.
- K. Appeals of Planning Board action. Appeals of the actions of the Planning Board in

reviewing and approving institutional master plans under this section shall be to the City of Biddeford's Zoning Board of Appeals. The applicant and any party to the review of the institutional master plan may appeal any action of the Planning Board within 30 days of such action by providing written notice to the Board of Appeals setting forth the action being appealed and the specific basis for the appeal. Appeals of Planning Board actions in the review of an institutional master plan shall be processed in accordance with the procedures set out in Section 5 of Article IX of this ordinance.¹

1. Editor's Note: The provisions of former Section 12, Medical marijuana dispensary moratorium, added 3-16-2010 by Ord. No. 2010.23, have expired and therefore are not included in the Code.



CITY OF BIDDEFORD

Planning and Development Department

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PLANNING BOARD STAFF REPORT

TO: Chair Patoine and Members of the Biddeford Planning Board

FROM: David C.M. Galbraith, City Planner & Deputy Director of the Planning & Development Dept.

EC: Mike Morse, Senior Environmental Consultant of Archipelago (MMorse@ArchipelagoNA.com)

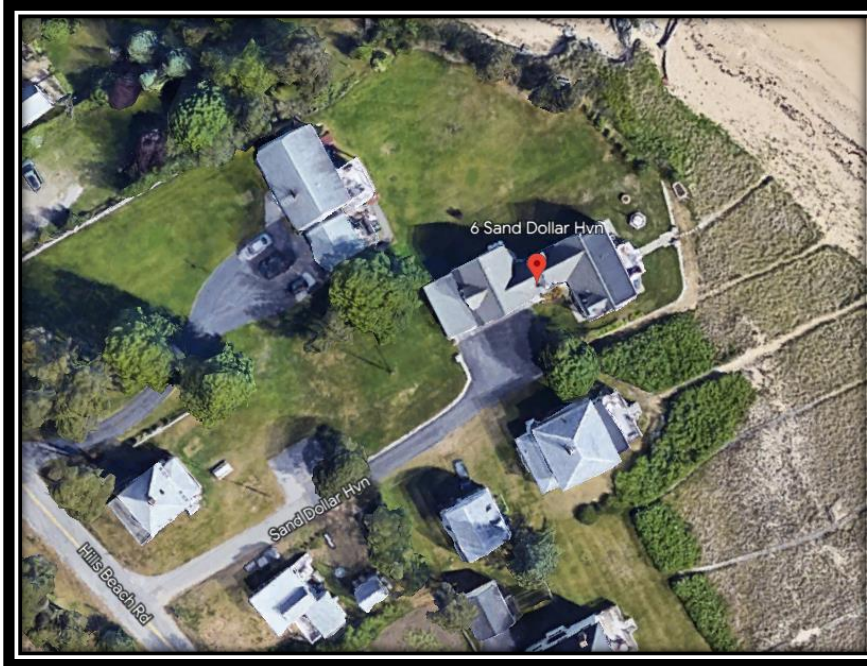
DATE: April 27, 2023

RE: **2023.23 Shoreland Zoning Permit Application (GPE) for GL Beamon Trust to remove and reconstruct the existing non-conforming single family home at 6 Sand Dollar Haven (Tax Map 55, Lots 33) in the Coastal Residential and Shoreland Overlay Zone.**

MEETING DATE: May 3, 2023 at 6:00 PM

1. INTRODUCTION

This application involves redevelopment of property is at 6 Sand Dollar Haven, located within the Coastal Residential and Shoreland Zone.



The Applicants, G.L. Beamon Trust and their authorized Agent, Mike Morse, Senior Environmental Consultant of Archipelago, are seeking the Planning Board's relocation determination of a partially non-conforming structure located at 6 Sand Dollar Haven. Pursuant to Article XIV, Section 12(C)(4) of the City of Biddeford Code of Ordinances, whenever a non-conforming structure is removed by more than 50% of its market value and is proposed for reconstruction, such reconstruction is allowed provided that the Board determines that the footprint of the structure meets the coastal wetland setback to the greatest practical extent.

Accordingly, the enclosed application requests the Board's determination. The subject property is served by on on site septic system and the Applicant's are proposing 25% lot coverage, which is the same lot coverage as exists today.

2023.23 Shoreland Zoning Permit Application (GPE) for GL Beamon Trust to remove and reconstruct the existing non-conforming single family home at 6 Sand Dollar Haven (Tax Map 55, Lots 33) in the Coastal Residential and Shoreland Overlay Zone.

Planning Board Meeting Date: May 3, 2023

Mr. Morse provided an excellent overview with the Application request which I am including in it's entirety below (shown in italics):

The applicant purchased the subject property in January 2021. The parcel is developed with a residential dwelling, with attached garage, brick patios, walkways, landscape brick retaining walls, customary lawn and landscaped areas, and a driveway. The dwelling structure is located 89.6' feet from the upland edge of the coastal wetland as delineated by Dow & Coulombe, Inc. on September 21, 2022, and therefore that portion of the structure considered non-conforming under the Code. According to City Assessor records, the structure was constructed in 1924.

The project proposes to remove the existing dwelling portion of the structure and to reconstruct on the existing foundation. The garage portion of the structure is not proposed for removal. Such projects are allowed, subject to City Code, Article XIV, Section 12(C)(4), Reconstruction or Replacement. Specifically, the Code allows the removal and reconstruction of a non-conforming structure within the shoreland zone provided that the structure's footprint is relocated to be in conformity with the shoreline setback to the greatest practical extent, as determined by the Planning Board. Greatest practical extent relocation determination by the Planning Board is the exclusive purpose of this application. Pursuant to the City's Code, when relocating a non-conforming structure in compliance with the shoreline setback to the greatest practical extent, the Planning Board shall consider 6 specific criteria (see Article XIV, Section 12 (C)(3)). These criteria include, and are limited to the following:

- 1) Size of the lot*
- 2) Slope of the land*
- 3) Potential for soil erosion*
- 4) Location of other structures on the property and on adjacent properties*
- 5) Location of the septic system and other on-site soils suitable for septic systems*
- 6) The type and amount of vegetation to be removed to accomplish the relocation*

The subject lot is 26,352 square feet and approximately 85 feet wide. The existing and proposed structure location is affected by the minimum shoreline setback requirements, the minimum lot line setback requirements, as well as the location of the septic. In addition, approximately 10,841 square feet of the southerly portion of the lot is in the Resource Protection District that extends from Biddeford Pool to the south (the existing footprint of the house and a portion of the garage is in the Limited Residential District). With respect to the 6 relocation criteria outlined in the Code, we provide the following:

- 1) Size of the lot: Considering the modest lot size, multiple minimum setback restrictions and location of the RP, there is no location for the structure to be relocated to better conform to the coastal wetland setback requirement without encroaching into the RP District, which is prohibited by the City's Code. In the attached site plan prepared by Dow & Coulombe dated March 14, 2023, we propose to tear down only the house portion of the structure, keeping the garage intact, and rebuilding on the existing foundation. Although this does not improve conformity with the coastal wetland setback, by keeping the structure in its current location and out of the RP, it does not increase the structure's non-conformity. Due to the location of the houses on the abutting properties, moving the structure back will also cause a larger portion of the reconstructed house, including the garage, to be closer to the abutting structures and may result in the obstruction of views.*

2023.23 Shoreland Zoning Permit Application (GPE) for GL Beamon Trust to remove and reconstruct the existing non-conforming single family home at 6 Sand Dollar Haven (Tax Map 55, Lots 33) in the Coastal Residential and Shoreland Overlay Zone.

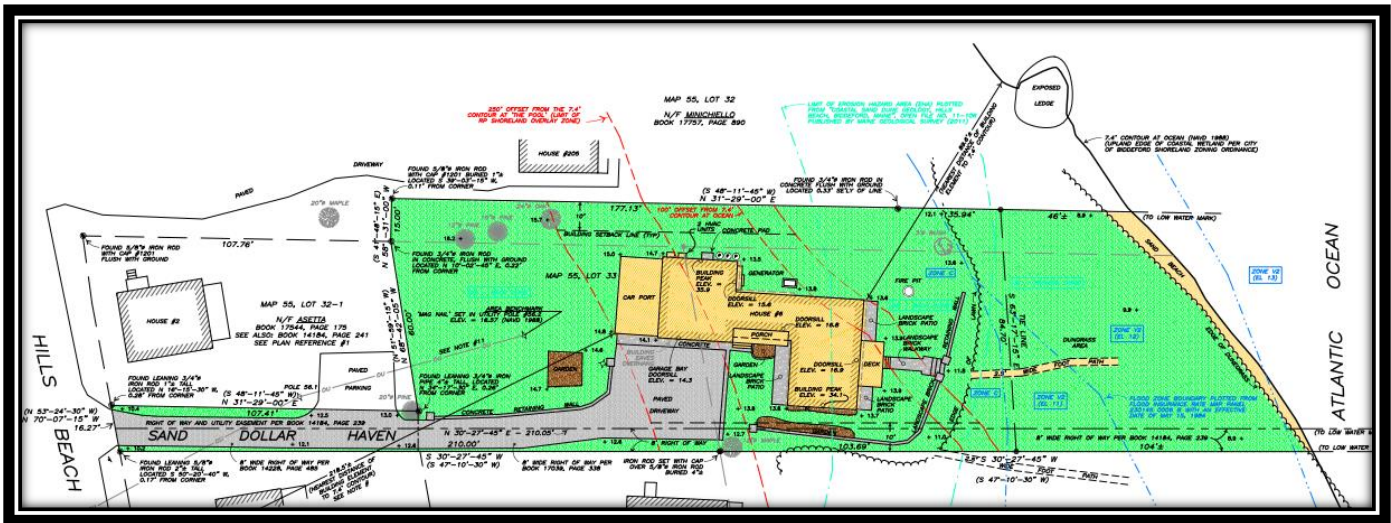
Planning Board Meeting Date: May 3, 2023

- 2) *Slope of the land: The slope of the land in the area of the lot that is subject to this proposal is not prohibitive to construction and does not interfere with the structure relocation as proposed.*
- 3) *Potential for soil erosion: There are no unique soil conditions or other soil features such that the relocation of the structure footprint would create risk of soil erosion from the lot.*
- 4) *Location of other structures on the property and on adjacent properties: The garage will remain and therefore is an impediment to the relocation of the dwelling further back from the coastal wetland. There are no other structures that are located on the property that would affect the proposed relocation. There are structures located on the adjacent properties to the east and west of the subject lot, and those abutting structures do impact the footprint relocation on the subject lot. Relocating the existing footprint any further back than the proposed relocation may impact the water views of the abutting structures.*
- 5) *Location of the septic system and other on-site soils suitable for septic systems: The property is currently served by a subsurface wastewater disposal system that is working properly. The area of the lot that is between the existing garage location and the southerly lot line must be reserved to accommodate a future replacement septic system.*
- 6) *The type and amount of vegetation to be removed to accomplish the relocation: Vegetation removal does not impede structure footprint relocation under the City Code. Additionally, Article XIV, Section 12.C.4 of the Code directs the Planning Board to also consider the physical condition and type of foundation present as part of its relocation determination. The applicant has indicated that the existing foundation is in good condition and is suitable for re-use. Relocation of the structure, which is not possible as described above, would cause the existing serviceable foundation to be removed. This further supports reconstruction of the structure in its present location.*

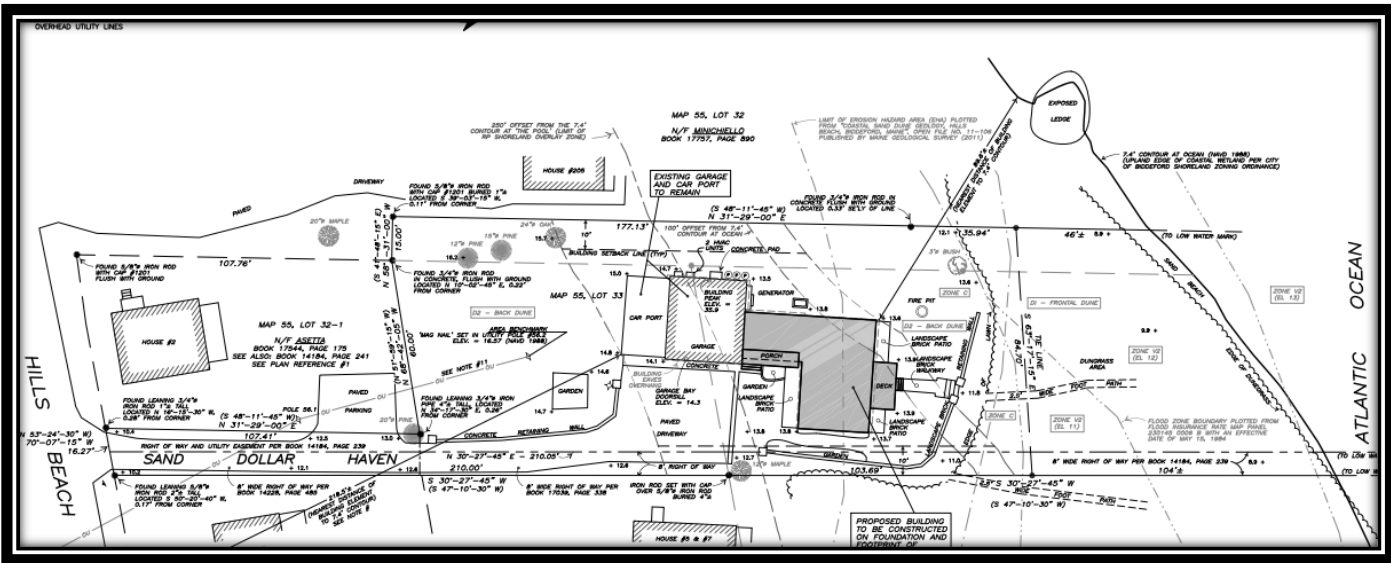
Relocation Summary: Due to the relatively small lot size, narrow lot width, minimum setback requirements established in the Code, location of the RP, and otherwise discussed above, it is our opinion that the existing footprint establishes the minimum shoreline setback to the greatest practical extent, and that relocating the structure is prohibited as more of the structure would be located closer to Biddeford Pool in the Resource Protection District. In addition, keeping the garage intact and utilizing the existing foundation will reduce the overall disturbance of the site. Accordingly, the applicant respectfully requests the Planning Board's concurrence that the structure footprint's greatest practical extent relocation on the lot remains at 89.6 feet from the upland edge of the coastal wetland and may be rebuilt on the existing foundation.

2023.23 Shoreland Zoning Permit Application (GPE) for GL Beamon Trust to remove and reconstruct the existing non-conforming single family home at 6 Sand Dollar Haven (Tax Map 55, Lots 33) in the Coastal Residential and Shoreland Overlay Zone.

Planning Board Meeting Date: May 3, 2023



Existing Conditions Plan - 6 Sand Dollar Haven (Tax Map 55, Lots 33)



Proposed Conditions Plan - 6 Sand Dollar Haven (Tax Map 55, Lots 33)

2. PROJECT DATA/INFORMATION

1.	Applicant:	G.L. Beamon Trust 6 Sand Dollar Haven Biddeford, ME 04005
2.	Owner of Property:	Same as Applicant
3.	Agent:	Mike Morse Archipelago 1 Dana Street Portland, ME 04101

2023.23 Shoreland Zoning Permit Application (GPE) for GL Beamon Trust to remove and reconstruct the existing non-conforming single family home at 6 Sand Dollar Haven (Tax Map 55, Lots 33) in the Coastal Residential and Shoreland Overlay Zone.

Planning Board Meeting Date: May 3, 2023

4.	Surveyor:	Dow & Coulombe, Inc. 13 Park Street Saco, ME 04072
5.	Project Location:	6 Sand Dollar Haven
6.	Project Tax Map #/Lot #:	Tax Map 55, Lot 33
7.	Lot Size:	26,352 SF
8.	Base Zoning:	Coastal Residential
9.	Overlay Zoning:	Limited Residential & Resource Protection
10.	Existing Use:	Single Family Home
11.	Proposed Use:	Single Family Home
12.	Approvals Required:	
13.	Uses in the Vicinity:	Residential
14.	Waivers Needed:	a. None
18.	Waivers Granted:	a. N/A
22.	Other Non-City Permits Required:	
23.	LDR Attachment A: Fees Paid:	Yes
25.	Planning Board Review History: May 3, 2023	

3. REVIEW PROCESS:

Per City ordinance, this application is subject to Site Plan (Land Development Regulations, Article XI) review and approval by the Planning Board.

4. PLANNING and CODE ENFORCEMENT COMMENTS:

This Application has been discussed with the Roby Fecteau, Director of Code Enforcement and he and the Planning Department agree that the proposal meets the “greatest practice extent” standards.

5. STAFF REVIEW:

- A. **APPLICATION COMPLETENESS:** The applicant has submitted a complete application, featuring all required elements as specified under Section 66-35 (Required Information for Final Plan Submissions).
- B. **ZONING:** The subject property has an existing non-conforming (setback) single-family home and is located within the Coastal Residential and Shoreland Overlay Zone. The proposed continued use of the property as a single-family home is a permitted use within the CR and Shoreland Overlay Zone. With respect to applicable dimensional requirements, the project would comply with all applicable requirements, including building height, building setback, frontage, and lot coverage requirements.

6. STAFF RECOMMENDATION:

The Application includes detailed responses to the 6 specific criteria outlined with Article XIV, Section 12 (C)(3) that the Planning Board evaluates in making the requested “greatest practice extent” determination. Staff recommends the Planning Board approve the Application.

2023.23 Shoreland Zoning Permit Application (GPE) for GL Beamon Trust to remove and reconstruct the existing non-conforming single family home at 6 Sand Dollar Haven (Tax Map 55, Lots 33) in the Coastal Residential and Shoreland Overlay Zone.

Planning Board Meeting Date: May 3, 2023

SAMPLE MOTIONS:

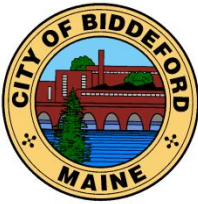
- A. Motion to Approve: I motion to APPROVE the Shoreland Zoning Permit (GPE) application for the proposal located on 6 Sand Dollar Haven (Tax Map 55, Lots 33), within the Coastal Residential (CR) zoning district and in the Shoreland Overlay of Limited Residential & Resource Protection, as presented with the adoption of the Findings of Fact (FOF) and Conditions of Approval (COA).

- B. Motion to Deny I motion to DENY Shoreland Zoning Permit Application (GPE) approval for the proposal located at 6 Sand Dollar Haven (Tax Map 55, Lots 33), within the Coastal Residential (CR) zoning district and in the Limited Residential and Resource Protection Shoreland Overlay Zones, for the following reasons:
 - 1) _____.
 - 2) _____.
 - 3) _____.

- C. Motion to Table: I motion to TABLE the Shoreland Zoning approval for the proposal to be located at 6 Sand Dollar (Tax Map 55, Lots 33), within the Coastal Residential (CR) zoning district in the Limited Residential (LR) & Resource Protection (RP) shoreland overlay zone, for the following reasons:
 - 1) _____.
 - 2) _____.
 - 3) _____.

Respectfully submitted,

David C.M. Galbraith
City Planner & Deputy Director of the Planning & Development Dept.



CITY OF BIDDEFORD

Planning and Development Department

205 Main Street
P.O. Box 586
Biddeford, ME 04005
(207) 284-9115

FINDINGS OF FACT AND CONCLUSIONS OF LAW

Determination of the Required Setback to the Greatest Practical Extent

Pursuant to the provisions of the City of Biddeford Land Development Regulations, Article XIV, Shoreland Zoning, the Biddeford Planning Board has considered the application (Case# 2023.23) of GL Beamon Trust to relocate a non-conforming structure to meet the coastal wetland setback to the greatest practical extent at 6 Sand Dollar Haven (Tax Map 55, Lots 33), including supportive data, public hearing testimony and related materials contained in the record. Based on Public Comment and Staff's review and recommendation, the Planning Board makes the following Findings of Fact and Conclusions of Law:

1. FINDINGS OF FACT

1.	Applicant:	G.L. Beamon Trust 6 Sand Dollar Haven Biddeford, ME 04005
2.	Owner of Property:	Same as Applicant
3.	Agent:	Mike Morse Archipelago 1 Dana Street Portland, ME 04101
4.	Surveyor:	Dow & Coulombe, Inc. 13 Park Street Saco, ME 04072
5.	Project Location:	6 Sand Dollar Haven
6.	Project Tax Map #/Lot #:	Tax Map 55, Lot 33
7.	Lot Size:	26,352 SF
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9.	Overlay Zoning:	Limited Residential & Resource Protection
10.	Existing Use:	Single Family Home
11.	Proposed Use:	Single Family Home
12.	Approvals Required:	
13.	Uses in the Vicinity:	Residential
14.	Waivers Needed:	a. None
18.	Waivers Granted:	a. N/A
22.	Other Non-City Permits Required:	N/A
23.	LDR Attachment A: Fees Paid:	Yes
25.	Planning Board Review History:	May 3, 2023 – Public Hearing

2. CONCLUSIONS OF LAW

The Planning Board has determined that based on the following factors, as outlined in Article XIV (Shoreland Zoning), Section 12. C.2. (Land Use Standards) of the Land Development Regulations, the GL Beamon Trust proposal to relocate a non-conforming structure to meet the coastal wetland setback to the greatest practical extent at 6 Sand Dollar Haven (Tax Map 55, Lots 33), demonstrates the limits of the Greatest Practical Extent setback from the resource:

- a. The size of the lot limits the ability to locate further from the resource;
- b. The slope of the land limits the ability to locate further from the resource;
- c. The potential for soil erosion limits the ability to locate further from the resource;
- d. The location of other structures on the property and on adjacent properties limits the ability to locate further from the resource;
- e. The location of the septic system and other on-site soils suitable for septic systems limits the ability to locate further from the resource; and
- f. The type and amount of vegetation to be removed to accomplish the relocation limits the ability to locate further from the resource.

3. DETERMINATION

Based on the evidence available and the conclusions above, the Biddeford Planning Board grants the determination of the Greatest Practical Extent for the proposed project summarized above, located at 6 Sand Dollar Haven (Tax Map 55, Lots 33), in accordance with the submitted application, supporting data, representations made, other related materials on file, and the following Conditions of Approval:

Conditions of Approval:

- 1. Prior to the issuance of a building permit the Applicant shall install all required erosion control measures to the satisfaction of the Director of Code Enforcement.**
- 2. Obtain all required permits from Maine Department of Environmental Protection and the Biddeford Code Enforcement Office.**
- 3. This approval shall expire one year from the date below if a substantial start is not made in construction. If a substantial start is made within one year of the date below, the applicant shall have one additional year to complete the project, thereafter this approval shall expire.**

Larry Patoine, Planning Board Chairman

Date



Michael Morse
Senior Environmental Consultant
MMorse@ArchipelagoNA.com

1 Dana Street
Portland, Maine 04101
(207) 558-0102

April 19, 2023

Planning Board
City of Biddeford
P.O. Box 586
Biddeford, ME 04005

Re: G L Beamon Trust, 6 Sand Dollar Haven: Non-Conforming Structure Relocation

Dear Members of the Biddeford Planning Board:

On March 15, 2023, an application was submitted on behalf of G L. Beamon Trust for the Board's relocation determination of a partially non-conforming structure located at 6 Sand Dollar Haven, which we anticipate will be placed on the May 3rd meeting agenda. In support of that application, we submit the attached proposed Subsurface Wastewater Disposal System Application prepared by Albert Frick Associates.

Pursuant to Article XIV, Section 12(C)(3) of the City of Biddeford Code of Ordinances, an applicant must demonstrate that the present subsurface sewage disposal system meets the requirements of state law and the State of Maine Subsurface Wastewater Disposal Rules (Rules), or that a new system can be installed in compliance with the law and said Rules. While the existing system continues to function properly, documentation of the system design has not been discovered, likely due to its age. As such, a replacement septic system has been designed. The proposed system conforms with the State of Maine Subsurface Wastewater Disposal Rules and all required setbacks.

Thank you in advance for your consideration of this matter. I look forward to discussing this with you at the May 3rd Planning Board meeting.

Sincerely,

Mike Morse

MM/lb
Enclosures
Cc: Greg Beamon

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services
Div of Environmental Health, 11 SHS
(207) 287-2070 FAX (207) 287-4172

PROPERTY LOCATION		>>CAUTION: LPI APPROVAL REQUIRED<<	
City, Town, or Plantation	BIDDEFORD	Town/City	Permit #
Street or Road	6 SAND DOLLAR HAVEN	Date Permit Issued	Fee \$ Double Fee Charged []
Subdivision, Lot #			L.P.I.#
OWNER/APPLICANT INFORMATION		Local Plumbing Inspector Signature	
Name (last, first, MI)	BEAMON GREG	Fee \$	State Fee Fee \$ Locally Adopted Fee
	☒ Owner ☐ Applicant	Copy: [] Owner [] Town [] State	
Mailing Address of Owner/Applicant		The Subsurface Wastewater Disposal System shall not be installed until a Permit is issued 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.	
Daytime Tel. #	603-560-6516	Municipal Tax Map # 55 Lot # 33	
OWNER OR APPLICANT STATEMENT		CAUTION: INSPECTION REQUIRED	
I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a permit.		I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.	
Signature of Owner/Applicant		Local Plumbing Inspector Signature	
Date		(1st) Date Approved	
		(2nd) Date Approved	

PERMIT INFORMATION

TYPE OF APPLICATION ☐ 1. First Time System ☒ 2. Replacement System Type Replaced: UNKNOWN Year Installed: UNKNOWN ☒ 3. Expanded System ☒ a. <25% Expansion ☐ b. >25% Expansion ☐ 4. Experimental System ☐ 5. Seasonal Conversion	THIS APPLICATION REQUIRES ☒ 1.No Rule Variance ☐ 2.First Time System Variance ☐ a. Local Plumbing Inspector Approval ☐ b. State & Local Plumbing Inspector Approval ☐ 3.Replacement System Variance ☐ a. Local Plumbing Inspector Approval ☐ b. State & Local Plumbing Inspector Approval ☐ 4.Minimum Lot Size Variance ☐ 5.Seasonal Conversion Permit	DISPOSAL SYSTEM COMPONENTS ☒ 1. Complete Non-Engineered System ☐ 2. Primitive System(graywater & alt toilet) ☐ 3. Alternative Toilet, specify: ☐ 4. Non-Engineered Treatment Tank (only) ☐ 5. Holding Tank, _____ gallons ☐ 6. Non-Engineered Disposal Field (only) ☐ 7. Separated Laundry System ☐ 8. Complete Engineered System(2000gpd+) ☐ 9. Engineered Treatment Tank (only) ☐ 10. Engineered Disposal Field (only) ☐ 11. Pre-treatment, specify: ☐ 12. Miscellaneous components
SIZE OF PROPERTY 13,392 ☒ SQ. FT. ☐ ACRES	DISPOSAL SYSTEM TO SERVE ☒ 1. Single Family Dwelling Unit, No. of Bedrooms: 4 ☐ 2. Multiple Family Dwelling, No of Units: _____ ☐ 3. Other: _____ (specify) Current Use ☐ Seasonal ☒ Year Round ☐ Undeveloped	TYPE OF WATER SUPPLY ☐ 1. Drilled Well ☐ 2. Dug Well ☐ 3. Private ☒ 4. Public ☐ 5. Other:
SHORELAND ZONING ☒ Yes ☐ No		

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

TREATMENT TANK ☒ 1. Concrete ☒ a. Regular ☐ b. Low Profile ☐ 2. Plastic ☐ 3. Other: CAPACITY: 2-4000 GAL.	DISPOSAL FIELD TYPE & SIZE ☐ 1. Stone Bed ☐ 2. Stone Trench ☒ 3. Proprietary Device ☐ a. Cluster array ☒ c.Linear ☒ b. Regular ☐ d. H-20 loaded ☐ 4. Other: SIZE: 1536 sq. ft. 32 ELJEN GSF UNITS	GARBAGE DISPOSAL UNIT ☐ 1. No ☒ 2. Yes ☐ 3. Maybe If Yes or Maybe, specify one below: ☐ a. Multi-compartment tank ☒ b. 2 tanks in series ☐ c. Increase in tank capacity ☒ d. Filter on tank outlet ADD FILTER TO SECOND TANK IN SERIES	DESIGN FLOW 360 gallons per day BASED ON: ☒ 1. Table 4A (dwelling unit(s)) ☐ 2. Table 4C (other facilities) SHOW CALCULATIONS for other facilities EXISTING 3 BEDROOM EXPANDED TO 4 BEDROOMS AT 90 GALLONS PER DAY EACH= 360 GPD ☐ 3. Section 4G (meter readings) ATTACH WATER-METER DATA LATITUDE AND LONGITUDE at center of disposal area Lat. 43 d 27 m 03 s Lon. 70 d 21 m 55.07 s If g.p.s., state margin of error
SOIL DATA & DESIGN CLASS PROFILE CONDITION 11 / A at Observation Hole # TB A Depth 20" of Most Limiting Soil Factor	DISPOSAL FIELD SIZING ☒ 1. Medium - 2.6 sq.ft./gpd ☐ 2. Medium-Large - 3.3 sq.ft./gpd ☐ 3. Large - 4.1 sq.ft./gpd ☐ 4. Extra-Large - 5.0 sq.ft./gpd	EFFLUENT/EJECTOR PUMP ☐ 1. Not required ☐ 2. May be required ☒ 3. Required Specify only for engineered systems: DOSE: _____ gallons	

SITE EVALUATOR STATEMENT

I certify that on 4/10/23 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the Subsurface Wastewater Disposal Rules (10-144A CMR 241).

Site Evaluator Signature 	SE # 352	Date 4/13/23
BRADY A. FRICK Site Evaluator Name Printed	(207) 839-5563 Telephone Number	INFO@ALBERTFRICK.COM E-mail Address

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Health and Human Services
Division of Environmental Health
(207) 287-2070 FAX (207) 287-4172

Town, City, Plantation BIDDEFORD	Street, Road Subdivision 6 SAND DOLLAR HAVEN	Owner's Name GREG BEAMON
SITE PLAN Scale 1" = 60 Ft. or as shown		SITE LOCATION PLAN (Attach Map from Maine Atlas Recommended)

NOTE: PROPERTY INFORMATION PER SURVEY BY DOW & COULOMBE, INC. DATED AUGUST 19, 2002

NOTE: PROPERTY INFORMATION PER SURVEY BY DOW & COULOMBE, INC. DATED AUGUST 19, 2002

ROUTE 9
 UNIV OF NE.
 OLD POOL RD.
 "THE POOL"
 SAND DOLLAR HAVEN
 HILLS BEACH ROAD
 ATLANTIC OCEAN
 SITE # 6

APPROX. EXISTING DISPOSAL SYSTEM

PAVED DRIVE

EXISTING DWELLING

ERP

TP

TB A

N/F COTE, PHYLLIS

EXISTING DWELLING

PROPOSED DISPOSAL AREA

TB A = 20" TO BEDROCK

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

Observation Hole TP 1 ☒ Test Pit ☐ Boring
 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0	LOAMY SAND		BROWN	
10				
20	FINE SAND	FRIABLE	YELLOWISH BROWN	
30	FINE & MEDIUM SAND		LIGHT OLIVE BROWN	
40	REFUSAL			
50				

Soil Classification
II
 Profile Condition

Slope
 _____ %

Limiting Factor
34"

☐ Ground Water
☐ Restrictive Layer
☒ Bedrock
☐ Pit Depth

Observation Hole TB A ☐ Test Pit ☒ Boring
 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0				
10				
20				
30				
40				
50				

Soil Classification

 Profile Condition

Slope
 _____ %

Limiting Factor
20"

☐ Ground Water
☐ Restrictive Layer
☒ Bedrock
☐ Pit Depth

Brady A. Fitch

Site Evaluator Signature

352
SE *

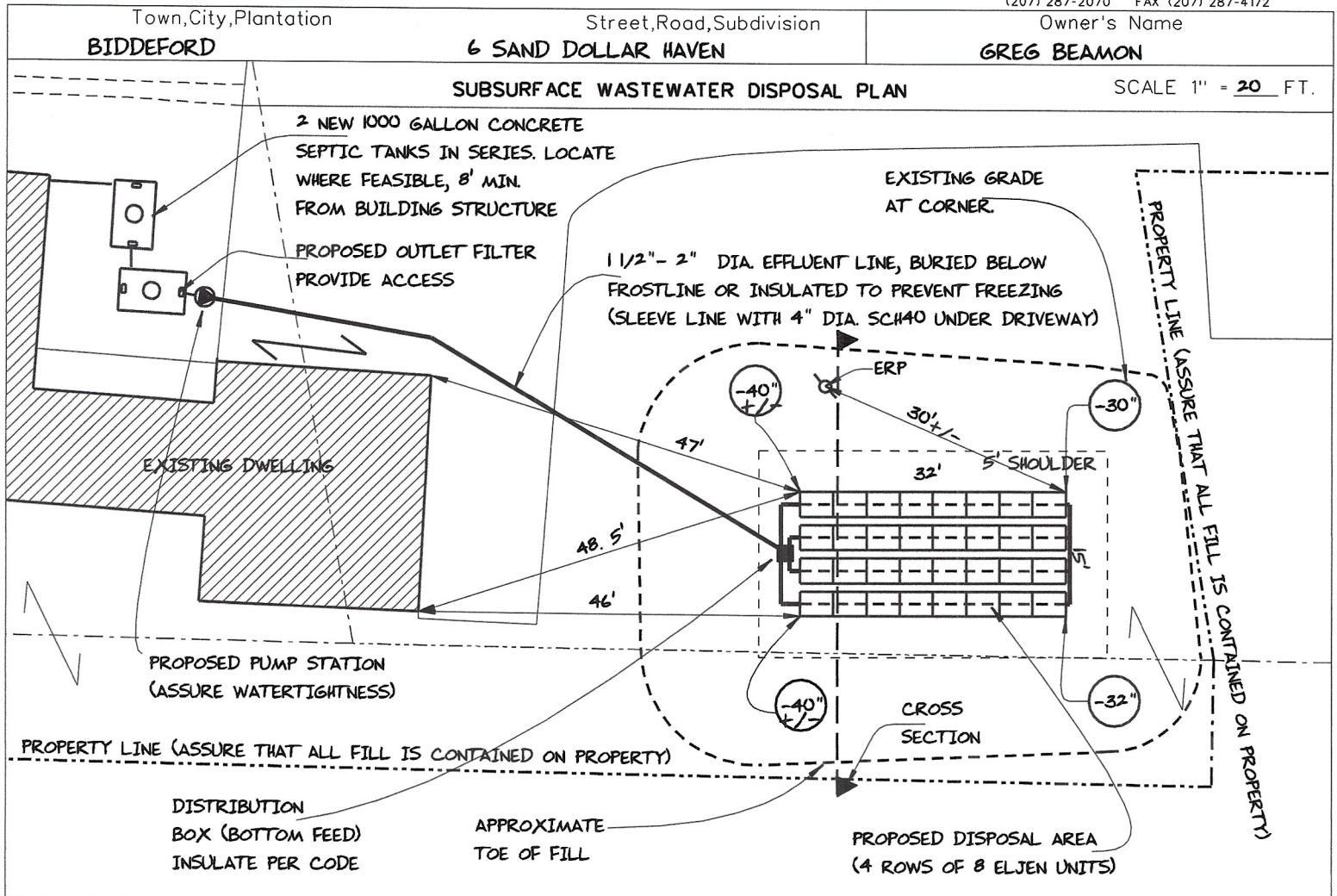
4/13/23

Date

Page 2 of 3
HHE-200 Rev. 02/11

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Health and Human Services
Division of Environmental Health
(207) 287-2070 FAX (207) 287-4172



FILL REQUIREMENTS

Depth of Fill (Upslope) : 27" - 29"
Depth of Fill (Downslope) : 37"
DEPTHS AT CROSS-SECTION (shown below)

CONSTRUCTION ELEVATIONS

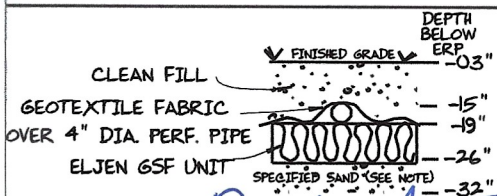
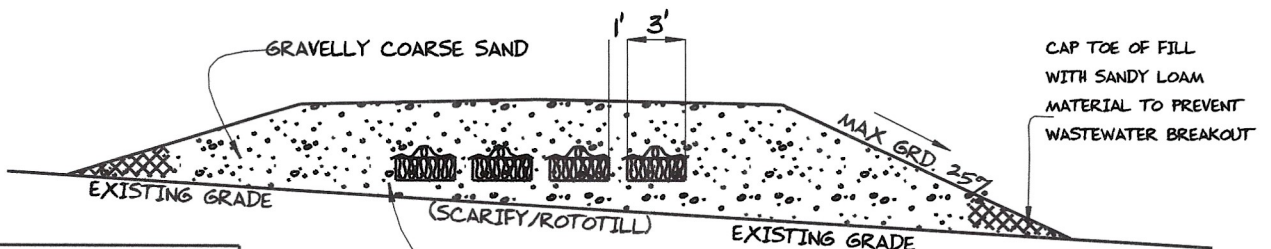
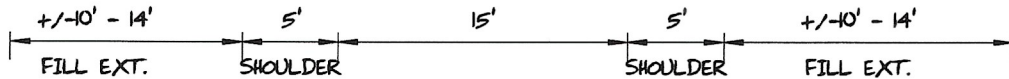
Finished Grade Elevation
Top of [] Proprietary Device
Bottom of Disposal Area

ELEVATION REFERENCE POINT

SEE
DETAIL
BELOW
Location & Description NAIL 38" ABOVE
BASE OF UTILITY POLE
Reference Elevation is: 0.0" or -----

DISPOSAL AREA CROSS SECTION

SCALE:
VERTICAL: 1" = 5 FT
HORIZONTAL: 1" = 10 FT



NOTE: SPECIFIED SAND: ASTM SPECS, WITH LESS THAN 10% PASSING A #400 SIEVE AND LESS THAN 5% PASSING A #200 SIEVE (THE SAND 6" UNDER, BETWEEN ROWS AND 1' AROUND THE PERIMETER OF THE GSF UNITS)

Bray A. Frick
Site Evaluator Signature

352
SE #

4/13/23
Date

Page 3 of 3
HHE-200 Rev. 02/11



BIDDEFORD

6 SAND DOLLAR HAVEN

GREG BEAMON

TOWN

LOCATION

APPLICANT'S NAME

1) The Plumbing and Subsurface Wastewater Disposal Rules adopted by the State of Maine, Division of Health and Human Services pursuant to 22 M.R.S.A. § 42 (the "Rules") are incorporated herein by reference and made a part of this application and shall be consulted by the owner/applicant, the system installer and/or building contractor for further construction details and material specifications. The system Installer should contact Albert Frick Associates, Inc. 839-5563, if there are any questions concerning materials, procedures or designs. The system installer and/or building contractor installing the system shall be solely responsible for compliance with the Rules and with all state and municipal laws and ordinances pertaining to the permitting, inspection and construction of subsurface wastewater disposal systems.

2) This application is intended to represent facts pertinent to the Rules only. It shall be the responsibility of the owner/applicant, system Installer and/or building contractor to determine compliance with and to obtain permits under all applicable local, state and/or federal laws and regulations (including, without limitation, Natural Resources Protection Act, wetland regulations, zoning ordinances, subdivision regulations, Site Location of Development Act and Minimum Lot Size law) before installing this system or considering the property on which the system is to be installed a "buildable" lot. It is recommended that a wetland scientist be consulted regarding wetland regulations. Prior to the commencement of construction/installation, the local plumbing inspector or Code Enforcement Officer shall inform the owner/applicant and Albert Frick Associates, Inc of any local ordinances which are more restrictive than the Rules in order that the design may be amended. All designs are subject to review by local, state and/or federal authorities. Albert Frick Associates, Inc.'s liability shall be limited to revisions required by regulatory agencies pursuant to laws or regulations in effect at the time of preparation of this application.

3) All information shown on this application relating to property lines, well locations, subsurface structures and underground facilities (such as utility lines, drains, septic systems, water lines, etc.) are based upon information provided by the owner/applicant and has been relied upon by Albert Frick Associates, Inc. in preparing this application. The owner/applicant shall review this application prior to the start of construction and confirm this information. Well locations on abutting properties but not readily visible above grade should be confirmed by the owner/applicant prior to system installation to assure minimum setbacks.

4) Installation of a garbage (grinder) disposal is not recommended. If one is installed, an additional 1000 gallon septic tank or a septic tank filter shall be connected in series to the proposed septic tank. Risers and covers should be installed over the septic tank outlet per the "Rules" to allow for easy maintenance of filter.

5) The septic tank should be pumped within two years of installation and subsequently as recommended by the pump service, but in no event should the septic tank be pumped less often than every three years.

The system user shall avoid introducing kitchen grease or fats into this system. Chemicals such as septic tank cleaners and/or chlorine or water treatment backwash and controlled or hazardous substances shall not be disposed of in this system. Additives such as yeast or enzymes are discouraged, since they have not been proven to extend system life.

6) All septic tanks, pump stations and additional treatment tanks shall be installed to prevent ground water and surface water infiltration. Risers and covers should be properly installed to provide access while preventing surface water intrusion to within 6" of a finished ground surface.

Vehicular traffic over disposal system is prohibited unless specifically designed with H-20 rated components.

BIDDEFORD

6 SAND DOLLAR HAVEN

GREG BEAMON

TOWN	LOCATION	APPLICANT'S NAME
------	----------	------------------

7) The actual waste water flow or number of bedrooms shall not exceed the design criteria indicated on this application without a re-evaluation of the system as proposed

8) The general minimum setbacks between a well (public or private) and septic system serving a single family residence is 100-300 feet, unless the local municipality has a more stringent requirement. A well installed by an abutter within the minimum setback distances prior to the issuance of a permit for the proposed disposal system may void this design.

9) When a gravity system is proposed: BEFORE CONSTRUCTION/INSTALLATION BEGINS, the system installer or building contractor shall review the elevations of all points given in this application and the elevation of the existing and/or proposed building drain and septic tank inverts for compatibility to minimum pitch requirements. In gravity systems, the invert of the septic tank(s) outlet(s) should be at least 4 inches above the invert of the distribution box outlet at the disposal area.

10) When an effluent pump is required: Pump stations should be sized per manufacturer's specifications to meet lift requirements and friction loss. Provisions shall be made to make certain that surface and ground water does not enter the septic tank or pump station, by sealing/grouting all seams and connections, and by placement of a riser and lid at or above grade. An alarm device warning of a pump failure shall be installed. Also, when pumping is required of a chamber system, install a 'T' connection in the distribution box and place 3 inches of stone or a splash plate in the first chamber. Insulate gravity pipes, pump lines and the distribution box as necessary to prevent freezing.

11) On all systems, remove the vegetation, organic duff and old fill material from under the disposal area and any fill extension. Additional fill beyond indicated on plan may be necessary to replace organic matter. On sites where the proposed system is to be installed in natural soil, scarify the bottom and sides of the excavated disposal area with a rake. Do not use wheeled equipment on the scarified soil surface. For systems installed in fill, scarify the native soil by roto-tilling or scarifying with teeth of backhoe to a depth of at least 8 inches over the entire disposal and fill extension area to prevent glazing and to promote fill bonding. Place fill in loose layers no deeper than 8 inches and compact before placing more fill (this ensures that voids and loose pockets are eliminated to minimize the chance of leakage or differential settling). Do not use wheeled equipment on the scarified soil area until after 12 inches of fill is in place. Keep equipment off proprietary devices. Divert the surface water away from the disposal area by ditching or shallow landscape swales.

12) Unless noted otherwise, fill shall be gravelly coarse sand, which contains no more than 5% fines (silt and clay). Crushed stone shall be clean and free of any rock dust from the crushing process.

13) Do not install systems on loamy, silty, or clayey soils during wet periods since soil smearing/glazing may seal off the soil interface.

14) Seed all filled and disturbed surfaces with perennial grass seed, with 4" min. soil or soil amendment mix suitable for growing, then mulch with hay or equivalent material to prevent erosion. Alternatively, bark or permanent landscape mulch may be used to cover system. Woody trees or shrubs are not permitted on the disposal area or fill extensions.

15) If an advanced wastewater treatment unit is part of the design, the system shall be operated and maintained per manufacturer's specifications.



Albert Frick Associates, Inc.

Soil Scientists & Site Evaluators

731 Fox Road Limerick, Maine 04048
(207) 839-5563



Michael Morse
Senior Environmental Consultant
MMorse@ArchipelagoNA.com

1 Dana Street
Portland, Maine 04101
(207) 558-0102

March 15, 2023

Planning Board
City of Biddeford
P.O. Box 586
Biddeford, ME 04005

Re: G L Beamon Trust, 6 Sand Dollar Haven: Non-Conforming Structure Relocation

Dear Members of the Biddeford Planning Board:

On behalf of my client G L Beamon Trust, please find our enclosed application for the Board's relocation determination of a partially non-conforming structure located at 6 Sand Dollar Haven. We respectfully request that this application be placed on the Planning Board's April 4th agenda for its full consideration of the matter.

Pursuant to Article XIV, Section 12(C)(4) of the City of Biddeford Code of Ordinances, whenever a non-conforming structure is removed by more than 50% of its market value and is proposed for reconstruction, such reconstruction is allowed provided that the Board determines that the footprint of the structure meets the coastal wetland setback to the greatest practical extent. Accordingly, the enclosed application requests the Board's determination.

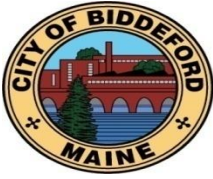
I have enclosed 7 complete copies of the application along with 3 additional rolled copies of the proposed plan. One of the additional plan copies is intended for signature and recordation at the Registry of Deeds. Payment of \$375 for the fees associated with this application is also enclosed.

Please don't hesitate to contact me with any questions. Thank you in advance for your consideration of this matter. I look forward to discussing this with you in the near future.

Sincerely,

Mike Morse

MM/lb
Enclosures
Cc: Greg Beamon

**City of Biddeford – Planning Department****Planning Board Application**

P.O. Box 586, 205 Main Street Biddeford, Maine 04005
207-284-9115

Type of Application:

☒ Shoreland Zoning Permit ☐ Site Plan Review ☐ Extraction
☐ Conditional Use Permit ☐ Subdivision ☐ Private Way
☐ Other: _____

Applicant Information:

Name: G L Beamon Trust
Mailing Address: 6 Sand Dollar Haven, Biddeford, ME 04005
Telephone: (603) 560-6516
Email: beamongreg5@gmail.com

What is your legal interest in the property?

☒ Owner ☐ Potential Buyer with Contract ☐ Lease/Rental Agreement

Owner's Information:

Name: same as above
Mailing Address: _____
Telephone: _____
Email: _____

Agent's Information:

Name: Mike Morse / Archipelago
Mailing Address: 1 Dana Street, Portland, ME 04101
Telephone: (207) 558-0102
Email: mmorse@ArchipelagoNA.com

Engineer/Surveyor's Information:

Name: Dow & Coulombe, Inc.
Mailing Address: 13 Park Street, Saco, ME 04072
Telephone: (207) 284-4521
Email: dowcoul@gwi.net

Project Location and Lot Information:

Street Address: 6 Sand Dollar Haven Drainage Watershed: Biddeford Pool
Tax Map: 55 Lot: 33
Current Zoning: CR Shoreland Zoning: LR / RP
Size of Lot: 26,352 () acres (x)s.f. Lot Frontage: _____
Existing Use of Property: Residential dwelling and improvements

Property currently serviced by:

☒ City Road ☐ Public Sewer ☒ Public Water ☐ Public Trash
☐ Private Road ☒ Septic System ☐ Private Well ☐ Private Hauler

Slope Conditions in Area of Construction (if applicable):

☐ Flat (0-3% slope) ☐ Rolling (3-8% slope) ☐ Hilly (8-15% slope) ☐ Steep (15%+ Slope)

Are there any wetlands or waterbodies on the site? ☐ (Yes) ☒ (No) if yes attach information

Is the project within the 100-year floodplain? ☐ (Yes) ☒ (No) if yes attach information

Do you plan to bring fill onto the lot? ☐ (Yes) ☒ (No) If yes attach information

Description of proposed use of property:

Project/Proposed Use:

The project proposes to remove and reconstruct the existing non-conforming structure, but keep the existing foundation.

City code requires the Planning Board review to determine whether the structure footprint can be relocated to meet the shoreline setback to the greatest practical extent. This review is the sole request for this application.

Property to be Serviced by:

☒ City Road ___ Public Sewer ☒ Public Water ___ Public Trash
___ Private Road ☒ Septic System ___ Private Well ___ Private Hauler

Limits of Disturbance: ___ n/a ___ () acres () s.f.

Net change in impervious cover: ___ n/a ___ () acres () s.f.

Is this project part of a larger project? ___ (Yes) ☒ (No)

Is the project proposing a new Private or Public Road? ___ (Yes, Private) ___ (Yes, Public) ☒ (No)

Is this project within the Urbanized Area/MS4 (see [City Drainage Map](#)) ___ (Yes) ☒ (No)

Is the project proposing any Stormwater facilities/BMPs? ___ (Yes) ☒ (No)

Will a Traffic Movement Permit (TMP) be required?: ___ (Yes) ☒ (No)

☒ If in a Shoreland Zone:

Percent of residential lot coverage (Max 20%): 25% (same as existing)

Percent of structure expansion (Max 30%): 0%

___ **If Subdivision Review, number of lots proposed:** _____

___ **If a Private Way is proposed, number of lots served:** _____

If Site Plan Review, you must provide the following information:

Total new square feet footprint of structure: _____

Total new square feet paving/parking: _____

Waiver Requests (attach details):

1. _____
2. _____
3. _____
4. _____
5. _____

Required Submittal Attachments:

- A. Letters of Approval
 - ___ Fire Department – Contact Chief or Deputy Chief – 282-9986
 - ___ Ability to Serve for Water Service – Maine Water – 282-1543
 - ___ Ability to Serve for Sewer Service – Engineering Department – Tom Milligan 284-9118
 - ___ Police Department – e-911 Road Name Designation – Contact Joanne Fisk 282-5127
- B. Letter to Planning Board describing project, Waiver requests, proposed improvements, addressing permit requirements, etc.
- C. Photographs of Site.
- D. Architectural renderings/drawings of proposed buildings, as required.
- E. Engineering Plans, as required.
- F. Stormwater Management Report, as required.

Fees (Due at time of Submission):

- \$75 Nonrefundable Administration Fee is required for every application.
- Refer to “Attachment A Fees and Charges” of the Land Development Regulations for more information. Consult with Planning Staff if you have questions.

Required Signatures:

By signing this application, as the foresaid applicant or authorized agent:

- I certify that I have read and completely understand the application;
- I certify that the information contained in this application and its attachments are true and correct;
- I understand that all information provided on this form and all other documents submitted as part of my proposal is a matter of public record;
- I understand that copies of this information may be supplied upon request to an interested party.
- I understand that additional funds may be required through the course of the review for special studies, legal review costs, and/or engineering review.
- I understand that by submitting an application I am not guaranteed a place on any particular agenda. I further understand that the City Planner will place me on an agenda for review when the application is deemed substantially complete.

Will the proposed project cause 1 acre or more of site disturbance?: __ (Yes) __ (No)

- If Yes, applicant is responsible for any required Maine Construction General Permits and shall comply with the requirements of DEP Chapter 500 Stormwater Regulations, as they apply.

Signature of Applicant: 

Date

3/13/2023

Signature of Property Owner: _____

Date _____

DIGITAL SUBMITTAL REQUIREMENTS FOR ALL SUBMITTALS:

- A) PDF OF SIGNED APPLICATION
- B) PDFs OF ALL DRAWING SETS AND OTHER REQUIRED SUBMITTAL ATTACHMENTS NOTED ABOVE

HARD-COPY SUBMITTAL REQUIREMENTS FOR PLANNING BOARD APPLICATIONS:

- A) SEVEN (7) FULL-SIZE PAPER COPIES OF DRAWING SETS

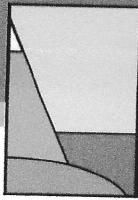
DIGITAL SUBMITTAL REQUIREMENTS FOR FINAL APPROVAL:

- A) INDIVIDUALLY NAMED PDFs OF EACH DRAWING (NOT A COMBINED PDF SET)
 - Individual Drawing PDF Naming Format: 'PROJECT/SHEETSET NAME_INDIVIDUAL DRAWING NAME.pdf'
- B) PDF COPIES OF ALL PERMIT APPROVALS, APPLICATIONS, REPORTS, NARRATIVES, LETTERS, ETC.
- C) FINAL CAD REFERENCE FILES IN DWG FORMAT (SURVEY & PROPOSED DESIGN LINEWORK)
 - All drawings & CAD reference files must be to-scale and within the following coordinate systems:
 - MAINE STATE PLANE WEST NAD83 (Horizontal Datum) & NAVD88 (Vertical Datum)

HARD-COPY SUBMITTAL REQUIREMENTS FOR FINAL APPROVAL:

- A) THREE (3) FULL-SIZE PAPER COPIES OF INDIVIDUAL DRAWINGS REQUIRING BOARD SIGNATURE
- B) ONE (1) FULL-SIZE PAPER COPY OF ENTIRE DRAWING SET FOR ENGINEERING RECORDS

PLEASE CONFIRM WITH PLANNING STAFF FOR CLARIFICATION



Michael Morse
Senior Environmental Consultant
MMorse@ArchipelagoNA.com

1 Dana Street
Portland, Maine 04101
(207) 558-0102

To whom it may concern:

Greg D. Beamon and Lori B. Beamon, Trustees of the G L Beamon Trust, owners of property located at 6 Sand Dollar Haven, Biddeford, Maine, hereby authorize Mike Morse and Archipelago, to submit permit applications on their behalf to the State of Maine Department of Environmental Protection and the City of Biddeford. Such permit applications are intended for the proposed removal and reconstruction of a residential structure located at 6 Sand Dollar Haven, Biddeford.

Signature: _____

Greg D. Beamon, Trustee of the
G L Beamon Trust

Date: 3/7/23

Signature: _____

Lori B. Beamon, Trustee of the
G L Beamon Trust

Date: 3/8/23

Location Map
6 Sand Dollar Haven
Biddeford, Maine

Biddeford Online Tax Map - Current



Gregtest 4

600ft

Maxar | Esri Community Maps Contributors, City of Biddeford, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Michael Morse
Senior Environmental Consultant
MMorse@ArchipelagoNA.com

1 Dana Street
Portland, Maine 04101
(207) 558-0102

G L Beamon Trust
Non-conforming Structure Relocation Review
6 Sand Dollar Haven, Biddeford

Project Description

The applicant purchased the subject property in January 2021. The parcel is developed with a residential dwelling, with attached garage, brick patios, walkways, landscape brick retaining walls, customary lawn and landscaped areas, and a driveway. The dwelling structure is located 89.6' feet from the upland edge of the coastal wetland as delineated by Dow & Coulombe, Inc. on September 21, 2022, and therefore that portion of the structure considered non-conforming under the Code. According to City Assessor records, the structure was constructed in 1924.

The project proposes to remove the existing dwelling portion of the structure and to reconstruct on the existing foundation. The garage portion of the structure is not proposed for removal. Such projects are allowed, subject to City Code, Article XIV, Section 12(C)(4), Reconstruction or Replacement. Specifically, the Code allows the removal and reconstruction of a non-conforming structure within the shoreland zone provided that the structure's footprint is relocated to be in conformity with the shoreline setback to the greatest practical extent, as determined by the Planning Board. Greatest practical extent relocation determination by the Planning Board is the exclusive purpose of this application.

Pursuant to the City's Code, when relocating a non-conforming structure in compliance with the shoreline setback to the greatest practical extent, the Planning Board shall consider 6 specific criteria (see Article XIV, Section 12 (C)(3)). These criteria include, and are limited to the following:

- 1) Size of the lot
- 2) Slope of the land
- 3) Potential for soil erosion
- 4) Location of other structures on the property and on adjacent properties
- 5) Location of the septic system and other on-site soils suitable for septic systems
- 6) The type and amount of vegetation to be removed to accomplish the relocation

Discussion

The subject lot is 26,352 square feet and approximately 85 feet wide. The existing and proposed structure location is affected by the minimum shoreline setback requirements, the minimum lot line setback requirements, as well as the location of the septic. In addition, approximately 10,841 square feet of the southerly portion of the lot is in the Resource Protection District that extends from Biddeford Pool to the south (the existing footprint of the house and a portion of the garage is in the Limited Residential District).

With respect to the 6 relocation criteria outlined in the Code, we provide the following:

- 1) Size of the lot: Considering the modest lot size, multiple minimum setback restrictions and location of the RP, there is no location for the structure to be relocated to better conform to the coastal wetland setback requirement without encroaching into the RP District, which is prohibited by the City's Code. In the attached site plan prepared by Dow & Coulombe dated March 14, 2023, we propose to tear down only the house portion of the structure, keeping the garage intact, and rebuilding on the existing foundation. Although this does not improve conformity with the coastal wetland setback, by keeping the structure in its current location and out of the RP, it does not increase the structure's non-conformity. Due to the location of the houses on the abutting properties, moving the structure back will also cause a larger portion of the reconstructed house, including the garage, to be closer to the abutting structures and may result in the obstruction of views.
- 2) Slope of the land: The slope of the land in the area of the lot that is subject to this proposal is not prohibitive to construction and does not interfere with the structure relocation as proposed.
- 3) Potential for soil erosion: There are no unique soil conditions or other soil features such that the relocation of the structure footprint would create risk of soil erosion from the lot.
- 4) Location of other structures on the property and on adjacent properties: The garage will remain and therefore is an impediment to the relocation of the dwelling further back from the coastal wetland. There are no other structures that are located on the property that would affect the proposed relocation. There are structures located on the adjacent properties to the east and west of the subject lot, and those abutting structures do impact the footprint relocation on the subject lot. Relocating the existing footprint any further back than the proposed relocation may impact the water views of the abutting structures.
- 5) Location of the septic system and other on-site soils suitable for septic systems: The property is currently served by a subsurface wastewater disposal system that is working

properly. The area of the lot that is between the existing garage location and the southerly lot line must be reserved to accommodate a future replacement septic system.

- 6) The type and amount of vegetation to be removed to accomplish the relocation:
Vegetation removal does not impede structure footprint relocation under the City Code.

Additionally, Article XIV, Section 12.C.4 of the Code directs the Planning Board to also consider the physical condition and type of foundation present as part of its relocation determination. The applicant has indicated that the existing foundation is in good condition and is suitable for re-use. Relocation of the structure, which is not possible as described above, would cause the existing serviceable foundation to be removed. This further supports reconstruction of the structure in its present location.

Relocation Summary

Due to the relatively small lot size, narrow lot width, minimum setback requirements established in the Code, location of the RP, and otherwise discussed above, it is our opinion that the existing footprint establishes the minimum shoreline setback to the greatest practical extent, and that relocating the structure is prohibited as more of the structure would be located closer to Biddeford Pool in the Resource Protection District. In addition, keeping the garage intact and utilizing the existing foundation will reduce the overall disturbance of the site. Accordingly, the applicant respectfully requests the Planning Board's concurrence that the structure footprint's greatest practical extent relocation on the lot remains at 89.6 feet from the upland edge of the coastal wetland and may be rebuilt on the existing foundation.

PHOTOS





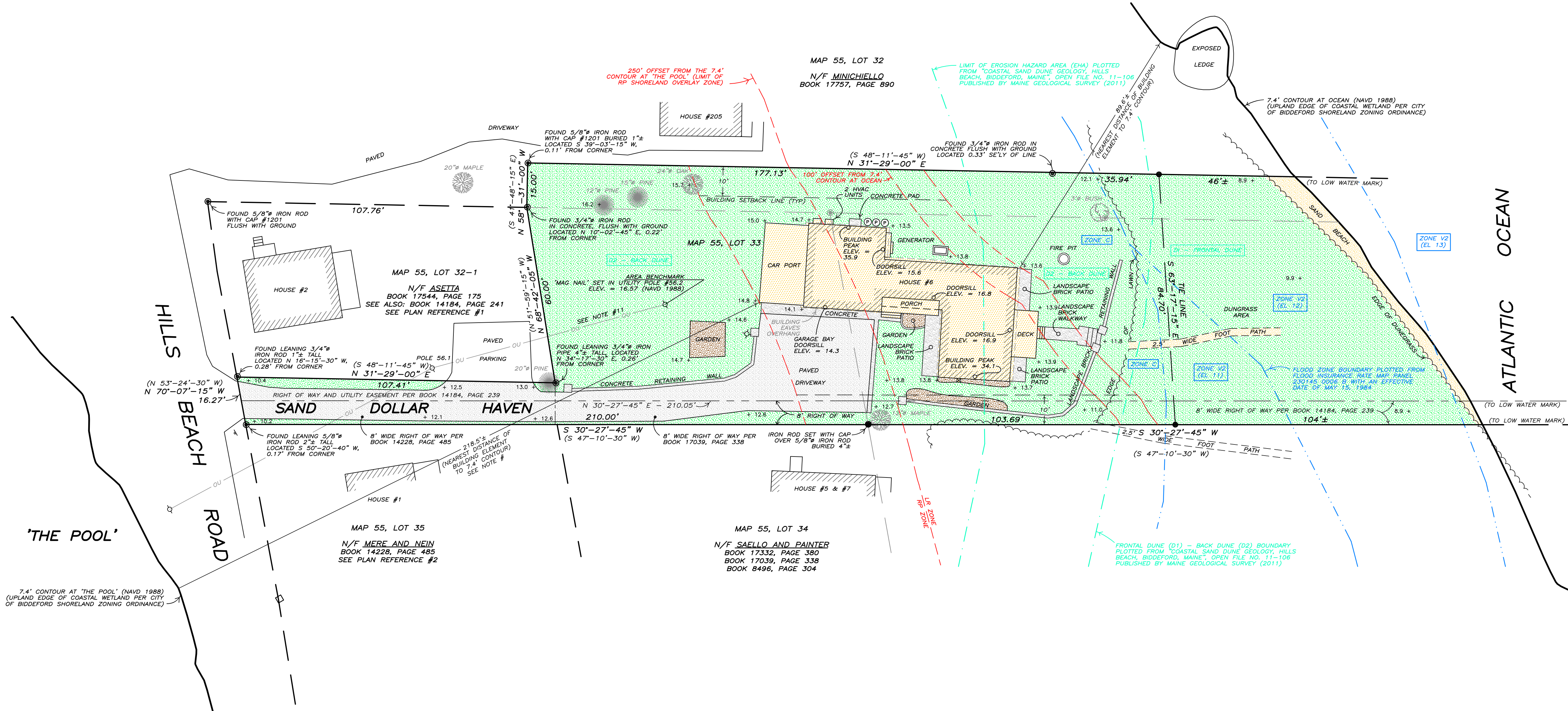
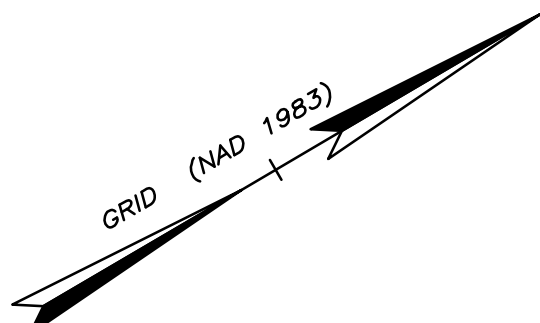
Aerial Photo / Google Earth
6 Sand Dollar Haven



Existing Conditions Plan

LEGEND :

- SET IRON ROD WITH CAP (UNLESS OTHERWISE NOTED)
- ⊕ LIGHT POST
- ⊕ UTILITY POLE
- ⊕ DIAMETER
- N/F NOW OR FORMERLY
- + 14.7 SPOT ELEVATION
- OU — OVERHEAD UTILITY LINES



LOT AREA COVERAGE NOTES :

- THE SUBJECT PARCEL IS LOCATED WITHIN THE COASTAL RESIDENTIAL CR ZONE, AND PARTLY WITHIN THE RESOURCE PROTECTION (RP) AND LIMITED RESIDENTIAL (LR) SHORELAND OVERLAY ZONES.
- THE AREA OF THE SUBJECT PARCEL TO THE 7.4' CONTOUR AT THE ATLANTIC OCEAN EQUALS 26,352± SQUARE FEET.
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NON-VEGETATED AREAS
(IN SQUARE FEET AND PERCENTAGE OF THE PARCEL AREA):

	WITHIN THE RP ZONE	WITHIN THE LR ZONE	ENTIRE PARCEL (TO THE 7.4' CONTOUR)
BUILDINGS, DECKS, PORCH, STEPS, LEAN-TO STOARAGE AND EAVES OVERHANG	791± (7.3%)	1,907± (12.3%)	2,698± (10.2%)
CONCRETE PADS/PATIOS*, CONCRETE WALKWAY, AND CONCRETE WALLS	230± (2.1%)	445± (2.9%)	675± (2.6%)
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TOTAL	4,221± (38.9%)	2,907± (18.7%)	7,128± (27.0%)

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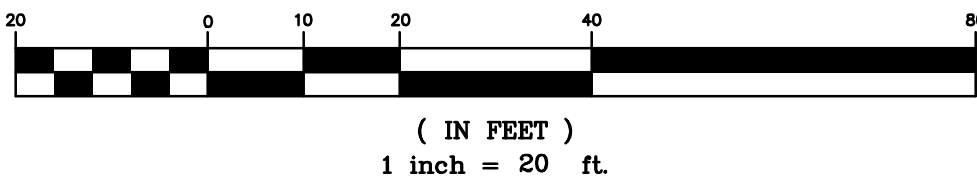
LOCUS DEED REFERENCES :

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SEE ALSO:
1. PAMELA TILLER ALLEN TO GREG D. BEAMON AND LORI B. BEAMON, TRUSTEES OF THE G L BEAMON TRUST JUNE 8, 2021 BOOK 18773, PAGE 352
2. MARION ELIZABETH MURPHY ERICKSON TO GREG D. BEAMON AND LORI B. BEAMON, TRUSTEES OF THE G L BEAMON TRUST MAY 28, 2021 BOOK 18773, PAGE 354
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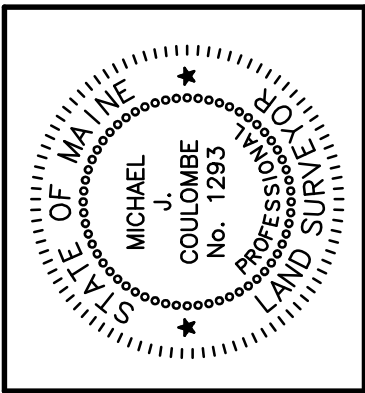
GRAPHIC SCALE



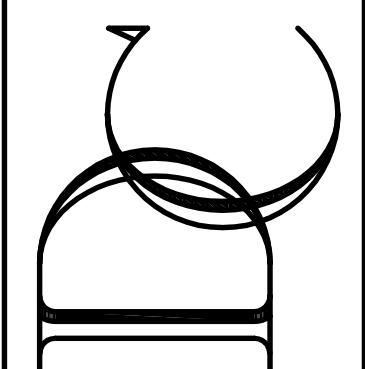
NOTES :

- TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS SURVEY CONFORMS TO STATE OF MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS' STANDARDS, CHAPTER 90, ADOPTED APRIL, 2001. EXCEPTIONS: A PROPOSED LEGAL DESCRIPTION WAS NOT PREPARED.
- AREA EQUALS 26,352± SQUARE FEET OR 0.604± ACRE TO THE 7.4' CONTOUR.
- SEE ACCOMPANYING SURVEYOR'S REPORT.
- INFORMATION IN PARENTHESES COPIED FROM DEED AND PLAN REFERENCES.
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- SEE EASEMENT DEED TO CENTRAL MAINE POWER COMPANY AND NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY RECORDED IN BOOK 2551, PAGE 94.

Date	
Revision	
No.	



PLAN SHOWING A BOUNDARY SURVEY MADE FOR GREG D. BEAMON AND LORI B. BEAMON, TRUSTEES OF THE G L BEAMON TRUST (MAILING ADDRESS AND PARCEL LOCATION: 6 SAND DOLLAR HAVEN) BIDDEFORD MAINE



Dow & Coulombe, Inc.
Land Surveyors & Land Planners Since 1864
13 Park Street, Saco, Maine 04072
Telephone: (207)284-4521 * Fax: (207)284-4522
info@dowcoulombe.com * www.dowcoulombe.com

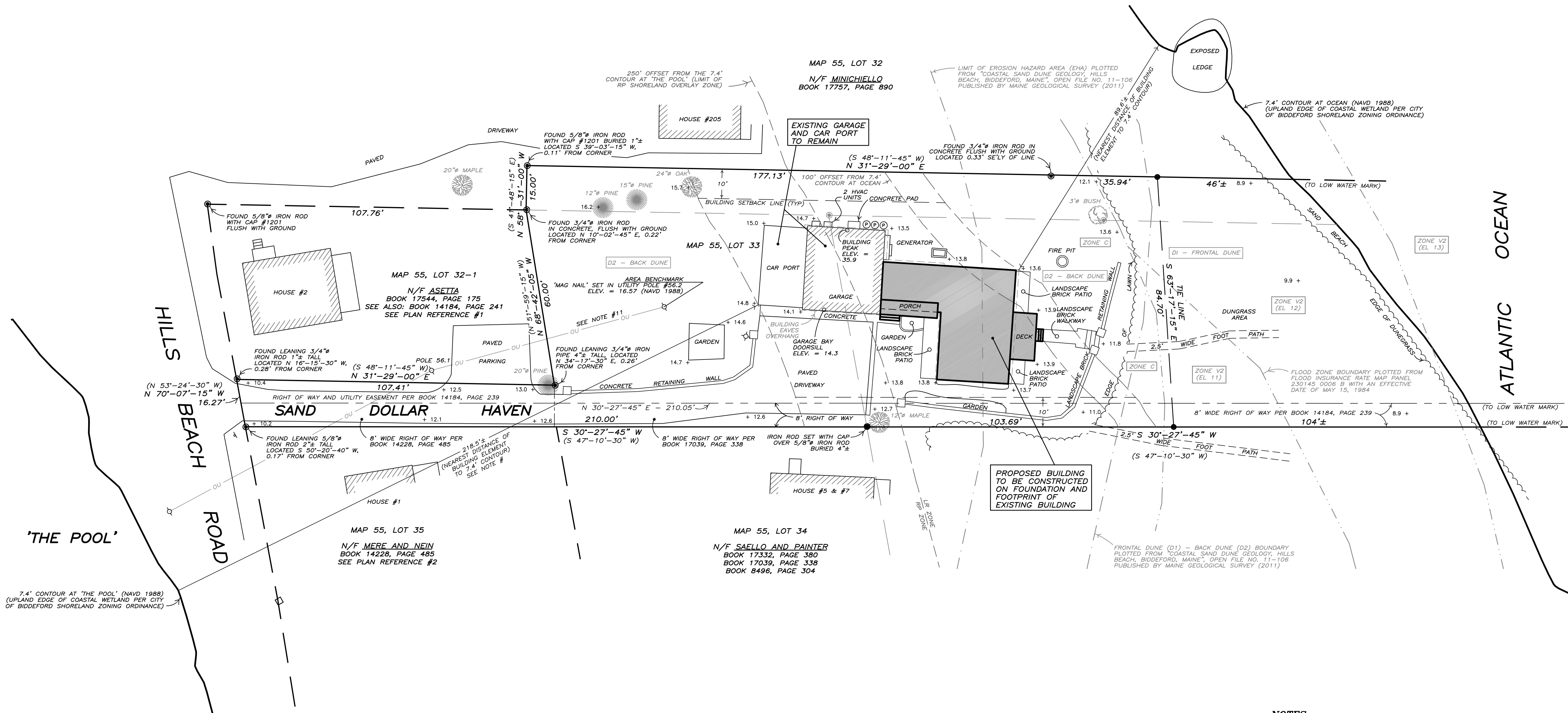
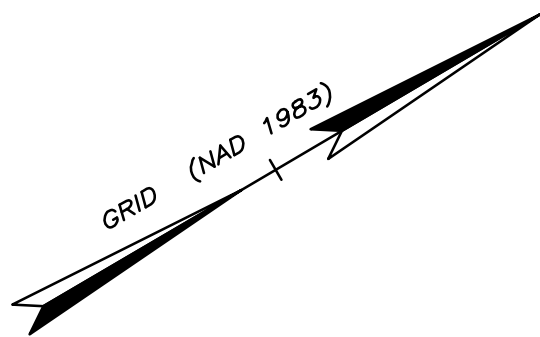
Date:	SEPTEMBER 21, 2022
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1" = 20'	AMS
Chk'd by:	Appv'd by:
PDD	MJC

SHEET 1 OF 1
ZONE-19
CDwgs2022\BEAMON19

Proposed Relocation Plan

LEGEND :

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APPROVED BY :

DATE :

CHAIRPERSON

CITY OF BIDDEFORD PLANNING BOARD

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JANUARY 13, 2021 BOOK 18525, PAGE 197
- SEE ALSO:
- PAMELA TILLER ALLEN
TO
GREG D. BEAMON AND LORI B. BEAMON, TRUSTEES OF THE
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JUNE 8, 2021 BOOK 18773, PAGE 352
 - MARION ELIZABETH MURPHY ERICKSON
TO
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NOTES :

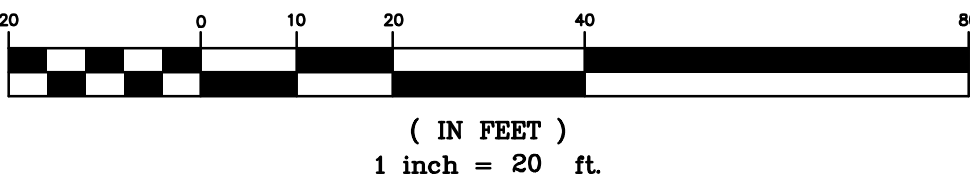
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YORK, ss. REGISTRY OF DEEDS
Received _____
at _____ h _____ m _____ A, and
Filed in Plan Book _____, Page _____
ATTEST: _____
Register

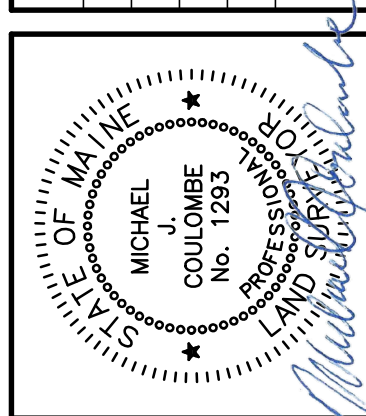
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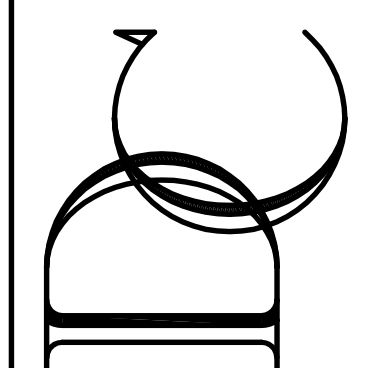
GRAPHIC SCALE



Date	
Revision	
No.	



SHORELAND ZONE SETBACK REQUIREMENT TO THE
GREATEST PRACTICAL EXTENT - SITE PLAN PREPARED FOR
GREG D. BEAMON AND LORI B. BEAMON, TRUSTEES OF THE
G L BEAMON TRUST
(MAILING ADDRESS AND PARCEL LOCATION: 6 SAND DOLLAR HAVEN)
BIDDEFORD MAINE



Dow & Coulombe, Inc.
Land Surveyors & Land Planners Since 1864
13 Park Street, Saco, Maine 04072
Telephone: (207)284-4521 * Fax: (207)284-4522
info@dowcoulombe.com * www.dowcoulombe.com

Date:
MARCH 14, 2023
H. Scale: Drawn by:
1" = 20' AMS
Chk'd by: Appr'd by:
PDD MJC
SHEET 1 OF 1

ZONE-19
CDWG#2023, BEAMON SITE PLAN-19

Deed

1002140128932

After recording return to:
Greg Beamon, Trustee
Lori Beamon, Trustee
21 Turtlerock Road
Windham, NH 03087

(space above reserved for recording information)

TRUSTEE'S DEED
Maine Statutory Short Form

KNOW ALL MEN BY THESE PRESENTS, That Reginald J. Cote, Trustee of the Reginald J. Cote Trust dated March 28, 2016, a Florida intervivos Trust with a mailing address of 917 Blue Stem Way SW, Stuart, Florida 34997, by the power conferred by law, and every other power, for consideration paid, grants to Greg D. Beamon and Lori B. Beamon, Trustees of the G L Beamon Trust dated February 8, 2018, having a mailing address of 21 Turtlerock Road, Windham, New Hampshire 03087, the land in the City of Biddeford, in the County of York and State of Maine, described as follows:

PARCEL ONE:

A certain lot or parcel with the buildings thereon situated at Hills Beach, so-called, in Biddeford, County of York and State of Maine, bounded and described as follows:

BEGINNING at a point on the sea wall where the land now or formerly of James Porter joins with that formerly of Harriet Sellers;

THENCE running along the sea wall southeasterly sixty-eight (68) feet to the land now or formerly of Thomas R. Brennan;

THENCE running two hundred and ten (210) feet southwesterly by the said Brennan land and land now or formerly of Edward Kimber to the public road (now called Hills Beach Road);

THENCE northwesterly by the said public road eight (8) feet to land now or formerly of Howard Jones;

THENCE northeasterly by Jones land one hundred five (105) feet;

THENCE sixty (60) feet northwesterly by Jones land to the Porter land;

THENCE one hundred and five (105) feet by Porter land to the seashore and point of beginning.

The aforesaid premises are subject to a right-of-way eight (8) feet wide and two hundred and ten (210) feet deep, running from the said road through the "pines" and to the sea wall, said right of

way being between the lots of Jones and Sellers on the one side and the lots of Brennan and Kimber on the other.

ALSO conveying herewith all the Grantor's right, title and interest in and to any land lying between the sidelines of the above-described premises as extended in a northeasterly direction to the point of intersection with low water mark of the Atlantic Ocean, subject to whatever rights may exist in others in and to the use of the same.

PARCEL TWO:

A certain lot or parcel of land situated northeasterly of but not adjacent to, the Hills Beach Road, so-called, in Biddeford, York County, Maine, lying adjacent to Parcel One above described and being more particularly bounded and described as follows:

BEGINNING at the southwesterly corner of land described in deed of Walter Stephen Sczymecki to Reginald J. Cote and Phyllis B. Cote dated August 4, 1995, and recorded in York Registry of Deeds in Book 7507, page 286, (and being Parcel One above described) which point lies at the intersection of land formerly of Jones, land formerly of Porter and land formerly of Sczymecki;

THENCE in a northeasterly direction by said land conveyed to Cote a distance of 105 feet to a point on the sea wall which marks the point of beginning in said deed from Sczymecki to Cote described aforesaid;

THENCE in a northwesterly direction a distance of 15 feet, more or less to a point;

THENCE in a southwesterly direction and by a line which parallel to and 15 feet distant from the first line described above a distance of 105 feet, more or less to a point;

THENCE in a southeasterly direction a distance of 15 feet, more or less, to the point of beginning.

ALSO conveying herewith all the Grantor's right, title and interest in and to any land lying between the sidelines of the above-described premises (the boundaries having a length of 105 feet) as extended in a northeasterly direction to the point of intersection with low water mark of the Atlantic Ocean, subject to whatever rights may exist in others in and to the use of the same.

The above described premises are conveyed subject to rights of others in and to the use of Sand Dollar, the right of way and easement providing access to the above described premises from Hills Beach Road and the easements created in deed of Reginald J. Cote and Phyllis B. Cote to Phyllis B. Cote dated August 6, 2004, and recorded in York Registry of Deeds in Book 14184, page 239.

BEING the same premises conveyed to Reginald J. Cote, Trustee of the Reginald J. Cote Trust dated March 28, 2016 by virtue of a deed from Reginald J. Cote and Phyllis B. Cote dated March 18, 2019 and recorded in the York Registry of Deeds in Book 17913, Page 854.

PARCEL THREE:

A certain lot or parcel of land situated at Hills Beach in said Biddeford on the southwesterly side of Hills Beach Road, so-called, and being more particularly bounded and described as follows:

BEGINNING on said road at the Easterly corner of a parcel of land conveyed by one Blanchette to Provencal by deed dated September 26, 1980, and recorded in York Registry of Deeds in Book 2705, page 166;

THENCE South 39° 20' 03" West by said Provencal land to high water mark of Biddeford Pool;

THENCE beginning again at the original point of beginning at Provencal's easterly corner on said road;

THENCE by said road South 50° 39' 30" East 16.10 feet and South 53° 21' East to an iron pin near said water mark and to land of owner unknown;

THENCE generally westerly by said high water mark to said Provencal land.

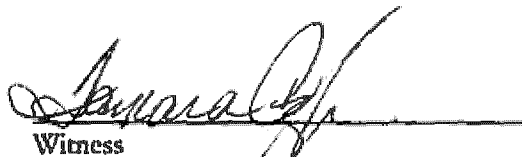
TOGETHER with whatever right, title and interest Grantor may have in the tidal flats of Biddeford Pool adjacent to said parcel.

Being a portion of the same premises conveyed to Phyllis B. Cote by deed of DEBRAL 1991 REALTY TRUST dated June 7, 1996, and recorded in York Registry of Deeds in Book 7872, page 270. Said premises are contained within the bounds of Item 3 of the premises conveyed to Reginald J. Cote, Trustee of the Reginald J. Cote Trust dated March 28, 2016 by virtue of a deed from Reginald J. Cote and Phyllis B. Cote dated March 18, 2019 and recorded in the York Registry of Deeds in Book 17913, Page 854.

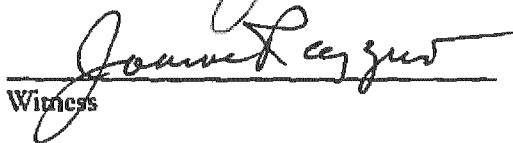
IN WITNESS WHEREOF the Reginald J. Cote Trust has caused this instrument to be signed in its name and behalf by Reginald J. Cote, its Trustee duly authorized this 22nd day of January, 2021.

SIGNED, SEALED AND DELIVERED
IN PRESENCE OF:

Reginald J. Cote Trust


Witness

By: 
Reginald J. Cote, its Trustee duly authorized


Witness

STATE OF FLORIDA
COUNTY OF Martin

January 13, 2021

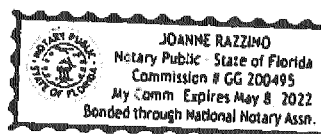
Personally appeared the above named Reginald J. Cote, Trustee of the Reginald J. Cote Trust dated March 28, 2016, a Florida inter vivos Trust and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Trust.

Before me,

Joanne Razzino
Notary Public/Attorney-At-Law

Print Name: Joanne Razzino

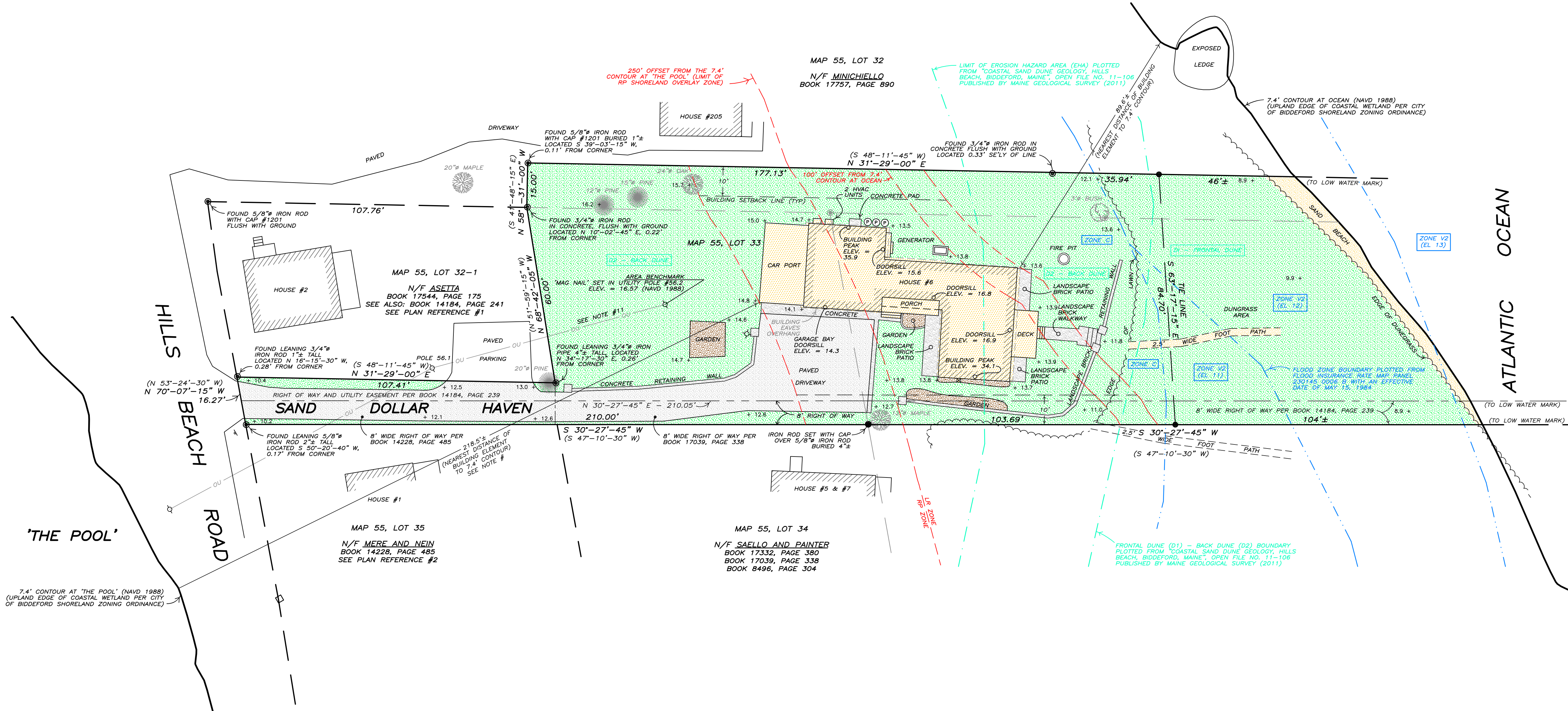
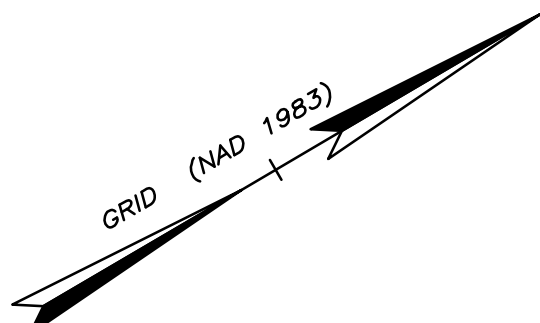
My Commission Expires: 5/8/22



1/7225-4012/deed

LEGEND :

- SET IRON ROD WITH CAP (UNLESS OTHERWISE NOTED)
- ⊕ LIGHT POST
- ⊕ UTILITY POLE
- ⊕ DIAMETER
- N/F NOW OR FORMERLY
- + 14.7 SPOT ELEVATION
- OU — OVERHEAD UTILITY LINES



LOT AREA COVERAGE NOTES :

- THE SUBJECT PARCEL IS LOCATED WITHIN THE COASTAL RESIDENTIAL CR ZONE, AND PARTLY WITHIN THE RESOURCE PROTECTION (RP) AND LIMITED RESIDENTIAL (LR) SHORELAND OVERLAY ZONES.
- THE AREA OF THE SUBJECT PARCEL TO THE 7.4' CONTOUR AT THE ATLANTIC OCEAN EQUALS 26,352± SQUARE FEET.
- THE AREA OF THE SUBJECT PARCEL WITHIN THE RP SHORELAND OVERLAY ZONE EQUALS 10,841± SQUARE FEET.
- THE AREA OF THE SUBJECT PARCEL WITHIN THE LR SHORELAND OVERLAY ZONE EQUALS 15,511± SQUARE FEET.

NON-VEGETATED AREAS
(IN SQUARE FEET AND PERCENTAGE OF THE PARCEL AREA):

	WITHIN THE RP ZONE	WITHIN THE LR ZONE	ENTIRE PARCEL (TO THE 7.4' CONTOUR)
BUILDINGS, DECKS, PORCH, STEPS, LEAN-TO STOARAGE AND EAVES OVERHANG	791± (7.3%)	1,907± (12.3%)	2,698± (10.2%)
CONCRETE PADS/PATIOS*, CONCRETE WALKWAY, AND CONCRETE WALLS	230± (2.1%)	445± (2.9%)	675± (2.6%)
PAVED DRIVEWAY	3,196± (29.5%)	4± (<0.05%)	3,200± (12.1%)
SAND BEACH	N/A	505± (3.2%)	505± (1.9%)
HVAC*, PROPANE TANKS, GENERATOR, AND FIRE-PIT	4± (<0.05%)	46± (0.3%)	50± (0.2%)
TOTAL	4,221± (38.9%)	2,907± (18.7%)	7,128± (27.0%)

* EXCLUDES ANY OVERLAPPING AREAS WITH BUILDING EAVES OVERHANG

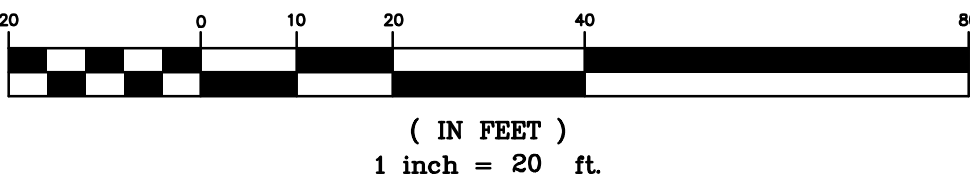
LOCUS DEED REFERENCES :

- REGINALD J. COTE, TRUSTEE OF THE REGINALD J. COTE TRUST TO GREG D. BEAMON AND LORI B. BEAMON, TRUSTEES OF THE G L BEAMON TRUST JANUARY 13, 2021 BOOK 18525, PAGE 197
SEE ALSO:
1. PAMELA TILLER ALLEN TO GREG D. BEAMON AND LORI B. BEAMON, TRUSTEES OF THE G L BEAMON TRUST JUNE 8, 2021 BOOK 18773, PAGE 352
2. MARION ELIZABETH MURPHY ERICKSON TO GREG D. BEAMON AND LORI B. BEAMON, TRUSTEES OF THE G L BEAMON TRUST MAY 28, 2021 BOOK 18773, PAGE 354
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14. ANN LOWELL SMALL TO GREG D. BEAMON AND LORI B. BEAMON, TRUSTEES OF THE G L BEAMON TRUST OCTOBER 25, 2021 BOOK 18861, PAGE 516
15. STEVEN A. SPIERS TO GREG D. BEAMON AND LORI B. BEAMON, TRUSTEES OF THE G L BEAMON TRUST OCTOBER 25, 2021 BOOK 18861, PAGE 518

PLAN REFERENCES :

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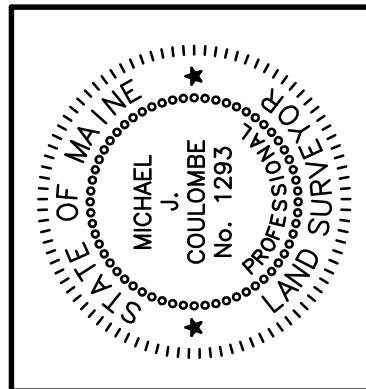
GRAPHIC SCALE



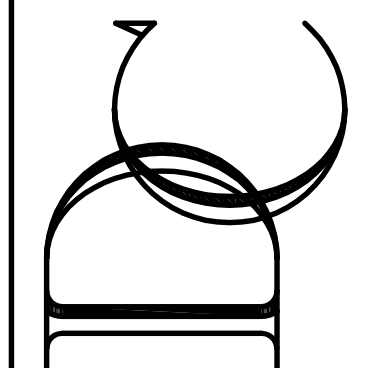
NOTES :

- TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS SURVEY CONFORMS TO STATE OF MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS' STANDARDS, CHAPTER 90, ADOPTED APRIL, 2001. EXCEPTIONS: A PROPOSED LEGAL DESCRIPTION WAS NOT PREPARED.
- AREA EQUALS 26,352± SQUARE FEET OR 0.604± ACRE TO THE 7.4' CONTOUR.
- SEE ACCOMPANYING SURVEYOR'S REPORT.
- INFORMATION IN PARENTHESES COPIED FROM DEED AND PLAN REFERENCES.
- ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 AS DERIVED FROM RTK GPS OBSERVATIONS (EXCEPTING THE V2 FLOOD ZONE ELEVATIONS SHOWN THAT REFER TO NATIONAL GEODETIC VERTICAL DATUM OF 1929).
- THE TIE LINE SHOWN ON THIS PLAN DOES NOT REPRESENT A BOUNDARY LINE. THE PURPOSE OF THE TIE LINE IS TO SHOW THE MATHEMATICAL RELATIONSHIP BETWEEN THE MARKERS SHOWN AT THE ENDS OF THE TIE LINE.
- THE LINE OF HILLS BEACH ROAD IS AN APPARENT LINE PER PLAN REFERENCE #1.
- THE BUILDING HEIGHT WAS CALCULATED BY SUBTRACTING THE MEAN ELEVATION OF THE DOWNHILL SIDE OF THE STRUCTURE FROM THE HIGHEST ROOF PEAK ELEVATION PER THE CITY OF BIDDEFORD SHORELAND ZONING DEFINITION (35.9' - [13.6' + 13.7']/2 = 22.3±).
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- THE 218.5' OFFSET LINE FROM THE 7.4' CONTOUR AT 'THE POOL' REPRESENTS THE NEAREST DISTANCE FROM THE STRUCTURE TO THE 7.4' CONTOUR. THE CITY OF BIDDEFORD PLANNING BOARD DETERMINES THE GREATEST PRACTICAL EXTENT.
- SEE EASEMENT DEED TO CENTRAL MAINE POWER COMPANY AND NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY RECORDED IN BOOK 2551, PAGE 94.

Date	
Revision	
No.	



PLAN SHOWING A BOUNDARY SURVEY MADE FOR GREG D. BEAMON AND LORI B. BEAMON, TRUSTEES OF THE G L BEAMON TRUST (MAILING ADDRESS AND PARCEL LOCATION: 6 SAND DOLLAR HAVEN) BIDDEFORD MAINE



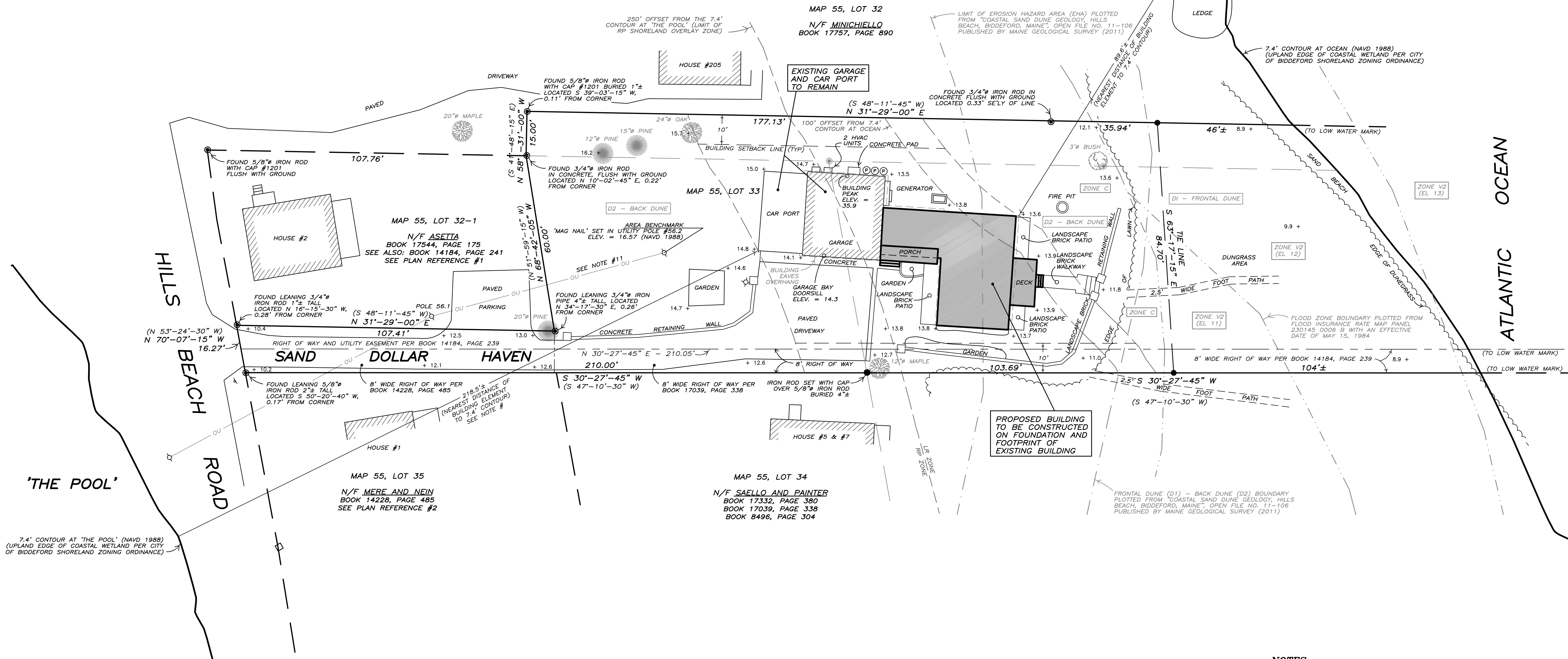
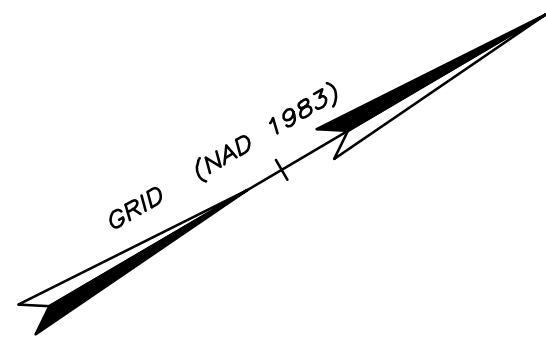
Dow & Coulombe, Inc.
Land Surveyors & Land Planners Since 1864
13 Park Street, Saco, Maine 04072
Telephone: (207)284-4521 * Fax: (207)284-4522
info@dowcoulombe.com * www.dowcoulombe.com

Date:	SEPTEMBER 21, 2022
H. Scale:	Drawn by:
1" = 20'	AMS
Chk'd by:	Appv'd by:
PDD	MJC

ZONE-19
CDwgs2022\BEAMON19

LEGEND :

- SET IRON ROD WITH CAP
(UNLESS OTHERWISE NOTED)
- ⊕ LIGHT POST
- ⊕ UTILITY POLE
- ⊕ DIAMETER
- N/F NOW OR FORMERLY
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- OU — OVERHEAD UTILITY LINES



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JANUARY 13, 2021 BOOK 18525, PAGE 197
- SEE ALSO:
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OCTOBER 25, 2021 BOOK 18861, PAGE 516
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OCTOBER 25, 2021 BOOK 18861, PAGE 518

NOTES :

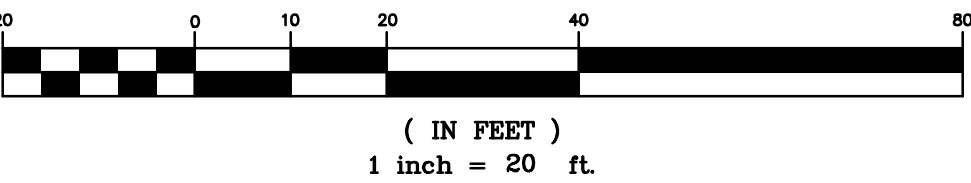
1. BOUNDARY INFORMATION COPIED FROM PLAN REFERENCE #3, A SURVEY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, CONFORMS TO THE STATE OF MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS' STANDARDS: CHAPTER 90, ADOPTED APRIL, 2001. EXCEPTIONS: A PROPOSED LEGAL DESCRIPTION WAS NOT PREPARED.
2. AREA EQUALS 26,352± SQUARE FEET OR 0.604± ACRE TO THE 7.4' CONTOUR.
3. THE SUBJECT PARCEL OF LAND IS LOCATED WITHIN THE COASTAL RESIDENTIAL (CR) ZONE. PORTIONS OF THE SUBJECT PARCEL ARE LOCATED WITHIN THE RESOURCE PROTECTION (RP) AND THE LIMITED RESIDENTIAL (LR) OVERLAY DISTRICTS.
4. INFORMATION IN PARENTHESES COPIED FROM DEED AND PLAN REFERENCES.
5. ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 AS DERIVED FROM RTK GPS OBSERVATIONS (EXCEPTING THE V2 FLOOD ZONE ELEVATIONS SHOWN THAT REFER TO NATIONAL GEODETIC VERTICAL DATUM OF 1929).
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11. SEE EASEMENT DEED TO CENTRAL MAINE POWER COMPANY AND NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY RECORDED IN BOOK 2551, PAGE 94.

YORK, ss. REGISTRY OF DEEDS
Received _____
at _____ h _____ m _____ A, and
Filed in Plan Book _____, Page _____
ATTEST: _____
Register

PLAN REFERENCES :

1. " PLAN SHOWING A BOUNDARY SURVEY MADE FOR REGINALD J. & PHYLLIS B. COTE", DATED AUGUST 19, 2002, REVISED THRU OCTOBER 10, 2002 BY DOW & COULOMBE, INC.
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3. " PLAN SHOWING A BOUNDARY SURVEY MADE FOR GREG D. BEAMON AND LORI B. BEAMON, TRUSTEES OF THE G L BEAMON TRUST", DATED SEPTEMBER 21, 2022 BY DOW & COULOMBE, INC.

GRAPHIC SCALE



LOT AREA COVERAGE NOTES :

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NON-VEGETATED AREAS
(IN SQUARE FEET AND PERCENTAGE OF THE PARCEL AREA):

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BUILDINGS, DECKS, PORCH, STEPS, LEAN-TO STOARAGE AND EAVES OVERHANG	791± (7.3%)	1,907± (12.3%)	2,698± (10.2%)
CONCRETE PADS/PATIOS*, CONCRETE WALKWAY, AND CONCRETE WALLS	230± (2.1%)	445± (2.9%)	675± (2.6%)
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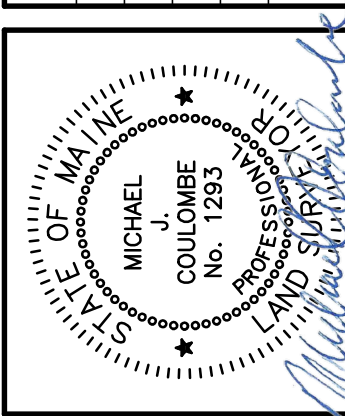
APPROVED BY :

DATE :

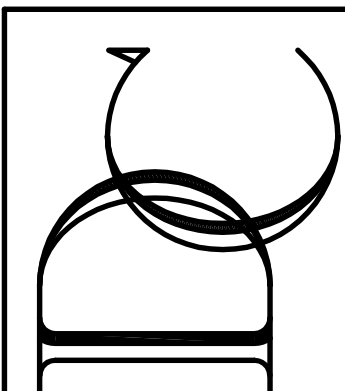
CHAIRPERSON

CITY OF BIDDEFORD PLANNING BOARD

Date	
Revision	
No.	



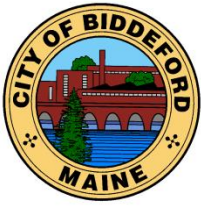
SHORELAND ZONE SETBACK REQUIREMENT TO THE GREATEST PRACTICAL EXTENT - SITE PLAN PREPARED FOR GREG D. BEAMON AND LORI B. BEAMON, TRUSTEES OF THE G L BEAMON TRUST
(MAILING ADDRESS AND PARCEL LOCATION: 6 SAND DOLLAR HAVEN) BIDDEFORD MAINE



Dow & Coulombe, Inc.
Land Surveyors & Land Planners Since 1864
13 Park Street, Saco, Maine 04072
Telephone: (207)284-4521 * Fax: (207)284-4522
info@dowcoulombe.com * www.dowcoulombe.com

Date: MARCH 14, 2023
H. Scale: Drawn by: AMS
1" = 20'
Chk'd by: App'r'd by: MJC
PDD
SHEET 1 OF 1

ZONE-19
CDWG#2023, BEAMON SITE PLAN-19



CITY OF BIDDEFORD

Planning and Development Department

David C.M. Galbraith
Deputy Director/City Planner
205 Main Street
P.O. Box 586
Biddeford, ME 04005
(207) 284-9115

David.Galbraith@biddefordmaine.org

PLANNING BOARD STAFF REPORT

TO: Chair Patoine and Members of the Biddeford Planning Board

FROM: David C.M. Galbraith, Deputy Director/City Planner

EC: Christopher Garland, AIA, on behalf of Caleb Johnson Studio/Woodhull Via email
(Chris.garland@woodhullmaine.com)

DATE: April 27, 2023

RE: **2023.23 Greatest Practical Extent for Peter Cameron Hyzer & Jennifer Hyzer to rebuild an existing house at 280 Hills Beach Road-Building 1 (Tax Map 56, Lot 18) in the Shoreland CR/RP zone.**

MEETING DATE: May 3, 2023 at 6:00 PM

1. INTRODUCTION

Mr. & Mrs. Hyzer would like to partially demolish their existing home and rebuild it utilizing the general footprint of the existing structure. A new subsurface wastewater disposal system is proposed along with exterior improvements of the site. This same application was previously before the Planning Board (Case # 2021.57) who granted the Applicant's determination and received approval on January 5, 2022.

The project site is a conforming lot located within the Resource Protection overlay (RP) of the Shoreland Zone and the Coastal Residential (CR) base zone. It is bordered by Hills Beach Rd and residential properties to the north east, and Biddeford Pool/The Gut in all other directions. There are two residential structures on the property (Building #1 and Building #2), both of which are nonconforming. The applicant seeks to demolish a portion of Building #1 and reconstruct it using the existing footprint, and relocate the existing subsurface wastewater disposal system. The Planning Board must determine the setbacks from the shoreline of Biddeford Pool to the *greatest practical extent*.

Regretfully, the Applicant's did not pull the required development permits and the approval has since expired (January 5, 2022). This new application (2023.23) is being presented by Christopher Garland, AIA, on behalf of Caleb Johnson Studio/Woodhull which also involves redevelopment of property at 280 Hills Beach Road, building 1, located within the Coastal Residential and Resource Protection Zone. The proposed application is the same information as previously reviewed and approved by the Planning Board and the Applicants are seeking "re-approval" of a previously approved plan.

COMPLIANCE WITH CITY ORDINANCES

The application is before the Planning Board for reconstruction of a nonconforming building within the Shoreland Zone per the Shoreland Zoning Ordinance (Article XIV, Section 12.C.4 *Reconstruction*). As

Case 2023.23: 280 Hills Beach Road, Greatest Practical Difficulty (Tax Map 56, Lots 18) in the Coastal Residential and Resource Protection Shoreland Overlay zone.

Planning Board Hearing date: May 3, 2023

outlined in this provision, the Planning Board is required to determine the greatest practical extent the distance the new structure can be located from the protected resource, as directed in Section 12.C.3 *Relocation*.

The existing Building #1 is located 116 feet from the Highest Annual Tide line (HAT) of The Gut, within the 250-foot setback required in the Resource Protection (RP) district. When determining the greatest practical extent, the Board must consider factors outlined in Section 12.C.3 and included below:

- The size of the lot,
- The slope of the land,
- The potential for soil erosion,
- The location of other structures on the property and on adjacent properties
- The location of the septic system and other on-site soils suitable for septic systems,
- The type and amount of vegetation to be removed to accomplish the relocation.

The applicant is proposing to reconstruct Building #1 utilizing the existing footprint. Since only a portion of the building will be demolished, any relocation of the new construction would result in significant ground disturbance, as the entirety of the building would need to be relocated as well. Due to the topography and composition of the site, significant fill and/or blasting may be necessary if the existing Building #1 footprint is relocated further from the HAT line. If the Planning Board concurs, the applicant should clearly note on the final plan that the existing southernmost corner of Building #1, located 116' from the HAT, is the required setback to the shoreline to the greatest practical extent. On behalf of the Applicant, Mr. Garland submitted a detailed overview of the project, in support of the request which is provided below in italics:

As agents for Peter Cameron Hyzer and Jennifer Hyzer, we are re-applying for Greatest Practical Extent at 280 Hills Beach Road in Biddeford. This is an application for Greatest Practical Extent due to the expiration of the previous ruling. Greatest Practical Extent for this property was originally presented to the Board on January 5th, 2022, with the Board Approving the application, and establishing 116'-0' from the Highest Annual Tide as the Greatest Practical Extent, as that dimension is the closest the Existing Structure is to the Resource. We are not requesting any modifications to the previous ruling.

Included in this application however, is a revised subsurface wastewater disposal system, which is designed to combine both the existing Guest House (Structure #2, and to be modified Structure #1) into one system. This was revised due to a failure of the Structure #2's system, which was capped and removed in the summer of 2023. Our client's original goal remains: to demolish a portion of a structure (Building #1), and rebuild it to meet modern standards with the intent of utilizing the structure's general footprint to minimize soil, vegetation, utility and resource disturbance to the site. Partial demolition of the structure has since occurred, (Permit #22-06-424, dated 6/8/22), due to burst pipes causing significant damage to the structure in late winter 2022. Maximum height requirements for the project are established by the portion of the structure that is remaining. The previously approved 116'-0" Greatest Practical Extent is still relevant, as that distance is established by the portion of Structure #1 which remains. A subsurface wastewater disposal system is proposed as a part of this project, which will replace the existing, pre-1974 system. Permits for the new structure have been approved by Code Enforcement with their issuance being contingent upon the re-approval of this Greatest Practical Extent Application.

The property is zoned within the Resource Protection (RP) overlay of the Shoreland Zone within the Coastal Residential Zoning (CR). The entirety of the property exists within the RP Overlay. The property is conforming due to lot coverage (maximum allowed of 20% versus actual of 13%). The Main House structure (Building #1) itself is not conforming due to the setbacks from Highest Annual Tide (minimum required of 250'-0" in the RP overlay versus actual of 116'-0" +/- at the minimum) but conforms to all yard setbacks. The

Case 2023.23: 280 Hills Beach Road, Greatest Practical Difficulty (Tax Map 56, Lots 18) in the Coastal Residential and Resource Protection Shoreland Overlay zone.

Planning Board Hearing date: May 3, 2023

Guest House (Building #2) is non-conforming due to the side yard setback (minimum required of 25'-0" versus actual of 14'-8.4") as well as the 250'-0" setback for the RP Overlay. No work is being proposed on the Guest House (Building #2). No portion of the Property exists beyond 250'-0" from the Highest Annual Tide.

The property is bound by Hills Beach Road and privately owned lots to the north east. Local code determines a 25-foot front yard setback requirement from the minor ROW. Our client does not propose building beyond this 25' line. To the west and south, the property is constrained by the High Water mark (7.4' contour NAVD88) from The Pool. To the east, the property is constrained by the High Water mark (see above) from The Gut. Building #1 is 116'-0"+/-" away from this High Water mark at its minimum; see attached survey for reference. Our client does not propose building beyond this 116'-0" mark. The existing wastewater disposal system for Building #1 (while not noted on the enclosed survey) is located to the South-east of Building #1, across the driveway, where the note "lawn" occurs. The wastewater disposal system for Building #2 has been capped and removed. The systems predate 1974 and are proposed to be replaced as a part of this scope of work. The replacement will conform to all state and local regulations. Included in this Application is a Subsurface Wastewater Disposal System Proposal for the replacement systems, sized to combine the needs of both Building #1 and Building #2, while locating it as far from the resource as reasonably possible.

As a portion of the existing structure is to be demolished, the new structure is required to conform to all city and Maine regulations to the greatest practical extent. The attached survey indicates the existing conditions. The City of Biddeford restricts the total footprint of all structures within RP Zone to 1,500 sq. ft. OR 30% larger than the footprint that existed at the time the district was established, whichever is larger. The height for structures within the RP Zone is restricted to 25'-0" or the height of the existing structure, whichever is greater. Building height is measured as the vertical distance between the mean original grade at the downhill side and the highest point of the structure not including chimneys.

2. PROJECT DATA/INFORMATION

1.	Applicant:	Peter Cameron Hyzer & Jennifer Hyzer 17206 SE 38 th Circle Vancouver, WA 98663
2.	Owner of Property:	Same as applicant
3.	Agent:	Christopher Garland AIA Caleb Johnson Studio/Woodhull 110 Exchange Street, Third Floor Portland, ME 04101
4.	Surveyor:	NORSE/Colliers 41 Church St. Brunswick, ME 04011
5.	Project Location:	280 Hills Beach Road
6.	Project Tax Map #/Lot #:	Tax map 56, Lot 18
7.	Lot Size:	3.95+/- acres
8.	Base Zoning:	CR
9.	Overlay Zoning:	RP
10.	Existing Use:	Residential-Single Family Home, Building 1
11.	Proposed Use:	Residential-Single Family Home, Building 1
12.	Approvals Required:	GPE Approval
13.	Uses in the Vicinity:	Residential

Case 2023.23: 280 Hills Beach Road, Greatest Practical Difficulty (Tax Map 56, Lots 18) in the Coastal Residential and Resource Protection Shoreland Overlay zone.

Planning Board Hearing date: May 3, 2023

14.	Waivers Needed:	a. None
18.	Waivers Granted:	a. None
22.	Other Non-City Permits Required:	
23.	LDR Attachment A: Fees Paid:	Application Fees Paid
25.	Planning Board Review History: Prior Approval January 5, 2022	

3. REVIEW PROCESS

Per City ordinance, this application is subject to Site Plan (Land Development Regulations, Article XI) review and approval by the Planning Board.

4. PLANNING and CODE ENFORCEMENT COMMENTS:

This Application has been discussed with the Roby Fecteau, Director of Code Enforcement and he and the Planning Department agree that the proposal meets the “greatest practical extent” standards.

5. STAFF REVIEW:

- A. **APPLICATION COMPLETENESS:** The applicant has submitted a complete application, featuring all required elements as specified under Section 66-35 (Required Information for Final Plan Submissions).
- B. **ZONING:** The subject property has an existing non-conforming (setback) single-family home and is located within the Coastal Residential and Shoreland Overlay Zone. The proposed continued use of the property as a single-family home is a permitted use within the CR and Shoreland Overlay Zone. With respect to applicable dimensional requirements, the project would comply with all applicable requirements, including building height, building setback, frontage, and lot coverage requirements.

6. STAFF RECOMMENDATION:

The Application includes responses to the *6 specific criteria outlined with Article XIV, Section 12 (C)(3) that the Planning Board evaluates in making the requested “greatest practical extent” determination.* Staff recommends the Planning Board approve the Application as presented.

7. SAMPLE MOTIONS

- A. Motion to Approve: I motion to APPROVE the request of Cameron Hyzer & Jennifer Hyzer to rebuild an existing house at 280 Hills Beach Road-Building 1 (Tax Map 56, Lot 18) in the Shoreland CR/RP zone (Case # 2023.23) which meets the Greatest Practical Extent criteria as presented with the adoption of the Findings of Fact (FOF) and Conditions of Approval (COA).
- B. Motion to Deny I motion to DENY the request of Cameron Hyzer & Jennifer Hyzer to rebuild an existing house at 280 Hills Beach Road-Building 1 (Tax Map 56, Lot 18) in the Shoreland CR/RP zone (Case # 2023.23) which does NOT meet the Greatest Practical Extent criteria as for the property located at 280 Hills Beach Road, (Tax Map 56, Lot 18), Coastal Residential zoning district, with the RP Shoreland overlay district for the following reasons:
- 1) _____.
 - 2) _____.
 - 3) _____.

Case 2023.23: 280 Hills Beach Road, Greatest Practical Difficulty (Tax Map 56, Lots 18) in the Coastal Residential and Resource Protection Shoreland Overlay zone.

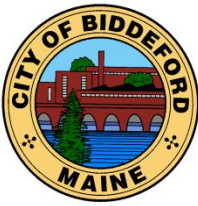
Planning Board Hearing date: May 3, 2023

C. Motion to Table: I motion to TABLE the request of Cameron Hyzer & Jennifer Hyzer to rebuild an existing house at 280 Hills Beach Road-Building 1 (Tax Map 56, Lot 18) in the Shoreland CR/RP zone (Case # 2023.23) for the following reasons:

- 1) _____.
- 2) _____.
- 3) _____.

Respectfully submitted,

David C.M. Galbraith
City Planner & Deputy Director of the Planning & Development Dept.



CITY OF BIDDEFORD

Planning and Development Department

205 Main Street
P.O. Box 586
Biddeford, ME 04005
(207) 284-9115

FINDINGS OF FACT AND CONCLUSIONS OF LAW **RECONSTRUCTION OF A NONCONFORMING STRUCTURE WITHIN THE SHORELAND ZONE** *Determination of the Required Setback to the Greatest Practical Extent*

Pursuant to the provisions of the City of Biddeford Land Development Regulations Article XIV, Shoreland Zoning, the Biddeford Planning Board has considered the application (Case # 2023.25) by **Peter Cameron Hyzer and Jennifer Hyzer**, including supportive data, public hearing testimony and related materials contained in the record. Based on Public Comment and Staff's review and recommendation, the Planning Board makes the following Findings of Fact and Conclusions of Law:

FINDINGS OF FACT

PROJECT DATA/INFORMATION

1.	Applicant:	Peter Cameron Hyzer & Jennifer Hyzer 17206 SE 38 th Circle Vancouver, WA 98663
2.	Owner of Property:	Same as applicant
3.	Agent:	Christopher Garland AIA Caleb Johnson Studio/Woodhull 110 Exchange Street, Third Floor Portland, ME 04101
4.	Surveyor:	NORSE/Colliers 41 Church St. Brunswick, ME 04011
5.	Project Location:	280 Hills Beach Road
6.	Project Tax Map #/Lot #:	Tax map 56, Lot 18
7.	Lot Size:	3.95+/- acres
8.	Base Zoning:	CR
9.	Overlay Zoning:	RP
10.	Existing Use:	Residential-Single Family Home, Building 1
11.	Proposed Use:	Residential-Single Family Home, Building 1
12.	Approvals Required:	GPE Approval
13.	Uses in the Vicinity:	Residential
14.	Waivers Needed:	a. None
18.	Waivers Granted:	a. None
22.	Other Non-City Permits Required:	
23.	LDR Attachment A: Fees Paid:	Application Fees Paid
25.	Planning Board Review History:	Prior Approval January 5, 2022; May 3, 2023

FINDINGS OF FACT AND CONCLUSIONS OF LAW
Case 2023.23: 280 Hills Beach Road, Greatest Practical Difficulty (Tax Map 56, Lots 18)
in the Coastal Residential and Resource Protection Shoreland Overlay zone.

CONCLUSIONS OF LAW

The Planning Board concludes based on the following that the proposed location of the nonconforming structure at 280 Hills Beach Road, being no closer than 116 feet from the Highest Annual Tide (HAT) line of the "Gut" and not to extend beyond the existing footprint of Building #1 and as depicted on the approved plan for Peter Cameron Hyzer and Jennifer Hyzer, signed by the Planning Board (or its designee), is in compliance with the required setback from the shoreline to the greatest practical extent.

1. Pursuant to the City's Land Use Regulations, Article XIV, Section 12.C, when considering the relocation, reconstruction or replacement of a nonconforming structure located less than the required setback from the shoreline, the Planning Board shall consider the following:
 - a. *The size of the lot*
 - b. *The slope of the land*
 - c. *The potential for soil erosion*
 - d. *The location of other structures on the property and on adjacent properties*
 - e. *The location of the septic system and other on-site soils suitable for septic systems*
 - f. *The type and amount of vegetation to be removed to accomplish the relocation*

DETERMINATION

Based on the evidence contained within the Application, public hearing testimony, related materials contained in the record, and information presented within the Staff's memorandum and recommendation, the Biddeford Planning Board approves the application with the following conditions:

Conditions of Approval:

1. **The new building shall be no closer than 116 feet from the Highest Annual Tide (HAT) of The Gut, as denoted on the approved plan, and shall not extend beyond the existing footprint of Building #1.**
2. **Trees removed in order to relocate a structure must be replanted with at least one native tree, three feet in height, for every tree removed. If more than five trees are planted, no one species of tree shall make up more than 50% of the number of trees planted. Replaced trees must be planted no further from the water or wetland than the trees that were removed. Other woody and herbaceous vegetation and ground cover that are removed or destroyed in order to relocate a structure must be reestablished. An area at least the same size as the area where vegetation and/or ground cover was disturbed, damaged, or removed must be reestablished within the setback area. The vegetation and/or ground cover must consist of similar native vegetation and/or ground cover that was disturbed, destroyed or removed.**
3. **Where feasible, when a structure is relocated on a parcel, the original location of the structure shall be replanted with vegetation which may consist of grasses, shrubs, trees, or a combination thereof.**
4. **The Code Enforcement Officer shall review and approve conformance to Section 15 of the Shoreland Zoning Ordinance.**
5. **Obtain all required permits from Maine Department of Environmental Protection and the Biddeford Code Enforcement Office.**
6. **This approval shall expire one year from the date below if a substantial start is not made in construction. If a substantial start is made within one year of the date below, the**

FINDINGS OF FACT AND CONCLUSIONS OF LAW

**Case 2023.23: 280 Hills Beach Road, Greatest Practical Difficulty (Tax Map 56, Lots 18)
in the Coastal Residential and Resource Protection Shoreland Overlay zone.**

**applicant shall have one additional year to complete the project, thereafter this approval
shall expire.**

Planning Board Chairman

Date

April 3, 2023

280 Hills Beach Road, Greatest Practical Extent Application

Project Address: 280 Hills Beach Road, Biddeford, ME 04005
Map 56 Lot 18

Dear Members of the Planning Board

As agents for Peter Cameron Hyzer and Jennifer Hyzer, we are re-applying for Greatest Practical Extent at 280 Hills Beach Road in Biddeford.

This is an application for Greatest Practical Extent due to the expiration of the previous ruling. Greatest Practical Extent for this property was originally presented to the Board on January 5th, 2022, with the Board Approving the application, and establishing 116'-0" from the Highest Annual Tide as the Greatest Practical Extent, as that dimension is the closest the Existing Structure is to the Resource. We are not requesting any modifications to the previous ruling. Included in this application however, is a revised subsurface wastewater disposal system, which is designed to combine both the existing Guest House (Structure #2, and to be modified Structure #1) into one system. This was revised due to a failure of the Structure #2's system, which was capped and removed in the summer of 2023.

Our client's original goal remains: to demolish a portion of a structure (Building #1), and rebuild it to meet modern standards with the intent of utilizing the structure's general footprint to minimize soil, vegetation, utility and resource disturbance to the site. Partial demolition of the structure has since occurred, (Permit #22-06-424, dated 6/8/22), due to burst pipes causing significant damage to the structure in late winter 2022. Maximum height requirements for the project are established by the portion of the structure that is remaining. The previously approved 116'-0" Greatest Practical Extent is still relevant, as that distance is established by the portion of Structure #1 which remains. A subsurface wastewater disposal system is proposed as a part of this project, which will replace the existing, pre-1974 system. Permits for the new structure have been approved by Code Enforcement with their issuance being contingent upon the re-approval of this Greatest Practical Extent Application.

The property is zoned within the Resource Protection (RP) overlay of the Shoreland Zone within the Coastal Residential Zoning (CR). The entirety of the property exists within the RP Overlay. The property is conforming due to lot coverage (maximum allowed of 20% versus actual of 13%). The Main House structure (Building #1) itself is not conforming due to the setbacks from Highest Annual Tide (minimum required of 250'-0" in the RP overlay versus actual of 116'-0" +/- at the minimum) but conforms to all yard setbacks. The Guest House (Building #2) is non-conforming due to the side yard setback (minimum required of 25'-0" versus actual of 14'-8.4") as well as the 250'-0" setback for the RP Overlay. No work is being proposed on the Guest House (Building #2). No portion of the Property exists beyond 250'-0" from the Highest Annual Tide.

The property is bound by Hills Beach Road and privately owned lots to the north east. Local code determines a 25-foot front yard setback requirement from the minor ROW. Our client does not propose building beyond this 25' line. To the west and south, the property is constrained by the High Water mark (7.4' contour NAVD88) from The Pool. To the east, the property is constrained by the High Water mark (see above) from The Gut. Building #1 is 116'-0"+/- away from this High Water mark at its minimum; see attached survey for reference. Our client does not propose building beyond this 116'-0" mark.

The existing wastewater disposal system for Building #1 (while not noted on the enclosed survey) is located to the South-east of Building #1, across the driveway, where the note "lawn" occurs. The wastewater disposal

WOODHULL

system for Building #2 has been capped and removed. The systems predate 1974 and are proposed to be replaced as a part of this scope of work. The replacement will conform to all state and local regulations. Included in this Application is a Subsurface Wastewater Disposal System Proposal for the replacement systems, sized to combine the needs of both Building #1 and Building #2, while locating it as far from the resource as reasonably possible.

As a portion of the existing structure is to be demolished, the new structure is required to conform to all city and Maine regulations to the greatest practical extent. The attached survey indicates the existing conditions. The City of Biddeford restricts the total footprint of all structures within RP Zone to 1,500 sq ft OR 30% larger than the footprint that existed at the time the district was established, whichever is larger. The height for structures within the RP Zone is restricted to 25'-0" or the height of the existing structure, whichever is greater. Building height is measured as the vertical distance between the mean original grade at the downhill side and the highest point of the structure not including chimneys.

Please let me know if you have any questions and I look forward to the Board's continued support of this Application.

Sincerely,



Christopher Garland, AIA on behalf of Woodhull
207.956.0983
chris.garland@woodhullmaine.com

**City of Biddeford – Planning Department****Planning Board Application**

P.O. Box 586, 205 Main Street Biddeford, Maine 04005
207-284-9115

Type of Application:

☐ Shoreland Zoning Permit ☐ Site Plan Review ☐ Extraction
☐ Conditional Use Permit ☐ Subdivision ☐ Private Way
☒ Other: Greatest Practical Extent

Applicant Information:

Name: Peter Cameron Hyzer and Jennifer Hyzer
Mailing Address: 17206 SE 38th Circle, Vancouver, WA 98683
Telephone: (857) 498-1537
Email: _____

What is your legal interest in the property?

☒ Owner ☐ Potential Buyer with Contract ☐ Lease/Rental Agreement

Owner's Information:

Name: Peter Cameron Hyzer and Jennifer Hyzer
Mailing Address: 17206 SE 38th Circle, Vancouver, WA 98683
Telephone: (857) 498-1537
Email: _____

Agent's Information:

Name: Christopher Garland, AIA, on behalf of Caleb Johnson Studio/Woodhull
Mailing Address: 110 Exchange St, Third Floor, Portland ME 04101
Telephone: 207.956.0983
Email: Chris.garland@woodhullmaine.com

Engineer/Surveyor's Information:

Name: NORSE/Colliers
Mailing Address: 41 Church St. Brunswick ME 04011
Telephone: 207.440.3487
Email: tara.mullen@collierseng.com

Project Location and Lot Information:

Street Address: 280 Hills Beach Road Drainage Watershed: Biddeford Pool
Tax Map: 56 Lot: 18
Current Zoning: CR Shoreland Zoning: RP
Size of Lot: 3.95 +/- (x)acres ()s.f. Lot Frontage: 298' +/-
Existing Use of Property: Single family Residential

Property currently serviced by:

☒ City Road ☐ Public Sewer ☒ Public Water ☒ Public Trash
☐ Private Road ☒ Septic System ☐ Private Well ☐ Private Hauler

Slope Conditions in Area of Construction (if applicable):

☒ Flat (0-3% slope) ☒ Rolling (3-8% slope) ☒ Hilly (8-15% slope) ☒ Steep (15%+ Slope)

Are there any wetlands or waterbodies on the site? ☒ (Yes) ☐ (No) if yes attach information

Is the project within the 100-year floodplain? ☐ (Yes) ☒ (No) if yes attach information ***Portions of site are within floodplain, but not the house.

Do you plan to bring fill onto the lot? ☒ (Yes) ☐ (No) If yes attach information

***SITE ABUTS "THE POOL" AND "THE GUT", SEE SURVEY. NO WETLANDS OR BODIES OF WATER EXIST ELSEWHERE ON SITE.

***ASSUMING FILL IS REQUIRED FOR NEW WASTEWATER DISPOSAL SYSTEM, SEE ATTACHMENT

Description of proposed use of property:**Project/Proposed Use:**

~~Partial demolition and rebuild of an existing house on site ("Existing House, Building #1" per Survey), this Project seeks to~~
~~utilize the general footprint of the existing structure to minimize soil, vegetation, utility and resource disturbance to the site. A new subsurface~~
~~wastewater disposal system is also proposed, which would replace the existing, pre-1974 system on site. Exterior improvements will be~~
~~developed as well.~~

Property to be Serviced by:

☒ City Road ☐ Public Sewer ☒ Public Water ☒ Public Trash
☐ Private Road ☒ Septic System ☐ Private Well ☐ Private Hauler

Limits of Disturbance: TBD () acres () s.f.

Net change in impervious cover: +3,953 +/- () acres (x) s.f.

Is this project part of a larger project? ☐ (Yes) ☒ (No)

Is the project proposing a new Private or Public Road? ☐ (Yes, Private) ☐ (Yes, Public) ☒ (No)

Is this project within the Urbanized Area/MS4 (see [City Drainage Map](#)) ☒ (Yes) ☐ (No)

Is the project proposing any Stormwater facilities/BMPs? ☐ (Yes) ☒ (No)

Will a Traffic Movement Permit (TMP) be required?: ☐ (Yes) ☒ (No)

If in a Shoreland Zone:

Percent of residential lot coverage (Max 20%): Existing = 13%, Proposed = 14%

Percent of structure expansion (Max 30%): 27%, includes exterior improvements (patios, walkways, pool)

If Subdivision Review, number of lots proposed: N/A

If a Private Way is proposed, number of lots served: N/A

If Site Plan Review, you must provide the following information:

Total new square feet footprint of structure: N/A

Total new square feet paving/parking: N/A

Waiver Requests (attach details):

1. N/A
2. _____
3. _____
4. _____
5. _____

Required Submittal Attachments:

N/A A. Letters of Approval

☐ Fire Department – Contact Chief or Deputy Chief – 282-9986

☐ Ability to Serve for Water Service – Maine Water – 282-1543

☐ Ability to Serve for Sewer Service – Engineering Department – Tom Milligan 284-9118

☐ Police Department – e-911 Road Name Designation – Contact Joanne Fisk 282-5127

x B. Letter to Planning Board describing project, Waiver requests, proposed improvements, addressing permit requirements, etc.

x C. Photographs of Site.

D. Architectural renderings/drawings of proposed buildings, as required.

x E. Engineering Plans, as required.

F. Stormwater Management Report, as required.

Fees (Due at time of Submission):

- \$75 Nonrefundable Administration Fee is required for every application.
- Refer to "Attachment A Fees and Charges" of the Land Development Regulations for more information. Consult with Planning Staff if you have questions.

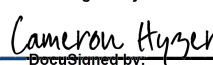
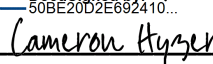
Required Signatures:

By signing this application, as the foresaid applicant or authorized agent:

- I certify that I have read and completely understand the application;
- I certify that the information contained in this application and its attachments are true and correct;
- I understand that all information provided on this form and all other documents submitted as part of my proposal is a matter of public record;
- I understand that copies of this information may be supplied upon request to an interested party.
- I understand that additional funds may be required through the course of the review for special studies, legal review costs, and/or engineering review.
- I understand that by submitting an application I am not guaranteed a place on any particular agenda. I further understand that the City Planner will place me on an agenda for review when the application is deemed substantially complete.

Will the proposed project cause 1 acre or more of site disturbance?: ☐ (Yes) ☒ (No)

- **If Yes, applicant is responsible for any required Maine Construction General Permits and shall comply with the requirements of DEP Chapter 500 Stormwater Regulations, as they apply.**

Signature of Applicant:	DocuSigned by:  50BE20D2E692410...	Date <u>3/31/2023</u>
Signature of Property Owner:	DocuSigned by:  50BE20D2E692410...	Date <u>3/31/2023</u>

DIGITAL SUBMITTAL REQUIREMENTS FOR ALL SUBMITTALS:

- A) PDF OF SIGNED APPLICATION
- B) PDFs OF ALL DRAWING SETS AND OTHER REQUIRED SUBMITTAL ATTACHMENTS NOTED ABOVE

HARD-COPY SUBMITTAL REQUIREMENTS FOR PLANNING BOARD APPLICATIONS:

- A) SEVEN (7) FULL-SIZE PAPER COPIES OF DRAWING SETS

DIGITAL SUBMITTAL REQUIREMENTS FOR FINAL APPROVAL:

- A) INDIVIDUALLY NAMED PDFs OF EACH DRAWING (NOT A COMBINED PDF SET)
 - *Individual Drawing PDF Naming Format: 'PROJECT/SHEETSET NAME_INDIVIDUAL DRAWING NAME.pdf'*
- B) PDF COPIES OF ALL PERMIT APPROVALS, APPLICATIONS, REPORTS, NARRATIVES, LETTERS, ETC.
- C) FINAL CAD REFERENCE FILES IN DWG FORMAT (SURVEY & PROPOSED DESIGN LINEWORK)
 - *All drawings & CAD reference files must be to-scale and within the following coordinate systems:*
 - MAINE STATE PLANE WEST NAD83 (Horizontal Datum) & NAVD88 (Vertical Datum)

HARD-COPY SUBMITTAL REQUIREMENTS FOR FINAL APPROVAL:

- A) THREE (3) FULL-SIZE PAPER COPIES OF INDIVIDUAL DRAWINGS REQUIRING BOARD SIGNATURE
- B) ONE (1) FULL-SIZE PAPER COPY OF ENTIRE DRAWING SET FOR ENGINEERING RECORDS

PLEASE CONFIRM WITH PLANNING STAFF FOR CLARIFICATION

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services
Div of Environmental Health, 11 SHS
(207) 287-2070 FAX (207) 287-4172

PROPERTY LOCATION		>>CAUTION: LPI APPROVAL REQUIRED<<	
City, Town, or Plantation	BIDDEFORD	Town/City _____	Permit # _____
Street or Road	280 & 282 HILLS BEACH ROAD	Date Permit Issued ___/___/___	Fee \$ _____ Double Fee Charged []
Subdivision, Lot #			L.P.I.# _____
OWNER/APPLICANT INFORMATION		Local Plumbing Inspector Signature	
Name (last, first, MI)	PETER & JENNIFER	Fee \$ _____	State Fee _____ Fee \$ _____ Locally Adopted Fee _____
	HYZER	Copy: [] Owner [] Town [] State	
Mailing Address of Applicant	CALEB JOHNSON STUDIO c/o CHRIS GARLAND 110 EXCHANGE STREET #2 PORTLAND, ME 04101	The Subsurface Wastewater Disposal System shall not be installed until a Permit is issued 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.	
Daytime Tel. #	856-0983 chris@calebjohnsonstudio.com	Municipal Tax Map # 56 Lot # 18	
OWNER OR APPLICANT STATEMENT		CAUTION: INSPECTION REQUIRED	
I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a permit.		I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.	
Signature of Owner/Applicant _____ Date _____		Local Plumbing Inspector Signature _____ (1st) Date Approved _____ _____ (2nd) Date Approved _____	

PERMIT INFORMATION			
TYPE OF APPLICATION ☐ 1. First Time System ☒ 2. Replacement System Type Replaced: UNKNOWN Year Installed: UNKNOWN ☒ 3. Expanded System ☒ a. <25% Expansion ☐ b. >25% Expansion ☐ 4. Experimental System ☐ 5. Seasonal Conversion	THIS APPLICATION REQUIRES ☒ 1.No Rule Variance ☐ 2.First Time System Variance ☐ a. Local Plumbing Inspector Approval ☐ b. State & Local Plumbing Inspector Approval ☐ 3.Replacement System Variance ☐ a. Local Plumbing Inspector Approval ☐ b. State & Local Plumbing Inspector Approval ☐ 4.Minimum Lot Size Variance ☐ 5.Seasonal Conversion Permit	DISPOSAL SYSTEM COMPONENTS ☒ 1. Complete Non-Engineered System ☐ 2. Primitive System(graywater & alt toilet) ☐ 3. Alternative Toilet, specify: _____ ☐ 4. Non-Engineered Treatment Tank (only) ☐ 5. Holding Tank, _____ gallons ☐ 6. Non-Engineered Disposal Field (only) ☐ 7. Separated Laundry System ☐ 8. Complete Engineered System(2000gpd+) ☐ 9. Engineered Treatment Tank (only) ☐ 10. Engineered Disposal Field (only) ☒ 11. Pre-treatment, specify: 2-SINGULAR GREEN MODEL 600 UNITS (OR EQUIVALENT) ☐ 12. Miscellaneous components	
SIZE OF PROPERTY 4. 5 +/- ☐ SQ. FT. ☒ ACRES	DISPOSAL SYSTEM TO SERVE ☐ 1. Single Family Dwelling Unit, No. of Bedrooms: _____ ☒ 2. Multiple Family Dwelling, No of Units: 2 ☐ 3. Other: _____ (specify) Current Use ☐ Seasonal ☒ Year Round ☐ Undeveloped		
SHORELAND ZONING ☒ Yes ☐ No	TYPE OF WATER SUPPLY ☐ 1. Drilled Well ☐ 2. Dug Well ☐ 3. Private ☒ 4. Public ☐ 5. Other: _____		

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)			
MONOLITHIC 2 TREATMENT TANKS IN SERIES ☒ 1. Concrete ☐ a. Regular ☐ b. Low Profile (IF NEC.) ☐ 2. Plastic ☐ 3. Other: _____ CAPACITY: 2 - 1,000's GAL. (RECOMMENDED)	DISPOSAL FIELD TYPE & SIZE ☐ 1. Stone Bed ☐ 2. Stone Trench ☒ 3. Proprietary Device ☐ a. Cluster array ☐ c.Linear ☐ b. Regular ☒ d. H-20 loaded ☐ 4. Other: _____ SIZE: 1536 sq. ft. lin. ft. 24 H-20 RATED CONCRETE CHAMBERS	GARBAGE DISPOSAL UNIT ☒ 1. No ☐ 2. Yes ☐ 3. Maybe If Yes or Maybe, specify one below: ☐ a. Multi-compartment tank ☐ b. _____ tanks in series ☐ c. Increase in tank capacity ☐ d. Filter on tank outlet	DESIGN FLOW 810 gallons per day BASED ON: ☒ 1. Table 4A (dwelling unit(s)) ☐ 2. Table 4C (other facilities) SHOW CALCULATIONS for other facilities EXISTING 4 BEDROOMS PROPOSED EXPANSION TO 5 BEDROOMS AT 90 GALLONS PER DAY EACH AND EXISTING 4 BEDROOM AT 90 G.P.D. EACH 450 + 360 = 810 G.P.D. (50% REDUCTION WITH ADVANCED WASTEWATER TREATMENT) ☐ 3. Section 4G (meter readings) ATTACH WATER-METER DATA
SOIL DATA & DESIGN CLASS PROFILE 2 / CONDITION All at Observation Hole # TB C Depth 25" of Most Limiting Soil Factor	DISPOSAL FIELD SIZING ☐ 1. Medium - 2.6 sq.ft./gpd ☒ 2. Medium-Large - 3.3 sq.ft./gpd ☐ 3. Large - 4.1 sq.ft./gpd ☐ 4. Extra-Large - 5.0 sq.ft./gpd		EFFLUENT/EJECTOR PUMP ☐ 1. Not required ☐ 2. May be required ☒ 3. Required Specify only for engineered systems: SEE NOTE ON PAGE 3 DOSE: _____ gallons

SITE EVALUATOR STATEMENT		
I certify that on 9/1/22 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the Subsurface Wastewater Disposal Rules (10-144A CMR 241).		
Site Evaluator Signature <i>Matthew Logan</i>	324 SE #	9-9-2022 Date
MATTHEW LOGAN Site Evaluator Name Printed	(207) 756-9118 Telephone Number	MATTLOGAN.MLE@GMAIL.COM E-mail Address

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Health and Human Services
Division of Environmental Health
(207) 287-2070 FAX (207) 287-4172

Town, City, Plantation
BIDDEFORD

Street, Road Subdivision
280 HILLS BEACH ROAD

Owner's Name
PETER & JENNIFER HYZER

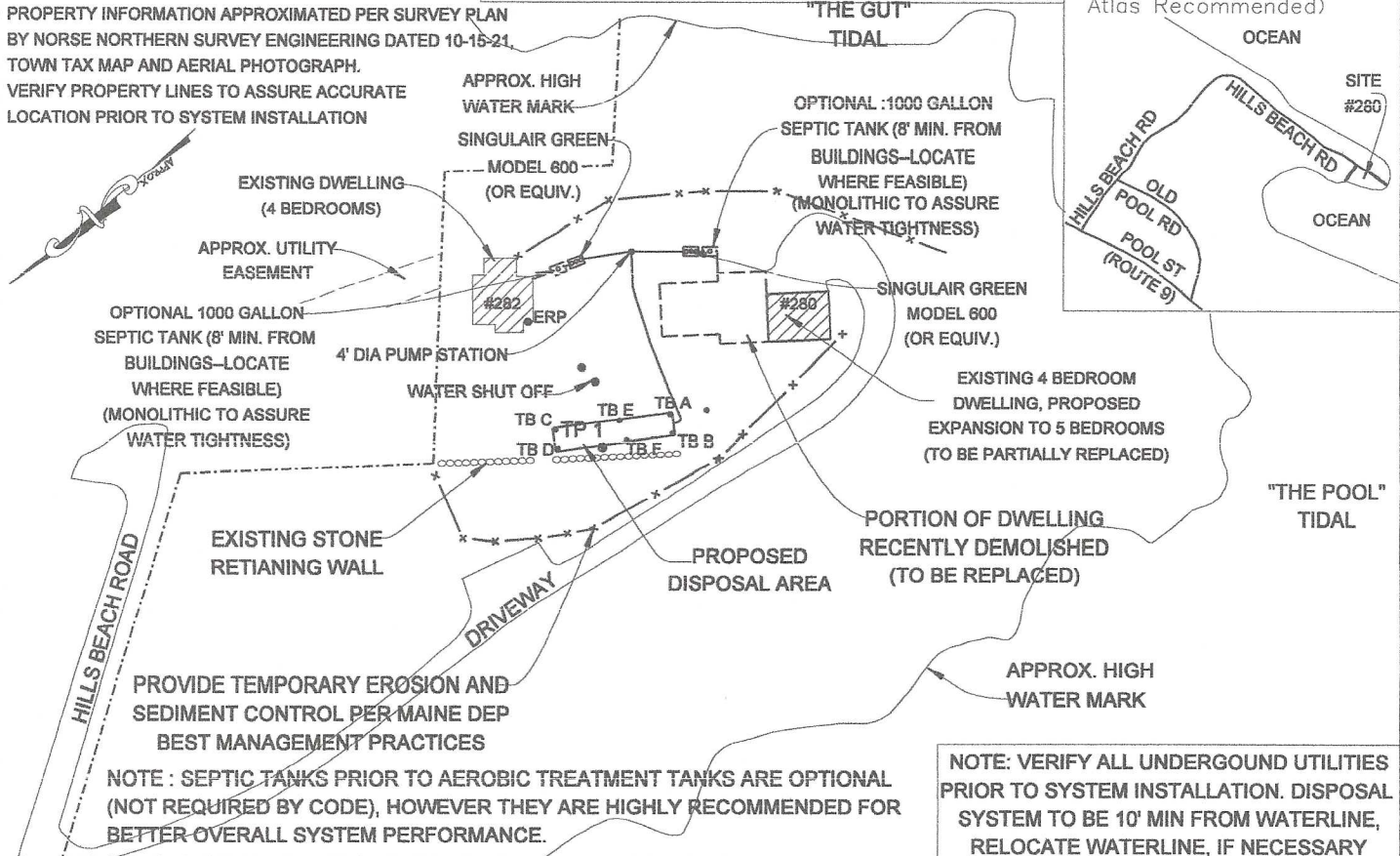
****ML ENVIRONMENTAL, LLC ARE NOT SURVEYORS****

PROPERTY INFORMATION APPROXIMATED PER SURVEY PLAN
BY NORSE NORTHERN SURVEY ENGINEERING DATED 10-15-21.
TOWN TAX MAP AND AERIAL PHOTOGRAPH.
VERIFY PROPERTY LINES TO ASSURE ACCURATE
LOCATION PRIOR TO SYSTEM INSTALLATION

SITE PLAN

Scale 1" = **100** Ft.
or as shown

SITE LOCATION PLAN
(Attach Map from Maine
Atlas Recommended)



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

Observation Hole **TP 1** ☒ Test Pit ☐ Boring
" Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN	
		YELLOW BROWN	
		REFUSAL IN LARGE ROCK OR BEDROCK	

Soil Classification **2** **AIII/C**
Profile Condition
Slope **0-3 %**
Limiting Factor **26 "**
☐ Ground Water
☐ Restrictive Layer
☒ Bedrock
☐ Pit Depth

Observation Hole **TB's** ☒ Test Pit ☐ Boring
" Depth of Organic Horizon Above Mineral Soil

Texture	Consistency	Color	Mottling
TB A = 30" TO REFUSAL / BEDROCK			
TB B = 27" TO REFUSAL / BEDROCK			
TB C = 25" TO REFUSAL / BEDROCK			
TB D = 25" TO REFUSAL / BEDROCK			
TB E = 28" TO REFUSAL / BEDROCK			
TB F = 25" TO REFUSAL / BEDROCK			

Soil Classification **2** **AIII/C**
Profile Condition
Slope **0-3 %**
Limiting Factor **25 "**
☐ Ground Water
☐ Restrictive Layer
☒ Bedrock
☐ Pit Depth

Site Evaluator Signature

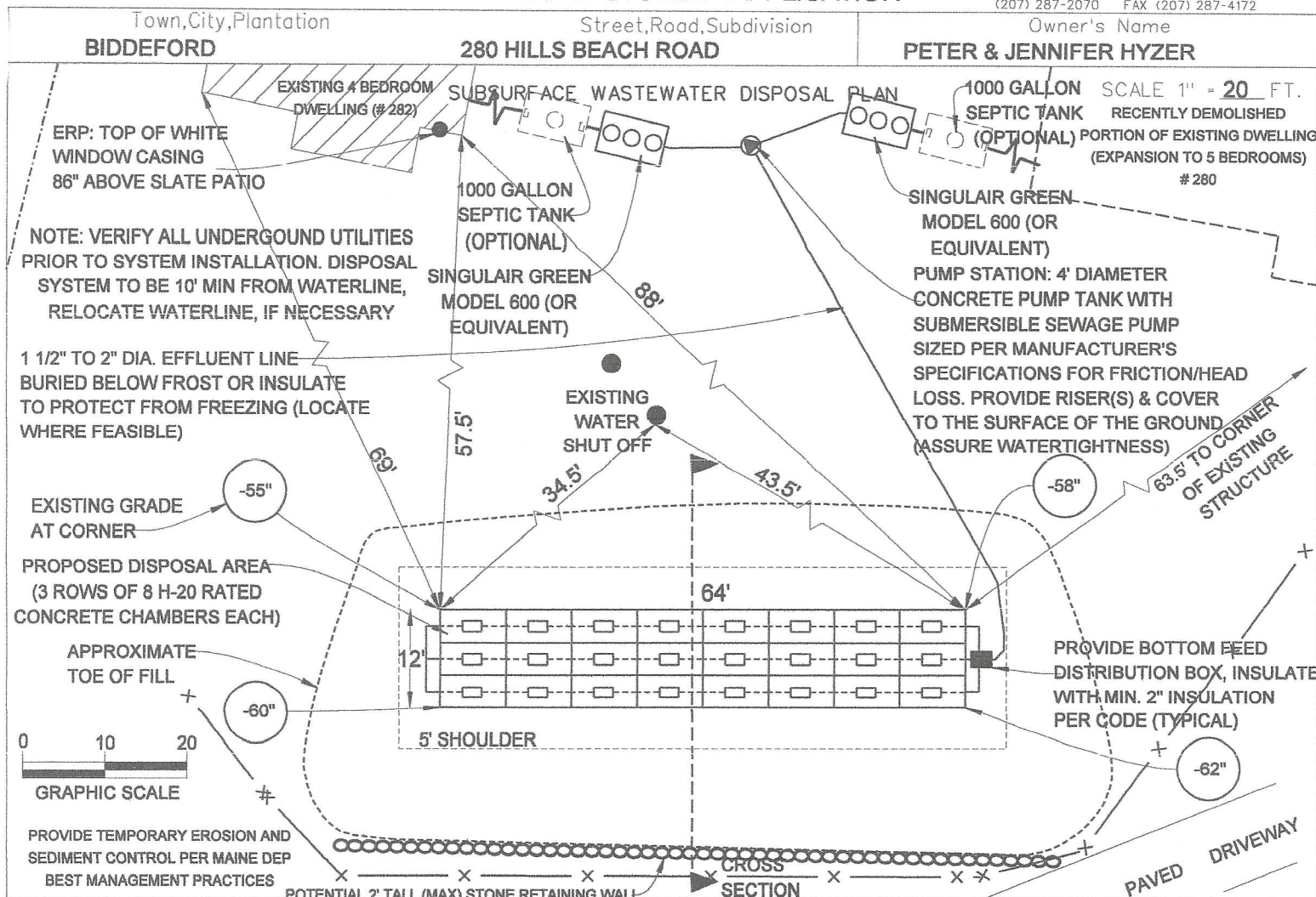
324
SE #

Date

Page 2 of 3
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SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Health and Human Services
Division of Environmental Health
(207) 287-2070 FAX (207) 287-4172



FILL REQUIREMENTS

Depth of Fill (Upslope) : 16" - 19"
Depth of Fill (Downslope) : 21" - 23"
DEPTHS AT CROSS-SECTION (shown below)

CONSTRUCTION ELEVATIONS
Finished Grade Elevation
Top of Distribution Pipe or Proprietary Device
Bottom of Disposal Area

SEE
DETAIL
BELOW

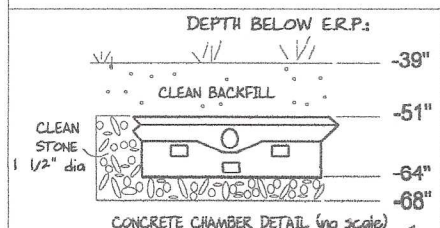
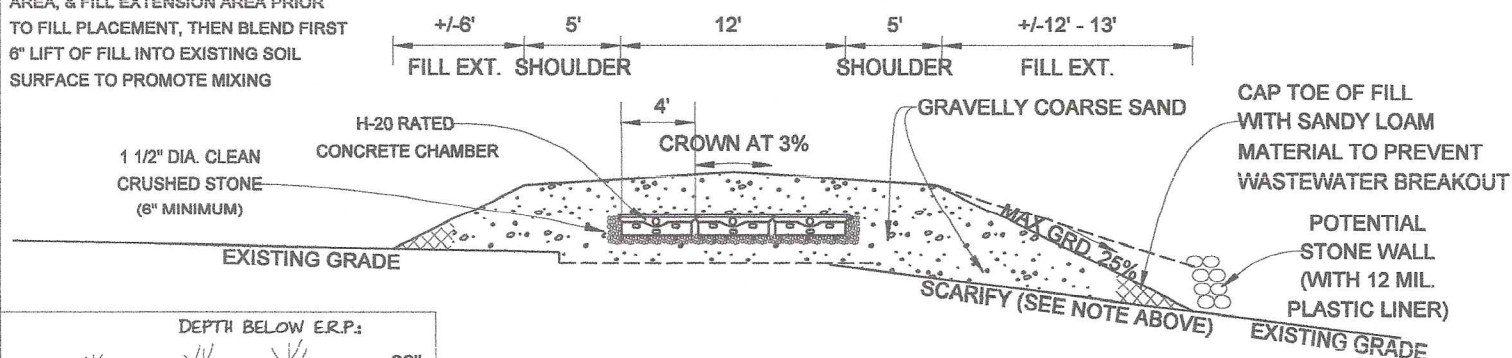
ELEVATION REFERENCE POINT

Location & Description TOP OF WHITE WINDOW CASING, 86" ABOVE SLATE PATIO (ON # 282 HILLS BEACH ROAD-SEE ABOVE)
Reference Elevation is: 0.0" or -----

SCALE:
VERTICAL: 1" = 5 FT
HORIZONTAL: 1" = 10 FT

NOTE: THOROUGHLY SCARIFY UNDER ENTIRE DISPOSAL FIELD, SHOULDER AREA, & FILL EXTENSION AREA PRIOR TO FILL PLACEMENT, THEN BLEND FIRST 6" LIFT OF FILL INTO EXISTING SOIL SURFACE TO PROMOTE MIXING

DISPOSAL AREA CROSS SECTION



Matthew Lynn
Site Evaluator Signature

324
SE *

9-9-2022
Date

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BIDDEFORD

280 HILLS BEACH ROAD

PETER & JENNIFER HYZER

TOWN

LOCATION

APPLICANT'S NAME

1) The Plumbing and Subsurface Wastewater Disposal Rules adopted by the State of Maine, Division of Health and Human Services pursuant to 22 M.R.S.A. § 42 (the "Rules") are incorporated herein by reference and made a part of this application and shall be consulted by the owner/applicant, the system installer and/or building contractor for further construction details and material specifications. The system Installer should contact ML Environmental, L.L.C. at 756-9118, if there are any questions concerning materials, procedures or designs. The system installer and/or building contractor installing the system shall be solely responsible for compliance with the Rules and with all state and municipal laws and ordinances pertaining to the permitting, inspection and construction of subsurface wastewater disposal systems.

2) This application is intended to represent facts pertinent to the Rules only. It shall be the responsibility of the owner/applicant, system Installer and/or building contractor to determine compliance with and to obtain permits under all applicable local, state and/or federal laws and regulations (including, without limitation, Natural Resources Protection Act, wetland regulations, zoning ordinances, subdivision regulations, Site Location of Development Act and Minimum Lot Size law) before installing this system or considering the property on which the system is to be installed a "buildable" lot. It is recommended that a wetland scientist be consulted regarding wetland regulations. Prior to the commencement of construction/installation, the local plumbing inspector or Code Enforcement Officer shall inform the owner/applicant and M. L. Environmental, L.L.C. of any local ordinances which are more restrictive than the Rules in order that the design may be amended. All designs are subject to review by local, state and/or federal authorities. M.L Environmental, L. L. C.'s liability shall be limited to revisions required by regulatory agencies pursuant to laws or regulations in effect at the time of preparation of this application.

3) All information shown on this application relating to property lines, well locations, subsurface structures and underground facilities (such as utility lines, drains, septic systems, water lines, etc.) are based upon information provided by the owner/applicant and has been relied upon by M. L. Environmental, L.L.C. in preparing this application. The owner/applicant shall review this application prior to the start of construction and confirm this information. Well locations on abutting properties but not readily visible above grade should be confirmed by the owner/applicant prior to system installation to assure minimum setbacks.

4) Installation of a garbage (grinder) disposal is not recommended. If one is installed, an additional 1000 gallon septic tank or a septic tank filter shall be connected in series to the proposed septic tank. Risers and covers should be installed over the septic tank outlet per the "Rules" to allow for easy maintenance of filter.

5) The septic tank should be pumped within two years of installation and subsequently as recommended by the pump service, but in no event should the septic tank be pumped less often than every three years.

The system user shall avoid introducing kitchen grease or fats into this system. Chemicals such as septic tank cleaners and/or chlorine or water treatment backwash and controlled or hazardous substances shall not be disposed of in this system. Additives such as yeast or enzymes are discouraged, since they have not been proven to extend system life.

6) All septic tanks, pump stations and additional treatment tanks shall be installed to prevent ground water and surface water infiltration. Risers and covers should be properly installed to provide access while preventing surface water intrusion to within 6" of a finished ground surface.

Vehicular traffic over disposal system is prohibited unless specifically designed with H-20 rated components.

BIDDEFORD	280 HILLS BEACH ROAD	PETER & JENNIFER HYZER
TOWN	LOCATION	APPLICANT'S NAME

- 7) The actual waste water flow or number of bedrooms shall not exceed the design criteria indicated on this application without a re-evaluation of the system as proposed
- 8) The general minimum setbacks between a well (public or private) and septic system serving a single family residence is 100-300 feet, unless the local municipality has a more stringent requirement. A well installed by an abutter within the minimum setback distances prior to the issuance of a permit for the proposed disposal system may void this design.
- 9) When a gravity system is proposed: BEFORE CONSTRUCTION/INSTALLATION BEGINS, the system installer or building contractor shall review the elevations of all points given in this application and the elevation of the existing and/or proposed building drain and septic tank inverts for compatibility to minimum pitch requirements. In gravity systems, the invert of the septic tank(s) outlet(s) should be at least 4 inches above the invert of the distribution box outlet at the disposal area.
- 10) When an effluent pump is required: Pump stations should be sized per manufacturer's specifications to meet lift requirements and friction loss. Provisions shall be made to make certain that surface and ground water does not enter the septic tank or pump station, by sealing/grouting all seams and connections, and by placement of a riser and lid at or above grade. An alarm device warning of a pump failure shall be installed. Also, when pumping is required of a chamber system, install a 'T' connection in the distribution box and place 3 inches of stone or a splash plate in the first chamber. Insulate gravity pipes, pump lines and the distribution box as necessary to prevent freezing.
- 11) On all systems, remove the vegetation, organic duff and old fill material from under the disposal area and any fill extension. Additional fill beyond indicated on plan may be necessary to replace organic matter. On sites where the proposed system is to be installed in natural soil, scarify the bottom and sides of the excavated disposal area with a rake. Do not use wheeled equipment on the scarified soil surface. For systems installed in fill, scarify the native soil by roto-tilling or scarifying with teeth of backhoe to a depth of at least 8 inches over the entire disposal and fill extension area to prevent glazing and to promote fill bonding. Place fill in loose layers no deeper than 8 inches and compact before placing more fill (this ensures that voids and loose pockets are eliminated to minimize the chance of leakage or differential settling). Do not use wheeled equipment on the scarified soil area until after 12 inches of fill is in place. Keep equipment off proprietary devices. Divert the surface water away from the disposal area by ditching or shallow landscape swales.
- 12) Unless noted otherwise, fill shall be gravelly coarse sand, which contains no more than 5% fines (silt and clay). Crushed stone shall be clean and free of any rock dust from the crushing process.
- 13) Do not install systems on loamy, silty, or clayey soils during wet periods since soil smearing/glazing may seal off the soil interface.
- 14) Seed all filled and disturbed surfaces with perennial grass seed, with 4" min. soil or soil amendment mix suitable for growing, then mulch with hay or equivalent material to prevent erosion. Alternatively, bark or permanent landscape mulch may be used to cover system. Woody trees or shrubs are not permitted on the disposal area or fill extensions.
- 15) If an advanced wastewater treatment unit is part of the design, the system shall be operated and maintained per manufacturer's specifications.

RECORDING DATA

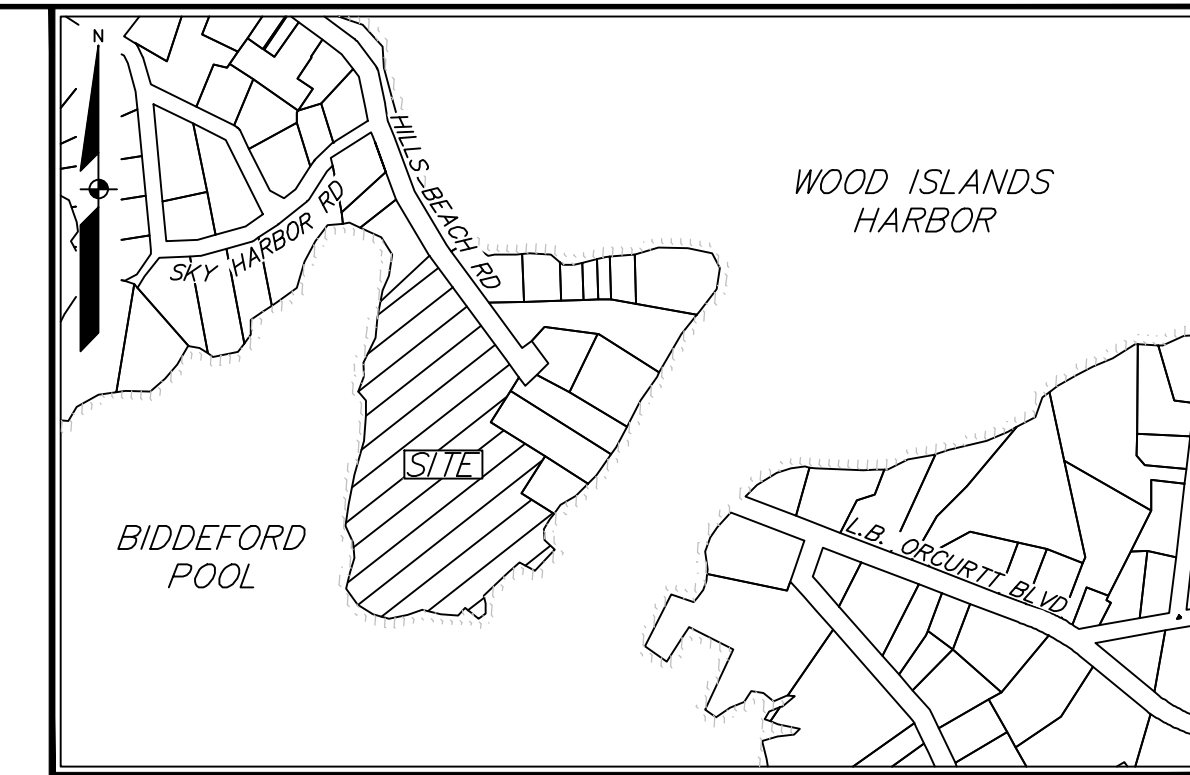
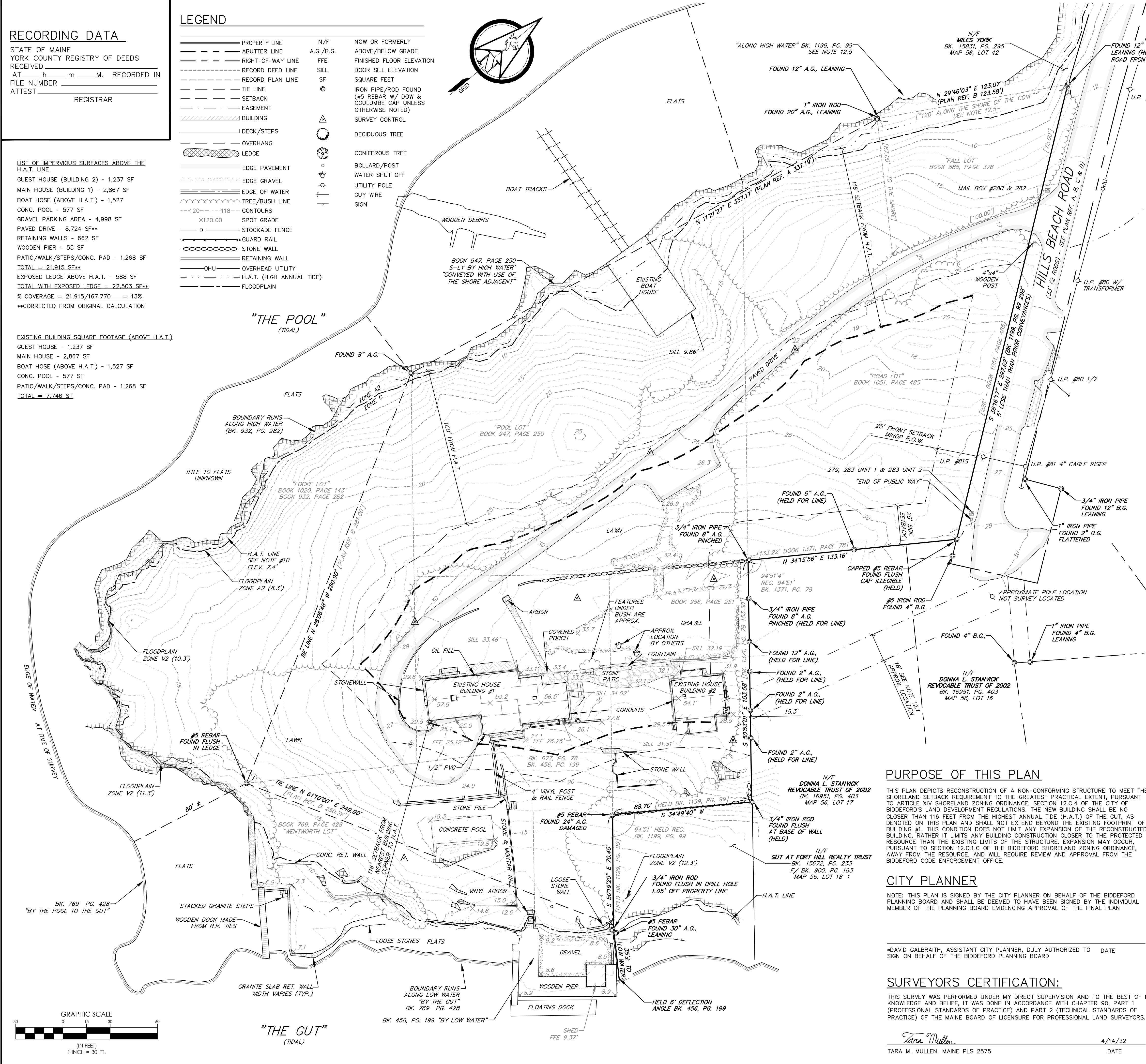
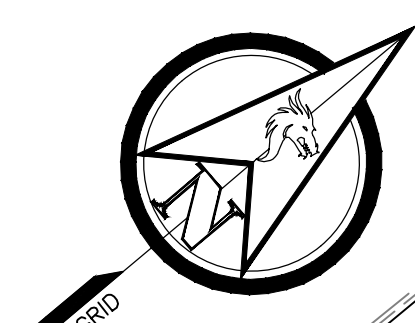
STATE OF MAINE
YORK COUNTY REGISTRY OF DEEDS
RECEIVED
AT _____ h _____ m _____ M. RECORDED IN
FILE NUMBER _____
ATTEST _____ REGISTRAR

LIST OF IMPERVIOUS SURFACES ABOVE THE H.A.T. LINE
QUEST HOUSE (BUILDING 2) - 1,237 SF
MAIN HOUSE (BUILDING 1) - 2,867 SF
BOAT HOSE (ABOVE H.A.T.) - 1,527
CONC. POOL - 577 SF
GRAVEL PARKING AREA - 4,998 SF
PAVED DRIVE - 8,724 SF**
RETAINING WALLS - 662 SF
WOODEN PIER - 55 SF
PATIO/WALK/STEPS/CONC. PAD - 1,268 SF
TOTAL = 21,915 SF**
EXPOSED LEDGE ABOVE H.A.T. - 588 SF
TOTAL WITH EXPOSED LEDGE = 22,503 SF**
% COVERAGE = 21,915/167,770 = 13%
**CORRECTED FROM ORIGINAL CALCULATION

EXISTING BUILDING SQUARE FOOTAGE (ABOVE H.A.T.)
QUEST HOUSE - 1,237 SF
MAIN HOUSE - 2,867 SF
BOAT HOSE (ABOVE H.A.T.) - 1,527 SF
CONC. POOL - 577 SF
PATIO/WALK/STEPS/CONC. PAD - 1,268 SF
TOTAL = 7,746 SF

LEGEND

PROPERTY LINE	N/F	NOW OR FORMERLY
ABUTTER LINE	A.G./B.G.	ABOVE/BELOW GRADE
RIGHT-OF-WAY LINE	FFE	FINISHED FLOOR ELEVATION
RECORD DEED LINE	SILL	DOOR SILL ELEVATION
RECORD PLAN LINE	SF	SQUARE FEET
TIE LINE	○	IRON PIPE/ROD FOUND (#5 REBAR W/ DOW & COULUMBE CAP UNLESS OTHERWISE NOTED)
SETBACK		SURVEY CONTROL
EASEMENT		DECIDUOUS TREE
BUILDING		CONIFEROUS TREE
DECK/STEPS		BOLLARD/POST
OVERHANG		WATER SHUT OFF
LEDGE		UTILITY POLE
EDGE PAVEMENT		GUY WIRE
EDGE GRAVEL		SIGN
EDGE OF WATER		
TREE/BUSH LINE		
CONTOURS		
X120.00		
SPOT GRADE		
STOCKADE FENCE		
GUARD RAIL		
STONE WALL		
RETAINING WALL		
OHU		
OVERHEAD UTILITY		
H.A.T. (HIGH ANNUAL TIDE)		
FLOODPLAIN		



LOCATION MAP

GENERAL NOTES:

THE RECORD OWNERS OF THE SURVEYED PROPERTY ARE PETER CAMERON HYZER & JENNIFER FEELEY HYZER BY DEED DATED JANUARY 4, 2021 AND RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN BOOK 18512, PAGE 767, AND IS SHOWN AS LOT 18 ON THE CITY OF BIDDEFORD TAX MAP 56.

1. THE PROPERTY IS LOCATED IN THE COASTAL RESIDENTIAL (CR) AND RESOURCE PROTECTION (RP) OVERLAY ZONE.

LAND USE REGULATIONS ARE AS FOLLOWS:

COASTAL RESIDENTIAL (CR):	
MINIMUM LOT SIZE:	VARIES PER SOIL PROFILE (ARTICLE V, TABLE C)
MINIMUM STREET FRONTAGE:	150 FT
MINIMUM FRONT YARD:	MAJOR R.O.W. 40 FT, MINOR R.O.W. 25 FT
MINIMUM SIDE & REAR YARD:	25 FT****
MAXIMUM BUILDING HEIGHT:	35 FT OR THREE STORIES

RESOURCE PROTECTION (RP) OVERLAY (250 FT FROM H.A.T.):

THERE IS LESS THAN 500 FT BETWEEN THE H.A.T. LINES AND THE ENTIRE PARCEL IS ENCOMPASSED IN THE RESOURCE PROTECTION OVERLAY.

MINIMUM LOT SIZE:	30,000 SF (SHORELAND ZONE, TIDAL)
MINIMUM SHORELAND FRONTAGE:	150 FT
MAXIMUM BUILDING HEIGHT:	25 FT OR EXISTING
MAXIMUM NON-VEGETATED COVERAGE:	20%***
AREA EXCLUDING LEDGE AREA =	167,770 S.F.

20% OF 167,770 SF = 33,550 SF

** SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

** THE RP ZONING WILL NOT ALLOW FOR A NEW SINGLE FAMILY HOME TO BE CONSTRUCTED NOR THE LOT TO BE SPLIT TO ACCOMMODATE A NEW SINGLE FAMILY HOME.

*** NON-VEGETATED COVERAGE IS CALCULATED BASED ON LOT AREA AFTER THE EXPOSED LEDGE AREA IS REMOVED

**** VARIANCES MAY BE GRANTED UNDER CERTAIN CONDITIONS THAT RESULT IN "A SITUATION WHERE THE SETBACK SHALL BE NO LESS THAN: FRONT YARD 40 FT, SIDE YARD 10 FT." ARTICLE V, TABLE C NOTES. SEE LIST OF IMPERVIOUS SURFACES ABOVE THE H.A.T. LINE

2. TOTAL AREA OF PARCEL ABOVE HIGHEST ANNUAL TIDE IS APPROXIMATELY 168,360 S.F. (3.86 ACRES +/-).

3. BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON AN ON-THE-GROUND SURVEY COMPLETED BY NORTHERN SURVEY ENGINEERING, LLC IN OCTOBER, 2021.

4. TOPOGRAPHIC INFORMATION SHOWN HEREON IS DERIVED FROM LOW ALTITUDE OBlique AND NADIR ORTHOMAGERY COLLECTED USING A DJI PHANTOM 4 PRO UNMANNED AERIAL VEHICLE (UAV) IN SEPTEMBER 2021, RECTIFIED TO SURVEY CONTROL AND SUPPLEMENTED WITH GROUND SURVEY.

5. BOOK AND PAGE REFERENCES SHOWN HEREON ARE IN REFERENCE TO THE YORK COUNTY REGISTRY OF DEEDS (Y.C.R.D.).

6. PLAN REFERENCES:

- "PLAN SHOWING A STANDARD BOUNDARY SURVEY MADE FOR RICHARD L. GOLDTHWAITE, 273 HILLS BEACH ROAD, BIDDEFORD, MAINE" BY DOW & COULUMBE, INC. DATED APRIL 8, 1998. UNRECORDED.
- "PLAN SHOWING A STANDARD BOUNDARY SURVEY MADE FOR DOUGLAS H. KAY AND DOROTHY B. KAY, 271 HILLS BEACH ROAD, FORT HILL, BIDDEFORD, MAINE" BY DOW & COULUMBE, INC. DATED SEPTEMBER 9, 1994. ON FILE AT THE CITY OF BIDDEFORD ENGINEERING OFFICE.
- "RESURVEY OF THE BOUNDARY LINE BETWEEN LOWELL AND GOLDTHWAITE 'FORT HILL' BIDDEFORD, MAINE, MADE FOR PAUL G. & NANCY T. LOWELL", DATED NOV. 7, 1986. RECORDED IN PLAN BOOK 146, PAGE 33.
- "PLAN SHOWING A BOUNDARY SURVEY MADE FOR RICHARD L. GOLDTHWAITE, 273 HILLS BEACH ROAD, BIDDEFORD, MAINE" BY DOW & COULUMBE, INC. DATED AUGUST 24, 2007. ON FILE AT THE CITY OF BIDDEFORD ENGINEERING OFFICE.

8. BEARINGS SHOWN HEREON ARE IN REFERENCE TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83. ELEVATIONS DEPICTED HEREON ARE IN REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88), BASED GPS OBSERVATIONS.

9. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL SURFACE EVIDENCE LOCATED IN THE FIELD IN CONJUNCTION WITH ANY RECORD INFORMATION AVAILABLE AT THE TIME OF THIS SURVEY (SUE LEVEL C), AND MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS AND/OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION.

10. HIGHEST ANNUAL TIDE (H.A.T.) IS SHOWN PER THE NATIONAL OCEAN SERVICES (N.O.S.) ELEVATION FOR BIDDEFORD OF 7.4 FEET (NAV88) AS STATED IN THE CITY OF BIDDEFORD ZONING ORDINANCE "UPLAND EDGE OF WETLAND" SEE ARTICLE XIV, SECTION 17.

10.1. THE NEAREST STATION PUBLISHED IN 2018 BY THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, IN THE VICINITY OF THE SURVEYED PROPERTY IS CAMP ELLIS, SAGO RIVER, STATION ID: 8418606 WITH AN ELEVATION 6.6 FEET NAV88.

11. THE LOCUS PROPERTY AS DEPICTED HEREON FALLS PARTIALLY WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR THE CITY OF BIDDEFORD, MAINE, YORK COUNTY, COMMUNITY-PANEL NUMBER 230145 0006 B, HAVING AN EFFECTIVE DATE OF MAY 15, 1984. THE LOCUS FALLS WITHIN MULTIPLE AREAS IDENTIFIED AS:

- ZONE C: AREAS OF AREAS OF MINIMAL FLOODING
- ZONE A2: AREAS OF 100-YEAR FLOODING, BASE FLOOD ELEVATIONS & FLOOD HAZARD FACTORS DETERMINED, ELEVATION 9 FT (NGVD29), 8.3 FT (NAV88).
- ZONE V2: AREAS OF 100-YEAR COASTAL FLOODING WITH VELOCITY (WAVE ACTION) BASE FLOOD ELEVATIONS & FLOOD HAZARD FACTORS DETERMINED. ELEVATION 11 FT (NGVD29), 10.3 FT (NAV88) & ELEVATION 12 FT (NAV29), 11.3 FT (NAV88).

12. BOUNDARY NOTES:

- 12.1. UNDERGROUND UTILITY EASEMENT: SEE BOOK 16181, PAGE 928, DATED OCTOBER 12, 2011, CROSSING THE LAND OF STANVICK, MAP 56, LOT 18 FROM UTILITY POLE # 83 AND EXTENDING TO THE NORTHEAST CORNER OF THE KAY HOUSE AT 282 HILLS BEACH ROAD. LIMITED TO CERTAIN UNDERGROUND UTILITIES APPROXIMATELY LOCATED LOCATION SHOWN.
- 12.2. THE SURVEYED PROPERTY WAS CONVEYED WITH ANY INTEREST IN COMMON WITH OTHERS THE PREDECESSOR IN TITLE MAY HAVE TO THE AREA IN AND TO THE SO CALLED "SHORT SANDS" AKA "SHORT SANDS BEACH" SEE BOOK 16309, PAGE 193, DATED DECEMBER 5, 2011 AND BOOK 18512, PAGE 767, DATED.
- 12.3. THE INTERTIDAL ZONE IS SUBJECT TO A PUBLIC TRUST CREATED BY THE MASSACHUSETTS COLONIAL ORDINANCE OF 1641-47. USES INCLUDING, BUT NOT LIMITED TO, FISHING, FOWLING AND NAVIGATING ON THE AREA BETWEEN HIGH AND LOW TIDE. SEE MRS TITLE 12, §571.
- 12.4. THE RIGHTS BEYOND HIGH WATER: THE LOCUS PARCEL WAS CREATED BY MULTIPLE PARCELS. THE PREDECESSOR IN TITLE, CLARENCE GOLDTHWAITE, OF THE ROAD LOT, LOCKE LOT AND POOL LOT WERE CONVEYED TO AND ALONG HIGH WATER. CLARENCE GOLDTHWAITE APPEARING TO RETAIN RIGHTS BETWEEN HIGH AND LOW TIDE. THE POOL LOT WAS CONVEYED "TOGETHER THE USE OF THE SHORE ADJACENT".
- 12.5. THE FALL LOT WAS CONVEYED BY CLARENCE GOLDTHWAITE TO WATER R. FALL & MARY J. FALL (AKA HOOPER) ON OCTOBER 22, 1963 IN BOOK 885, PAGE 376 CALLING FOR THE "THE WATERS OF THE COVE" AND "ALONG THE SHORE". THE FALL LOT WAS LATER DESCRIBED IN BOOK 1199, PAGE 99 DATED OCTOBER 2, 1951 AS "ALONG THE HIGH WATER MARK TO THE SOUTHWESTERLY SIDE OF THE ROAD CONVEYED AS A PORTION OF THE OVERALL LOCUS PARCEL. PLAN REF. B SHOWS THE BOUNDARY RUNNING ON THE LINE NOT FOLLOWING HIGH WATER A DISTANCE OF 123.58'. A CONVEYANCE TO MILES YORK OF NON-BUILDABLE COASTAL WETLANDS DATED FEBRUARY 24, 2010 BOOK 15831, PAGE 295 CALLS FOR "ALONG THE LAND OF KAY (PREDECESSOR IN TITLE) TO THE HIGHWATER MARK" THIS CREATES CLOUDED TITLE THE AREA BELOW THE LINE SHOWN.

PURPOSE OF THIS PLAN

THIS PLAN DEPICTS RECONSTRUCTION OF A NON-CONFORMING STRUCTURE TO MEET THE SHORELAND SETBACK REQUIREMENT TO THE GREATEST PRACTICAL EXTENT, PURSUANT TO ARTICLE XIV SHORELAND ZONING ORDINANCE, SECTION 12.C.4 OF THE CITY OF BIDDEFORD'S LAND DEVELOPMENT REGULATIONS. THE NEW BUILDING SHALL BE NO CLOSER THAN 116 FEET FROM THE HIGHEST ANNUAL TIDE (H.A.T.) OF THE GUT, AS DENOTED ON THIS PLAN AND SHALL NOT EXTEND BEYOND THE EXISTING FOOTPRINT OF BUILDING #1. THIS CONDITION DOES NOT LIMIT ANY EXPANSION OF THE RECONSTRUCTED BUILDING, RATHER IT LIMITS ANY BUILDING CONSTRUCTION CLOSER TO THE PROJECTED RESOURCE THAN THE EXISTING LIMITS OF THE STRUCTURE. EXPANSION MAY OCCUR, PURSUANT TO SECTION 12.C.1.C OF THE BIDDEFORD SHORELAND ZONING ORDINANCE, AWAY FROM THE RESOURCE, AND WILL REQUIRE REVIEW AND APPROVAL FROM THE BIDDEFORD CODE ENFORCEMENT OFFICE.

CITY PLANNER

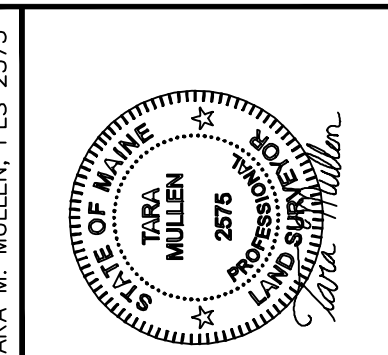
NOTE: THIS PLAN IS SIGNED BY THE CITY PLANNER ON BEHALF OF THE BIDDEFORD PLANNING BOARD AND SHALL BE DEEMED TO HAVE BEEN SIGNED BY THE INDIVIDUAL MEMBER OF THE PLANNING BOARD EVIDENCING APPROVAL OF THE FINAL PLAN

DAVID GALBRAITH, ASSISTANT CITY PLANNER, DULY AUTHORIZED TO DATE
SIGN ON BEHALF OF THE BIDDEFORD PLANNING BOARD

SURVEYORS CERTIFICATION:

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

Tara Mullen
TARA M. MULLEN, MAINE PLS 2575
4/14/22
DATE



1	TMM 10/18/21	REVISED LAND USE REGULATIONS PER GEO COMMENTS
2	TMM 10/19/21	REVISED H.A.T. LINE FROM D.E.P. TO N.O.S.
3	TMM 11/11/21	REVISED DIMENSIONAL REQUIREMENTS PER C.E.O. COMMENTS
4	TMM 11/22/21	REVISED DIMENSIONAL REQUIREMENTS PER C.E.O. COMMENTS AND ADDED APPROXIMATE LOCATION OF WATER SHUT OFF VALVES
5	TMM 4/14/22	ADDED PURPOSE OF THIS PLAN NOTE PER C.E.O. COMMENTS
6	TMM 3/17/23	REVISED NAME OF CITY PLANNER & CORRECTED PAVEMENT AREA
REV BY:	DATE:	STATUS:
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK.		



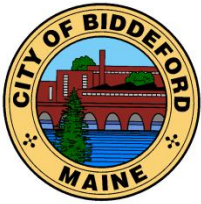
RECORD OWNER:
PETER CAMERON HYZER &
JENNIFER FEELEY HYZER
17206 SE 38TH CIRCLE
VANCOUVER, WA 98683
BOOK 18512, PAGE 767

BOUNDARY & EXISTING CONDITIONS SURVEY

OF:
LAND OF HYZER
280 HILLS BEACH ROAD
BIDDEFORD, MAINE 04005
FOR:
CALEB JOHNSON STUDIO
110 EXCHANGE ST
PORTLAND, MAINE 04101

DRAWN	CHECKED
TMM	SPD
PROJECT NO.	DATE
21100	10/15/21
SHEET SIZE	SCALE
24" x 36"	1" = 30'

SHEET 1 OF 1



CITY OF BIDDEFORD

Planning and Development Department

David C.M. Galbraith
Deputy Director/City Planner
205 Main Street
P.O. Box 586
Biddeford, ME 04005
(207) 284-9115

David.Galbraith@biddefordmaine.org

PLANNING BOARD STAFF REPORT

TO: Chair Patoine and Members of the Biddeford Planning Board

FROM: David C.M. Galbraith, City Planner & Deputy Director of the Planning & Development Dept.

DATE: April 24, 2023

RE: **2023.20 Sketch Plan Application for Travis and Lisa Wing to build a private way to standard for 3 new single family home lots and the existing lot (4 in total). Property is located at 1 Moxie Lane (Tax Map 77, Lot 22) in the SR1 & RF zones and the shoreland overlay.**

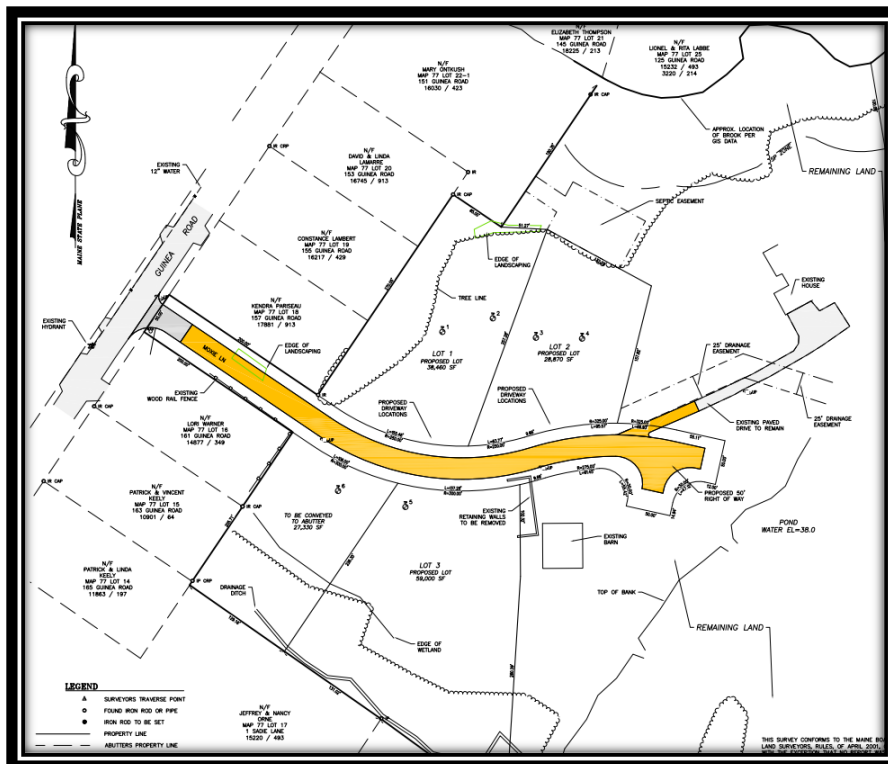
MEETING DATE: May 3, 2023 at 6:00 PM

1. INTRODUCTION

The Applicants and property owners, Travis and Lisa Wing with their agent Paul Gadbois, Project

Engineer is seeking sketch plan review for the creation of three (3) new lots for the development of single-family homes. An additional lot, being created, is proposed to be "conveyed to abutter" although the specific abutter was not identified on the plans. Moxie Lane is currently a paved driveway serving the a single house (1 Moxie Lane) however, the existing driveway is proposed to be improved to a four lot subdivision roadway standard. The subject property is 21 acres in area and the three proposed lots will be;

- 1) Lot # 1 = 38,460 square feet;
- 2) Lot # 2 = 28,870 square feet and;
- 3) Lot # 3) 59,000 square feet in area.



2023.20 Sketch Plan Application for Travis and Lisa Wing to build a private way to standard for 3 new single family home lots and the existing lot (4 in total). Property is located at 1 Moxie Lane (Tax Map 77, Lot 22) in the SR1 & RF zones and the shoreland overlay.

Planning Board Meeting Date: May 3, 2023



Moxie Lane Existing Conditions

2. PROJECT DATA/INFORMATION

1.	Applicant:	Travis & Lisa Wing 1 Moxie Lane Biddeford, ME 04005
2.	Owner of Property:	Same as Applicant
3.	Agent:	Paul Gadbois PO Box 327 Saco, ME 04072
4.	Surveyor:	Same as above
5.	Project Location:	1 Moxie Lane
6.	Project Tax Map #/Lot #:	Tax Map 77, Lot 22
7.	Lot Size:	21 Acres
8.	Base Zoning:	SR1 & RF
9.	Overlay Zoning:	SP-Moora Brook
10.	Existing Use:	Single Family Home

2023.20 Sketch Plan Application for Travis and Lisa Wing to build a private way to standard for 3 new single family home lots and the existing lot (4 in total). Property is located at 1 Moxie Lane (Tax Map 77, Lot 22) in the SR1 & RF zones and the shoreland overlay.

Planning Board Meeting Date: May 3, 2023

11.	Proposed Use:	4 Single Family Homes with a private way
12.	Approvals Required:	Subdivision
13.	Uses in the Vicinity:	Residential
14.	Waivers Needed:	a. None
18.	Waivers Granted:	a. None
22.	Other Non-City Permits Required:	
23.	LDR Attachment A: Fees Paid:	Application Fees Paid, not escrows
25.	Planning Board Review History:	N/A

3. REVIEW PROCESS

Per City ordinance, this application is subject to Site Plan (Land Development Regulations, Article XI) review and approval by the Planning Board.

4. Departmental Review Comments:

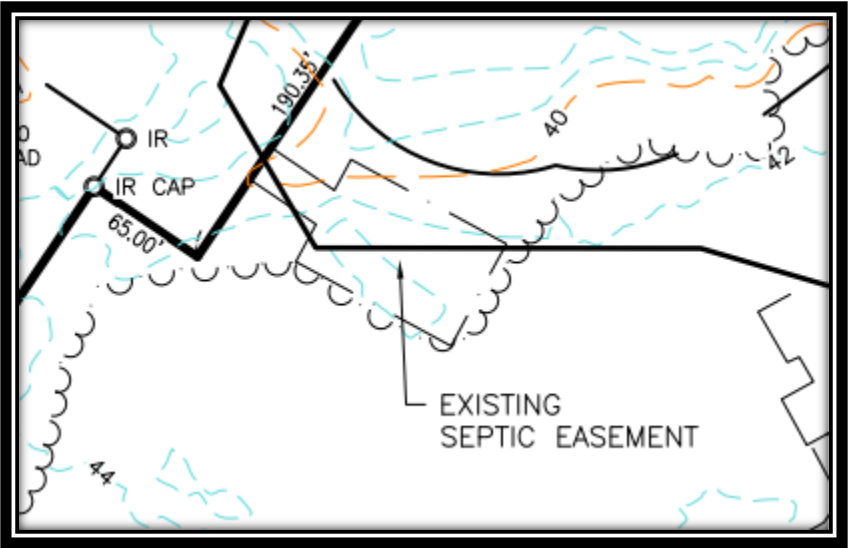
A. Planning:

1. The 27,330 square foot lot illustrated on the plans stated “to be conveyed to abutter”. Revised plans shall illustrate which abutting lot will absorb this lot (by name and notation), however the subject lot has a septic test pit. Is it anticipated that this lot “to be conveyed” will be built upon and require roadway access?
2. The Final Subdivision Application will need to include the following with the formal application submittal:
 - a) Covenants and deed restrictions for each lot of the proposed subdivision lots.
 - b) Homeowner’s Association Documents, which will be reviewed / modified by the City Solicitor, and recorded it the York County Registry of Deeds.
 - c) Easement documents
 - d) The Preliminary Subdivision Plan
 - e) A Stormwater management plan shall be submitted with the formal application.
3. The subdivision proposes to connect to the existing waterline located on the west side of Guinea Road. Please provided details related to how the connection will be make (trench, directional bore, etc.) and what impacts to vehicles traveling past the subdivision (lane closure necessary). Confirm that the Guinea Road is not currently under moratorium.
4. The Preliminary Subdivision Plan illustrates two areas that state “Edge of Landscaping”, one within the proposed roadway and one within an existing treeline. What are these areas representing?
5. Contour lines shall be included on revised plan sets.

2023.20 Sketch Plan Application for Travis and Lisa Wing to build a private way to standard for 3 new single family home lots and the existing lot (4 in total). Property is located at 1 Moxie Lane (Tax Map 77, Lot 22) in the SR1 & RF zones and the shoreland overlay.

Planning Board Meeting Date: May 3, 2023

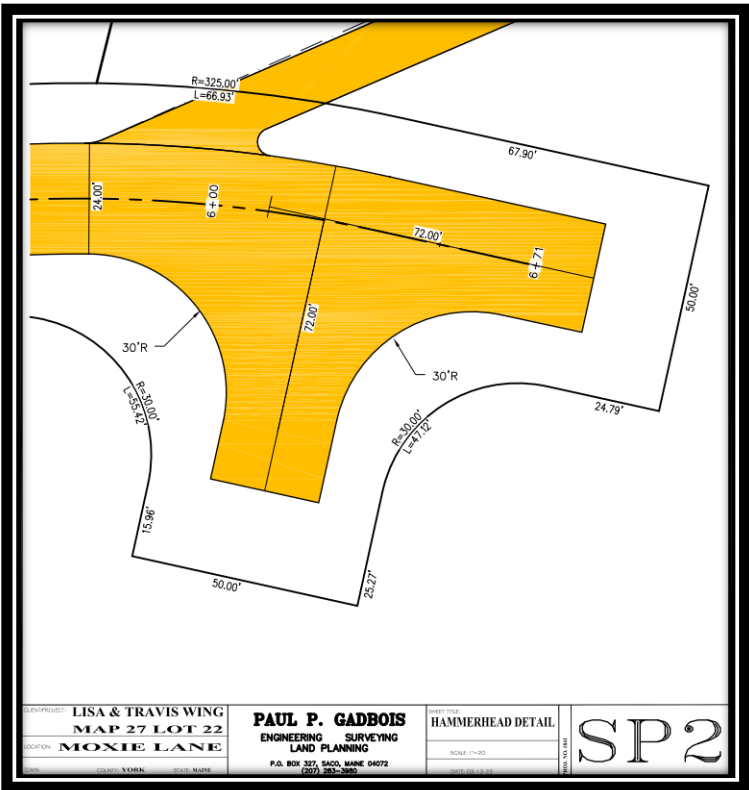
6. The Preliminary Subdivision Plan illustrates a “septic easement” located at the rear of proposed Lots 1 & 2. Is this are proposed to be utilized for septic for the proposed lots or is the easement serving another property?



7. The “existing septic area” illustrates that the septic field is located within the existing tree line. The treeline, if illustrated incorrectly, shall be revised to show existing and proposed.

“Existing Septic Area” Detail

8. The alternative hammer-head turn-around plan (SP2) including dimensions, shall be included on the amended plan sets.



Hammer-Head Detail (SP2)

2023.20 Sketch Plan Application for Travis and Lisa Wing to build a private way to standard for 3 new single family home lots and the existing lot (4 in total). Property is located at 1 Moxie Lane (Tax Map 77, Lot 22) in the SR1 & RF zones and the shoreland overlay.

Planning Board Meeting Date: May 3, 2023

9. Refuse and Recycling: Moxie Lane is currently a private driveway serving a single-family home and it is proposed to remain a private roadway. See section D “Engineering Comments’ item #1. Please respond.
10. Moors Brook: The subject property is located in close proximity to Moors Brook. The “Approx. Location of Brook Per GIS Data” should be field verified, illustrated on revised plans and shall include all associated / required setbacks shall be shown / identified on revised plans.
11. Lot #3: The Preliminary Subdivision Plan has a note on Lot #3 which states “edge of wetland”, which is partially located on Lot #3 and partially on the lot that is proposed to be conveyed to the abutter. The location of the wetland and required setbacks shall be included on plans submitted for preliminary subdivision review.
12. Lot #3 and Land Conveyed to Abutter: When reviewing the subject property via Google Earth it appears that there is a large area of exposed soil without any erosion control measures, adjacent to (within?) the “edge of wetland” as discussed in item #11. Plans to revegetate this area shall be included in revised plans.



Disturbed area / vegetation removed – BMP’s missing - Replanting Plan Required

2023.20 Sketch Plan Application for Travis and Lisa Wing to build a private way to standard for 3 new single family home lots and the existing lot (4 in total). Property is located at 1 Moxie Lane (Tax Map 77, Lot 22) in the SR1 & RF zones and the shoreland overlay.

Planning Board Meeting Date: May 3, 2023

13. Utilities: Note # 6 on the Preliminary Subdivision Plan states “The lots to be served by public water, underground utilities and on lot septic” yet the plans illustrate the use of utility poles. This shall be corrected on revised plans.

14. Setbacks: Revised plans shall include setback lines / building envelopes for lots #1-3

B. Code Enforcement:

1. No Comments Received.

C. Public Works:

1. Comments for the Public Works Department are being review by the City’s Engineer and our Peer reviewer.

D. Engineering Comments: Craig Chekan, Director of Engineering:

1. Trash Operations: Currently, the private owner wheels trash to Guinea Road for City Pickup. Unless a waiver is requested by all lot owners and granted, no City trash truck will enter Moxie Lane – thus requiring all trash to be wheeled to Guinea Road.

2. Site Plans do not specify:

- a. Road material (gravel vs. asphalt)
- b. Show driveway delineations
- c. Clearly annotate that the road will be private

3. Plans should clarify who the 27,300-SF lot is being conveyed to

4. The application says a SWM facility/BMP is proposed, but none are shown

5. How were wetlands delineated? Only one line segment shown

6. Detail/topo will be needed on subsequent submittals for:

- a. Existing ‘top of bank’
- b. Existing southern ‘drainage ditch’
- c. Proposed drainage ditch/culverts

E. Engineering Peer Review: Tom Saucier, P.E. Site Design Associates:

1. Show the building windows on the final plan.

2. Can the road be shifted northerly a bit to provide some separation between the shoulder and existing utility poles?

3. A maintenance agreement will be required per section 51-D.6. of the code.

2023.20 Sketch Plan Application for Travis and Lisa Wing to build a private way to standard for 3 new single family home lots and the existing lot (4 in total). Property is located at 1 Moxie Lane (Tax Map 77, Lot 22) in the SR1 & RF zones and the shoreland overlay.

Planning Board Meeting Date: May 3, 2023

4. Is the water service existing? Will any excavation in Guinea Road be required?
5. Proposed monumentation should be shown on the final plan.
6. The plans will need to be updated to request the FD's modifications to the turnaround.

F. Police Department:

1. No Comments received.

G. Fire:

1. The alternative hammer-head turn-around plan (SP2) including dimensions, shall be included on the amended plan sets.

H. Traffic Peer Review:

1. Due to the small scale of the proposed three (3) lot subdivision, a Peer Traffic review is not warranted.

1. STAFF REVIEW

- **APPLICATION COMPLETENESS:** This application is for sketch plan approval so the purpose of this memorandum is to help identify missing submittal requirements and / or items Staff believes are important and necessary for the continued review of this plan.
- **ZONING:** The proposed use of the three (3) proposed lots is for the construction of a single family on each of the three (3) identified lots which are permitted uses within the SR-1 Zoning District. As currently proposed, each of the lots would meet the required dimensional standards including building height, building setback, frontage, and lot coverage requirements.

- **REVIEW STANDARDS:**

In general, staff found the sketch plan application to satisfy City subdivision and site plan requirements. However, City Staff and the City's third party civil engineer, identified a number of technical plan elements which need to be addressed by the Applicant in the revised application.

- **WAIVERS:** The applicant is not seeking any waivers at this time.

2023.20 Sketch Plan Application for Travis and Lisa Wing to build a private way to standard for 3 new single family home lots and the existing lot (4 in total). Property is located at 1 Moxie Lane (Tax Map 77, Lot 22) in the SR1 & RF zones and the shoreland overlay.

Planning Board Meeting Date: May 3, 2023

2. **STAFF RECOMMENDATION**

The Application before the Board is a sketch plan review. Staff has provided the above comments to be incorporated into the Preliminary Subdivision Application. As the Application is for a “sketch plan review” no formal Planning Board action is required. However, the Board should take this opportunity to review the plans, and identify any items not previously identified and additional items the Board may wish to review as part of this application. Should the Board wish to formally make a motion sample motions are provided below:

4. **SAMPLE MOTIONS**

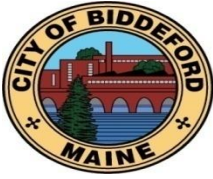
A. Motion to Approve: I motion to APPROVE the Sketch Plan application for the proposal located 1 Moxie Lane (Tax Map 77, Lot 22), within the Suburban Residential & Rural Farm (SR 1 & RF) zones, as well as shoreland overlay zone.

B. Motion to Deny I motion to DENY Sketch Plan approval for the proposal located 1 Moxie Lane (Tax Map 77, Lots 22), within Suburban Residential 1 and Rural Farm (SR1 & RF) zoning districts, for the following reasons:

- 1) _____.
- 2) _____.
- 3) _____.

C. Motion to Table: I motion to TABLE the Final Subdivision and Site Plan approval for the proposal to be located 1 Moxie Lane (Tax Map 77, Lots 22), within the Suburban Residential 1 & Rural Farm (SR1 & RF) zoning districts, for the following reasons:

- 1) _____.
- 2) _____.
- 3) _____.

**City of Biddeford – Planning Department****Planning Board Application**

P.O. Box 586, 205 Main Street Biddeford, Maine 04005
207-284-9115

Type of Application:

☐ Shoreland Zoning Permit ☐ Site Plan Review ☐ Extraction
☐ Conditional Use Permit ☒ Subdivision ☐ Private Way
☐ Other: _____

Applicant Information:

Name: _____ Travis and Lisa Wing
 Mailing Address: _____ 1 Moxie Lane Biddeford
 Telephone: _____ (207) 205-9092
 Email: _____ stumblinfarm@gmail.com

What is your legal interest in the property?

☒ Owner ☐ Potential Buyer with Contract ☐ Lease/Rental Agreement

Owner's Information:

Name: _____
 Mailing Address: _____
 Telephone: _____
 Email: _____

Agent's Information:

Name: _____
 Mailing Address: _____
 Telephone: _____
 Email: _____

Engineer/Surveyor's Information:

Name: _____ Paul Gadbois
 Mailing Address: _____ P.O. Box 327 Saco, ME
 Telephone: _____ (207) 283-3980
 Email: _____ pgadbois53@gmail.com

Project Location and Lot Information:

Street Address: _____ 1 Moxie Lane Drainage Watershed: _____ Moors Brook
Tax Map: _____ 77 Lot: _____ 22
Current Zoning: _____ SR1 and RF Shoreland Zoning: _____ SP
 Size of Lot: _____ 21 _____ (X) acres () s.f. Lot Frontage: _____ 50 Feet
 Existing Use of Property: _____ Single Family

Property currently serviced by:

☐ City Road ☐ Public Sewer ☒ Public Water ☒ Public Trash
☒ Private Road ☒ Septic System ☐ Private Well ☐ Private Hauler

Slope Conditions in Area of Construction (if applicable):

☒ Flat (0-3% slope) ☐ Rolling (3-8% slope) ☐ Hilly (8-15% slope) ☐ Steep (15%+ Slope)

Are there any wetlands or waterbodies on the site? ☒ (Yes) ☐ (No) if yes attach information

Is the project within the 100-year floodplain? ☐ (Yes) ☒ (No) if yes attach information

Do you plan to bring fill onto the lot? ☒ (Yes) ☐ (No) If yes attach information

Description of proposed use of property:

Project/Proposed Use:

Re-construct private way to 4-lot standard for access to three new single family residential lots.

Property to be Serviced by:

☐ City Road ☐ Public Sewer ☒ Public Water ☒ Public Trash
☒ Private Road ☒ Septic System ☐ Private Well ☐ Private Hauler

Limits of Disturbance: 26,650 () acres (X)s.f.

Net change in impervious cover: 10,315 () acres (X)s.f.

Is this project part of a larger project? ☐ (Yes) ☒ (No)

Is the project proposing a new Private or Public Road? ☒ (Yes, Private) ☐ (Yes, Public) ☐ (No)

Is this project within the Urbanized Area/MS4 (see [City Drainage Map](#)) ☐ (Yes) ☒ (No)

Is the project proposing any Stormwater facilities/BMPs? ☒ (Yes) ☐ (No)

Will a Traffic Movement Permit (TMP) be required?: ☐ (Yes) ☒ (No)

If in a Shoreland Zone:

Percent of residential lot coverage (Max 20%): -0-

Percent of structure expansion (Max 30%): -0-

If Subdivision Review, number of lots proposed: 4

If a Private Way is proposed, number of lots served: 4

If Site Plan Review, you must provide the following information:

Total new square feet footprint of structure: _____

Total new square feet paving/parking: _____

Waiver Requests (attach details):

1. _____
2. _____
3. _____
4. _____
5. _____

Required Submittal Attachments:

- A. Letters of Approval
 - ☒ Fire Department – Contact Chief or Deputy Chief – 282-9986
 - ☒ Ability to Serve for Water Service – Maine Water – 282-1543
 - ☐ Ability to Serve for Sewer Service – Engineering Department – Tom Milligan 284-9118
 - ☐ Police Department – e-911 Road Name Designation – Contact Joanne Fisk 282-5127
- B. Letter to Planning Board describing project, Waiver requests, proposed improvements, addressing permit requirements, etc.
- C. Photographs of Site.
- D. Architectural renderings/drawings of proposed buildings, as required.
- E. Engineering Plans, as required.
- F. Stormwater Management Report, as required.

Fees (Due at time of Submission):

- \$75 Nonrefundable Administration Fee is required for every application.
- Refer to “Attachment A Fees and Charges” of the Land Development Regulations for more information. Consult with Planning Staff if you have questions.

Required Signatures:

By signing this application, as the foresaid applicant or authorized agent:

- I certify that I have read and completely understand the application;
- I certify that the information contained in this application and its attachments are true and correct;
- I understand that all information provided on this form and all other documents submitted as part of my proposal is a matter of public record;
- I understand that copies of this information may be supplied upon request to an interested party.
- I understand that additional funds may be required through the course of the review for special studies, legal review costs, and/or engineering review.
- I understand that by submitting an application I am not guaranteed a place on any particular agenda. I further understand that the City Planner will place me on an agenda for review when the application is deemed substantially complete.

Will the proposed project cause 1 acre or more of site disturbance?: __ (Yes) X (No)

- **If Yes, applicant is responsible for any required Maine Construction General Permits and shall comply with the requirements of DEP Chapter 500 Stormwater Regulations, as they apply.**

~~Signature~~ of Applicant: _____

Date 3/12/23

~~Signature~~ of Property Owner: _____

Date 3/12/23

DIGITAL SUBMITTAL REQUIREMENTS FOR ALL SUBMITTALS:

- A) PDF OF SIGNED APPLICATION
- B) PDFs OF ALL DRAWING SETS AND OTHER REQUIRED SUBMITTAL ATTACHMENTS NOTED ABOVE

HARD-COPY SUBMITTAL REQUIREMENTS FOR PLANNING BOARD APPLICATIONS:

- A) SEVEN (7) FULL-SIZE PAPER COPIES OF DRAWING SETS

DIGITAL SUBMITTAL REQUIREMENTS FOR FINAL APPROVAL:

- A) INDIVIDUALLY NAMED PDFs OF EACH DRAWING (NOT A COMBINED PDF SET)
 - *Individual Drawing PDF Naming Format: 'PROJECT/SHEETSET NAME_INDIVIDUAL DRAWING NAME.pdf'*
- B) PDF COPIES OF ALL PERMIT APPROVALS, APPLICATIONS, REPORTS, NARRATIVES, LETTERS, ETC.
- C) FINAL CAD REFERENCE FILES IN DWG FORMAT (SURVEY & PROPOSED DESIGN LINEWORK)
 - *All drawings & CAD reference files must be to-scale and within the following coordinate systems:*
 - MAINE STATE PLANE WEST NAD83 (Horizontal Datum) & NAVD88 (Vertical Datum)

HARD-COPY SUBMITTAL REQUIREMENTS FOR FINAL APPROVAL:

- A) THREE (3) FULL-SIZE PAPER COPIES OF INDIVIDUAL DRAWINGS REQUIRING BOARD SIGNATURE
- B) ONE (1) FULL-SIZE PAPER COPY OF ENTIRE DRAWING SET FOR ENGINEERING RECORDS

PLEASE CONFIRM WITH PLANNING STAFF FOR CLARIFICATION

SUBDIVISIONS

66 Attachment 2

City of Biddeford

Appendix B Required Information Checklist [Ord. of 6-20-1995]

In order for any application to be considered complete the following information must be provided at least two weeks prior to the Planning Board meeting. All plans for subdivisions shall contain the following information:

	Yes	No	N/A	Remarks
(1) Name of subdivision, owner and engineer or surveyor	X			
(2) Graphic scale, date, drawn, North point and its date, and whether it is true or magnetic	X			
(3) Boundaries of the tract	X			
(4) Existing zoning	X			
(5) Ownership and location of abutting properties	X			
(6) Name, location, width, profile, cross-section, radius of curves, angles of change in direction and center line length of all angles of change in direction and center line length of all proposed streets; other public ways, building lines and easements in the subdivision; intersection of existing streets	X			
(7) Type, location, profile and cross-section of all existing and/or proposed surface water drainage	X			
(8) Location of all existing and/or proposed utilities	X			
(9) Location of all existing and/or proposed sanitary sewers showing size, profile, and cross-section, or description, plan, location of other means of sewage disposal with evidence of successful soil evaluation	X			
(10) Topography at two-foot contour intervals, unless otherwise prescribed by the Board. In addition the location of existing natural or man-made features influencing the layout of the proposed subdivision shall be shown.	X			

BIDDEFORD CODE

	Yes	No	N/A	Remarks
(11) Lot lines and approximate dimensions	X			
(12) Proposed uses of property	X			
(13) Proposed public areas, if any			X	
(14) Copy of deed, or option for purchase, for land being subdivided	X			
(15) Reserved fire lane areas			X	
(16) Location of soil evaluation test pits for each lot on plan	X			
(17) Location of well or water supply for each lot	X			
(18) Aesthetics; trees, berms, shrubs, green strips, parks, etc.	X			
(19) Location and details for sedimentation and erosion control measures	X			
The preliminary of a subdivision shall be drawn at a scale no smaller than 100 feet (1 cm = 12 m) to the inch	X			
A preliminary plan shall include a location map insert, showing the relationship of the proposed subdivision to adjacent properties and public access, and drawn at no smaller scale than 2,000 feet (1 cm = 240 m) to the inch. It is suggested that reduced sections of City maps be used for this purpose.	X			

In addition to the above plat information, the Subdivider shall provide the following documents:

	Yes	No	N/A	Remarks
Valid deed or option indicating an interest held by the subdivider in the parcel of land	X			
Completed application form	X			
Narrative of the proposed project briefly describing the general nature of the project i.e., type of project; residential or commercial; number of lots intended to create	X			
Draft covenants and deeds for each lot proposed		X		Submit @ Final
Easement documents for proposed rights-of-way for utilities, drainage ways, roadways and other		X		Submit @ Final

SUBDIVISIONS

	Yes	No	N/A	Remarks
travelways or public amenities				
Statement of financial capability of subdivider to undertake the proposed project	X			
Statement identifying principals involved in the project	X			
Statement demonstrating that the subdividers have the technical capability to complete the proposed project as presented	X			
Copies of such covenants or deed restrictions as are intended to all or part of the tracts		X		Submit @ Final
Review by water company, power company and City Engineering, Police and Fire Departments	X			See Cover Letters Waiting for Response



PAUL P. GADBOIS PE, PLS

Civil Engineering, Surveying, Land Planning
Structural Engineering, DEP Permitting

P.O. Box 327
Saco, ME 04072
Phone & Fax (207) 283-3980
Email: pgadbois53@gmail.com

March 14, 2023

David Galbraith, Planner
City of Biddeford
205 Main Street
Biddeford, Maine

Re: Travis and Lisa Wing, 1 Moxie Lane, Tax Map 77, Lot 22.

Dear Mr. Galbraith,

The owner / applicants Travis and Lisa Wing wish to subdivide a portion of their 21-acre parcel of land and create 3 new single-family house lots ranging in size from 28,000 to 59,000 square feet. They are also proposing to convey 27,000 square feet to the abutter.

Access to the property is from a 50-foot strip of land and Moxie Lane a private way. The project proposes to upgrade the existing private way to a 4-lot standard.

The property will be serviced by public water, underground utilities from existing overhead power to the proposed lots, and on-lot septic. The proposed lots are located in the SR-1 Zone requiring 100 foot of street frontage and a minimum lot size of 20,000 square feet.

The proposed lots are not located in the stream protection zone.

Wetlands were delineated by Mark Hampton and are not considered wetlands of special significance. See wetland delineation report dated January 23, 2023. No wetland fill is proposed for this project. Suitable soils were found on the proposed lots. See preliminary soil evaluation by Mark Hampton dated January 23, 2023.

The proposed lots according to the soil survey are located on Scantic (Sc) soil group. This soil is not considered prime agricultural soils according to the City of Biddeford Article 6, Performance Standards.

According to Maine Historic Preservation Officer there will be no historic properties affected by the proposed development. Also, according to the director of Maine Natural Areas Program there are no rare botanical features documented with the project area.

The project drains to an unnamed stream which flows into Moors Brook. Moors Brook is not listed as an Urban Impaired Stream. No state or federal permits are required for this project.



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The hammerhead was designed to meet the performance standards for private ways and roads. However, the Fire Department is asking that we meet an alternate design which adds approximately 18.5 feet to the hammerhead legs. The client has no issues with this request. I have shown the alternate design as SP-2.

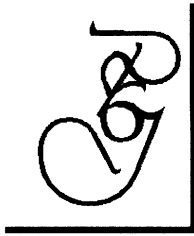
We will submit draft covenants and deeds at Final Submission.

The applicant has the funds to undertake the project and Perron Excavation has completed several projects in the City of Biddeford.

We look forward to discussing this preliminary plan submission with the staff and planning board.

Very truly yours,

Paul P. Gadbois, P.E., P.L.S.



PAUL P. GADBOIS PE, PLS

Civil Engineering, Surveying, Land Planning
Structural Engineering, DEP Permitting

P.O. Box 327
Saco, ME 04072
Phone & Fax (207) 283-3980
Email: pgadbois53@gmail.com

March 12, 2023

Paul P. Gadbois, P.E., P.L.S.
Paul P. Gadbois Engineering
P.O. Box 327
Saco, Maine 04072

Re: 1 Moxie Lane Tax Map 77, Lot 22.

Dear Paul,

This letter will serve as authorization for Paul P. Gadbois Engineering to act as agent on the above referenced project with regards to various land use permitting requirements for the property in Biddeford. This will include any submissions to the DEP, ACOE, and the City.

Very Truly Yours,

Lisa Wing

QUITCLAIM DEED
Maine Statutory Short Form

KNOW ALL MEN BY THESE PRESENTS,

THAT **LISA M. WING AND TRAVIS D. WING**, of the City of Biddeford, County of York, State of Maine,

for no consideration paid, interfamily gift

grant to **LISA M. WING** of the City of Biddeford, County of York, State of Maine, whose mailing address is 1 Moxie Lane, Biddeford, ME 04005 with **quitclaim covenants**, the land in the City of Biddeford, County of York, State of Maine, described as follows:

A certain lot or parcel of land, together with any improvements thereon, situated in the City of Biddeford, County of York and State of Maine, bounded and described as follows:

Beginning on the southeasterly side of the Guinea Road, so called, at the northerly corner of land now or formerly of Louis H. Staples, et al;

Thence southeasterly along land now or formerly of said Staples about sixty-five (65) rods to the easterly corner of land now or formerly of said Staples and to a lot of land conveyed by Raoul E. Labbe and Anita Labbe to said Staples, et al;

Thence northeasterly by said lot now or formerly of said Staples, by another lot now or formerly of said Staples, by land formerly of Nathaniel Emery and by land of owners unknown about ninety four and two thirds (94 2/3) rods to land now or formerly of one Lehouillier;

Thence northwesterly by land now or formerly of said Lehouillier to the brook;

Thence southwesterly, westerly and northwesterly by the brook to the said Guinea Road;

Thence southwesterly by said Road about six hundred sixty two (662) feet to the point of beginning.

Excepted and reserved from the above description are the following;

1. Deed from Ralph L. Lachance and Rachel Lachance to Richard R. Nolette and Dorothy Nolette, dated May 8, 1972 and recorded in said Registry of Deeds in Book 1946, Page 107.
2. Deed from Ralph L. Lachance and Rachel Lachance to Joseph O. Papineau and Maxine Papineau, dated May 4, 1974 and recorded in said Registry of Deeds in Book 2034, Page 621.
3. Deed from Ralph L. Lachance and Rachel Lachance to C & S Development, dated July 19, 1974 and recorded in said Registry of Deeds in Book 2047, Page 266.
4. Deed from Ralph L. Lachance and Rachel Lachance to C & S Development dated July 19, 1974 and recorded in said Registry of Deeds in Book 2047, Page 268.
5. Deed from Ralph L. Lachance and Rachel Lachance to Richard P. Lambert and Constance Lambert, dated September 26, 1974 and recorded in said Registry of Deeds in Book 2054, Page 433.
6. Deed from Fernand Payer, Clair Payeur and Lisa Payeur to Fernand Payeur and Claire Payeur, dated December 16, 2001 and recorded in said Registry of Deeds in Book 11230,

No R.E. Transfer Tax Paid

Page 326.

7. Deed from Lisa Payeur, Fernand Payeur and Claire Payeur to Fernand Payeur and Claire Payeur, dated June 26, 2002 and recorded in said Registry of Deeds in Book 11784, Page 157.

Reference is also made to the Plan of Lots of Ralph L. and Rachel Lachance, dated November 4, 1969 and recorded in said Registry of Deeds in Plan Book 51, Page 14.

The property is subject to a septic sewage easement as described in the deed from Lisa Payeur, Fernand Payeur and Claire Payeur to Fernand Payeur and Claire Payeur dated June 26, 2002 and recorded in said Registry of Deeds in Book 11784, Page 157.

Being the same premises conveyed to Lisa M. Wing and Travis D. Wing by deed of Lisa M. Wing dated April 23, 2008 and recorded in the York County Registry of Deeds in Book 15482, Page 566.

IN WITNESS WHEREOF, We, the said **Lisa M. Wing and Travis D. Wing**, have hereunto set our hands and seals, this 27th day of October, 2010.

**SIGNED, SEALED AND DELIVERED
IN PRESENCE OF**

Lisa M. Wing
Lisa M. Wing
Travis D. Wing
Travis D. Wing

**STATE OF MAINE
YORK, ss.**

October 27, 2010

Then personally appeared the above named **Lisa M. Wing and Travis D. Wing** and acknowledged the foregoing instrument to be their free act and deed.

Before me,

Richard J. Dudzisz
~~Notary Public~~, Attorney at Law

Print Name Richard J. Dudzisz

My Commission Expires _____

RETURN RECORDED DOCUMENT TO:

Lisa and Travis Wing
1 Moxie Lane
Biddeford, ME 04005

BRYCE W. INGRAHAM, ESQ.
338 Main Street
Saco, ME 04072

→ judy/my deeds wing to wing /lisa and travis to lisa

END OF DOCUMENT



PAUL P. GADBOIS PE, PLS

Civil Engineering, Surveying, Land Planning
Structural Engineering, DEP Permitting

P.O. Box 327
Saco, ME 04072
Phone & Fax (207) 283-3980
Email: pgadbois53@gmail.com

March 13, 2023

Scott Gagne, Fire Chief
Fire Department
152 Alfred Road
Biddeford, Maine 04005

Re: Travis and Lisa Wing, Moxie Lane, Tax Map 77, Lot 22.

Mr. Gagne,

The planning department is requesting an ability to serve letter from your department in regard to the above referenced project.

The owners / applicant currently resides on the property and are proposing to upgrade an existing private way to serve 3 new single family residential lots.

The existing residence is located 965 feet from the existing hydrant located on the north side of Guinea Road. The proposed lots are less than 800 feet from the hydrant.

I have reviewed the turning radius movements for a fire truck ladder truck. The radius turning right exiting the development is proposed to be 10 feet in order to keep the existing power in its current location which will require that the ladder truck to be in the left lane of the private way to make the right hand turn onto Guinea Road. All other turns right in, left in, left out were reviewed and found to be not an issue.

Attached are the plans.

Please do not hesitate to call or email if you have any questions.

Very truly yours,

Paul P. Gadbois, P.E., P.L.S.



PAUL P. GADBOIS PE, PLS

Civil Engineering, Surveying, Land Planning
Structural Engineering, DEP Permitting

P.O. Box 327
Saco, ME 04072
Phone & Fax (207) 283-3980
Email: pgadbois53@gmail.com

March 13, 2023

Marcus Knipp
Maine Water
93 Industrial Park Road
Saco, Maine 04072

Re: Moxie Lane Biddeford, Map 77, Lot 22.

Mr. Knipp,

The planning department is requesting an ability to serve letter from your department in regard to the above referenced project.

The owners Travis and Lisa Wing currently resides on the property and are proposing to upgrade an existing private road in order to provide access to 3 new single-family residences.

The project is currently serviced by a 2" water line connected to the existing 12" waterline located on Guinea Road. The owner / developer wishes to install new 1" service lines for the proposed lots into the existing 2".

No fire protection is proposed since the proposed lots are located less than 800 feet from an existing hydrant.

Attached is the sketch plan of the proposed development.

Please do not hesitate to call or email if you have any questions.

Very truly yours,

Paul P. Gadbois, P.E., P.L.S.

Perron Excavation

140 Guinea Rd
Biddeford, ME 04005 US
pperron@maine.rr.com

Estimate

ADDRESS	ESTIMATE	1031
LISA & TRAVIS WING	DATE	03/14/2023

DATE	ACTIVITY	DESCRIPTION	QTY	RATE	AMOUNT
	Sales	INSTALL 671 FT. ROAD, REMOVE EXISTING HOT TOP, BOX CUTTING, RE-SLOPE DITCHES, LOAM, SEED, INSTALL CULVERTS, INSTALL WATER SERVICES			77,165.00

JOB LOCATION 1 MOXIE LN	TOTAL	\$77,165.00
ENGINEERING DESIGN BY PAUL P. GADBOIS		

Accepted By

Accepted Date

ROAD MAINTENANCE AGREEMENT

Road Name

AGREEMENT made this ____ day of _____, 2010 by and between **OWNER** of **TOWN**, Maine and **OWNER** of **TOWN**, Maine, (hereinafter collectively referred to as "Owners" and individually as "Owner").

W I T N E S S E T H:

WHEREAS, the Owners all own lots **on Road Name** in **TOWN**, Maine, with the deed reference for each lot owner being set forth in Paragraph 1 of this Agreement; and

WHEREAS, the Owners have reached agreement as to the sharing of maintenance costs of **Road Name**; and

WHEREAS, the parties desire to set forth their agreements in writing.

NOW, THEREFORE, in consideration of the mutual promises and covenants herein contained, the sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

1. **Identification of Properties.** The Owners acquired title to the lots set forth below by the deeds so referenced:

Tax Map & Lot No.	Lot Owner or Owners	Title Deed Reference

2. Maintenance Costs. The parties agree that this Agreement pertains to the maintenance costs associated with **Road Name**, and that these costs shall include, but not be limited to, snow plowing, sanding and salting, regrading of travelled way and regrading of ditches.

3. Payment of Maintenance Expenses. The maintenance costs described above shall be borne equally by the Owners of lots referenced above.

4. Obligation to Pay Maintenance Costs. Each Owner obligated to pay maintenance costs by virtue of Paragraph 3 above shall contribute to such costs regardless of whether the condition requiring such repair or maintenance directly affects such Owner's lot. However, in the event that damage to the road results from the construction or other work being performed on one lot, the Owners of that lot shall be responsible for repair of the road so that it is restored to the condition which existed prior to any such damage.

5. Decision to Undertake Maintenance.

(a) Any Owner may propose an item of repair and/or maintenance to the other Owners. The decision to undertake a particular item of repair and/or maintenance shall be made by unanimous vote of those Owners obligated to pay maintenance costs pursuant to Paragraph 3 above. Each lot, regardless of the number of owners of record, shall have one vote. Upon unanimous vote of the obligated Owners, contracts may be entered into for such repair and/or maintenance in accordance with the terms of that vote.

(b) All payments required to be made pursuant to the terms of this Agreement shall be due within fifteen (15) days of the approval referred to above, or submission of an invoice, whichever shall first occur. Payments not made on the date when due shall become delinquent and shall, together with interest thereon at the then current rate of judgment interest and the costs of collection thereof, thereupon become a continuing lien on that lot and shall be binding upon the Owners thereof, their heirs, devisees, Personal Representatives, successors and assigns. In the event a judgment is obtained, such judgment shall include interest on the delinquent amount, from the date of delinquency and reasonable attorneys' fees to be fixed by the court, together with the costs of the action.

6. Superiority of Lien. The lien established in Paragraph 5 above, shall be superior to all other liens and encumbrances on the lot, except (a) a first mortgage recorded before or after the date of the delinquency; and (b) liens for real estate taxes and other governmental assessments or charges against the lot.

7. Enforcement of Lien. The lien for delinquencies may be enforced and foreclosed by the Owners, or any of them, in like manner as a mortgage on real estate or by any other means presently or hereinafter provided by law or in equity. A suit to recover a money judgment for unpaid delinquencies, interest, penalties and costs of collection may be maintained against the lot owner personally without foreclosing or waiving the lien securing the delinquency, and a foreclosure may be maintained notwithstanding the pendency of any suit to recover a money judgment.

8. Additional Property. Owners of other lots situated on **Road Name** may join in this Agreement, and have their lots subject to the terms and conditions set forth herein, upon unanimous consent of the owners set forth in Paragraph 1 above. Upon the joinder of any additional parties, all lots shall share equally in the maintenance costs described herein. In such event, all maintenance decisions as set forth in Paragraph 5(a) above shall be made by majority vote of Owners rather than by unanimous vote.

9. Entire Agreement. It is understood and agreed that all understandings and agreements, either oral or in writing, heretofore had between the parties hereto are merged in this Agreement, which alone fully and completely expresses their agreement, and that the same is entered into after full investigation, neither party relying upon any statements or representations not embodied in this Agreement.

10. Binding Agreement, Amendment. This Agreement shall be binding upon the parties hereto, their heirs, personal representatives, successors and assigns. This Agreement may be amended only by written agreement of all of the parties hereto.

11. Governing Law. This Agreement shall be governed in accordance with the laws of the State of Maine.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals on the day, month and year first above written.

WITNESS

NAME

WITNESS

NAME

STATE OF MAINE

YORK, ss.

_____, 2010

Then personally appeared the above-named **Name** and acknowledged the foregoing instrument to be his free act and deed, before me,

Before me,

Notary Public / Attorney-at-Law

Print Name: _____

My Commission Expires _____

STATE OF MAINE

YORK, ss.

_____, 2010

Then personally appeared the above-named **Name** and acknowledged the foregoing instrument to be their free act and deed, before me,

Before me,

Notary Public / Attorney-at-Law

Print Name: _____

My Commission Expires _____



MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

7248

January 23, 2023

Mr. Travis Wing
1 Moxie Lane
Biddeford, ME 04005

Re: Preliminary Soil Evaluation, Proposed Lots, Moxie Lane Biddeford, ME

Dear Travis,

I have completed a preliminary soil evaluation on the proposed 3 lots located on Moxie Lane Biddeford, ME. The soil evaluation was conducted in accordance with the Maine Subsurface Wastewater Disposal Rules dated August 2015, as amended. I evaluated two hand-excavated soil test pits on each proposed lot. The soils found on each lot are somewhat poorly drained marine lacustrine soils. The depth to the limiting factor was 9 to 12 inches.

The soils as evaluated meet the minimum requirements of the state rules. In my opinion, there are suitable soils and area on each lot for a septic system. The disposal bed for a three-bedroom home could be an Eljen Indrain system with a footprint of 15x24 ft. A septic design can be completed at some time in the future.

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

Sincerely,

Mark J. Hampton C.S.S., L.S.E.
Certified Soil Scientist #216
Licensed Site Evaluator #263

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION
OF SOIL CONDITIONS AT PROJECT SITES

Project Name:

Moxie Lane Subdivision

Applicant Name:

Travis Wing

Project Location (municipality):

Biddeford

Exploration Symbol # TP-1 ☐ Test Pit ☒ Boring ☐ Probe

" Organic horizon thickness Ground surface elev. _____

" Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Silt Loam	Grand	Very Friable	
Bw	Yellowish Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
BCg	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cg	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Series/Phase Name: Lamoine Limiting Factor 9 " ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD Slope 2 Percent Hydric Soil ☒ No ☐ Yes Hydrologic Soil Group

Exploration Symbol # TP-2 ☐ Test Pit ☒ Boring ☐ Probe

" Organic horizon thickness Ground surface elev. _____

" Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	F. Sandy Loam	Weak Angular	Very Friable	
Bw	Brown	F. Sandy Loam	Sub Ang Blocky	Friable	
BCg	Olive Gray	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cd	Olive	Silty Clay Loam	Medium Platy	Very Firm	

Soil Series/Phase Name: Lamoine Limiting Factor 11 " ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD Slope 2 Percent Hydric Soil ☒ No ☐ Yes Hydrologic Soil Group

Exploration Symbol # TP-3 ☐ Test Pit ☒ Boring ☐ Probe

" Organic horizon thickness Ground surface elev. _____

" Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	Silt Loam	Fine Grandul	Friable	
Bw	Yellowish Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
BCg	Olive	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cg	Olive	Silty Clay Loam	Medium Platy	Very Firm	

Soil Series/Phase Name: Lamoine Limiting Factor 12 " ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD Slope 2 Percent Hydric Soil ☒ No ☐ Yes Hydrologic Soil Group

Exploration Symbol # TP-4 ☐ Test Pit ☒ Boring ☐ Probe

" Organic horizon thickness Ground surface elev. _____

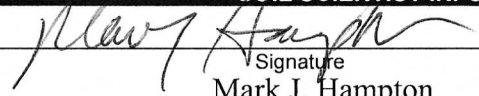
" Depth: ☐ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Ap	Dark Brown	F. Sandy Loam	Grand	Friable	
Bw	Brown	F. Sandy Loam	Fine Grandul	Friable	
BCg	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
Cd	Olive Gray	Silty Clay Loam	Platy	Very Firm	

Soil Series/Phase Name: Lamoine Limiting Factor 12 " ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD Slope 2 Percent Hydric Soil ☒ No ☐ Yes Hydrologic Soil Group

SOIL SCIENTIST INFORMATION AND SIGNATURE



Mark J. Hampton

Name Printed

1/23/2023

Date

263/216

SS License No.

affix professional seal

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:
Moxie Lane Subdivision

Applicant Name: Travis Wing

Project Location (municipality):	Biddeford
----------------------------------	-----------

Exploration Symbol # TP-5 ☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)	Horizon	Color	Texture	Structure	Consistence	Redox
0	Ap	Dark Brown	Silt Loam	Grand	Very Friable	
10	Bw	Yellowish Brown	Silt Loam	Weak Sub Ang Blocky	Friable	
20	BCg	Olive Brown	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
30						
40	Cg	Olive Gray	Silty Clay Loam	Platy	Very Firm	
50						
60						

Soil Series/Phase Name:

Lamoine

Drainage Class

☐ ED ☐ SED ☐ WD ☐ MWD

☒ SPD ☐ PD ☐ VPD

Limiting Factor

10 "

Depth

☒ Groundwater

☒ Restrictive Layer

☐ Bedrock

Soil Details

▶▶

Slope

2

Percent

Hydric Soil

☒ No

☐ Yes

Hydrologic

Soil Group

Exploration Symbol # TP-6 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)	Horizon	Color	Texture	Structure	Consistence	Redox
0	Ap	Dark Brown	F. Sandy Loam	Weak Angular	Very Friable	
10	Bw	Brown	F. Sandy Loam	Sub Ang Blocky	Friable	
20	BCg	Olive Gray	Silty Clay Loam	Thin Platy	Firm	Common and Distinct
40	Cd	Olive	Silty Clay Loam	Medium Platy	Very Firm	
50						
60						

Soil Series/Phase Name:

Lamoine

Limiting Factor

☒ Groundwater
☒ Restrictive Layer
☐ Bedrock

Drainage Class

☐ ED ☐ SED ☐ WD ☐ MWD
☒ SPD ☐ PD ☐ VPD

Slope

2
 Percent

Hydric Soil

☒ No
☐ Yes

Hydrologic

Soil Group

Exploration Symbol # _____		☐ Test Pit	☐ Boring	☐ Probe
_____ " Organic horizon thickness		Ground surface elev. _____		
_____ " Depth:		☐ of exploration, or ☐ to refusal		

Depth below mineral soil horizon (inches)

0	Horizon	Color	Texture	Structure	Consistence	Redox
10						
20						
30						
40						
50						
60						

Soil Details

Soil Series/Phase Name: _____

Drainage Class

☐ ED ☐ SED ☐ WD ☐ MWD
☐ SPD ☐ PD ☐ VPD

Limiting Factor

☐ Groundwater
☐ Restrictive Layer
☐ Bedrock

Depth _____

Slope _____ Percent

Hydric Soil

☐ No
☐ Yes

Hydrologic

Soil Group _____

Exploration Symbol # _____ ☐ Test Pit ☐ Boring ☐ Probe
 _____ " Organic horizon thickness Ground surface elev. _____
 _____ " Depth: ☐ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
0					
10					
20					
30					
40					
50					
60					

Depth below mineral soil horizon (inches)

Soil Details

Soil Series/Phase Name: _____

Drainage Class
☐ ED ☐ SED ☐ WD ☐ MWD
☐ SPD ☐ PD ☐ VPD

Limiting Factor
☐ Groundwater
☐ Restrictive Layer
☐ Bedrock

Depth _____

Slope _____
Percent

Hydric Soil
☐ No
☐ Yes

Hydrologic
Soil Group _____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature
Mark J. Hampton
Name Printed

1/23/2023
Date
263/216
SS License No.

affix professional seal



MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

7248

January 23, 2023

Mr. Travis Wing
1 Moxie Lane
Biddeford, ME 04005

Re: Wetland Delineation, 2+ acre portion of Property at 1 Moxie Lane Biddeford, ME

Dear Travis,

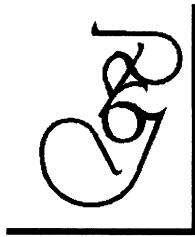
I have completed a delineation of wetlands on the 2+ acre portion of the parcel located 1 Moxie Lane Biddeford, ME. The wetland delineation was completed in accordance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Northcentral and Northeast Regions dated January 2012. These manuals require the presence of three parameters for a wetland to be present, wetland hydrology, hydrophytic vegetation, and hydric soils.

The wetlands I found on the parcel were flagged with yellow flagging. The flagging was labeled in an alphanumeric sequence. The wetland flags were located by GPS equipment capable of locating a point to within three feet. The wetland GPS data has been forwarded to Paul Gadbois to be incorporated into the project plans. The wetlands found on the property are forested wetlands. The wetlands on the property do not meet the definition of wetlands of special significance as defined by Maine Department of Environmental Protection.

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

Sincerely,

Mark J. Hampton C.S.S., L.S.E.
Certified Soil Scientist #216
Licensed Site Evaluator #263



PAUL P. GADBOIS PE, PLS

Civil Engineering, Surveying, Land Planning
Structural Engineering, DEP Permitting

P.O. Box 327
Saco, ME 04072
Phone & Fax (207) 283-3980
Email: pgadbois53@gmail.com

January 30, 2023

Kirt Mohney
Maine Historic Preservation Commission
55 Capitol Street
65 State House Station
Augusta, ME 04333-0065

0186-23

RE: Lisa Wing
Moxie Lane
Biddeford, Maine
Tax Map 77, Lot 22

Dear Staff:

Our client owns approximately 20 acres of property located at off Guinea Road in Biddeford (See attached Delorme Map). The owner is planning to upgrade Moxie Lane to provide access to 3 new residential house lots. (See attached sketch plan)

As part of the planning process, we would like to identify any rare or unique botanical features on this property. We request that you kindly search your available resources and send us a written advisory as to the possible presence of rare, threatened, or endangered plant species and unique or exemplary natural communities on the site that might be a cause of concern.

Thank you for your assistance in conducting this site search. Please do not hesitate to contact me should you have any questions or require additional information. If there are fees for your review, please forward invoice to me.

Very truly yours,

Paul P. Gadbois, P.E., P.L.S.

Encl: Locus Map
Sketch Plan

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.	
	2/16/23
Kirk F. Mohney, State Historic Preservation Officer Maine Historic Preservation Commission	Date



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

February 7, 2023

Paul Gadbois
PO Box 327
Saco, ME 04072

Via email: pgadbois53@gmail.com

Re: Rare and exemplary botanical features in proximity to: #1841, Moxie Lane Subdivision, Biddeford, Maine

Dear Mr. Gadbois:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received February 7, 2023 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Biddeford, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

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

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

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

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

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM
BLOSSOM LANE, DEERING BUILDING



PHONE: (207) 287-8044
WWW.MAINE.GOV/DACF/MNAP

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

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

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

Sincerely,

Lisa St. Hilaire

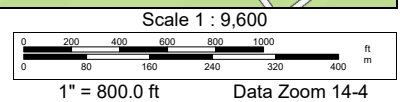
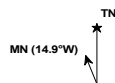
Lisa St. Hilaire | Information Manager | Maine Natural Areas Program
207-287-8044 | lisa.st.hilaire@maine.gov

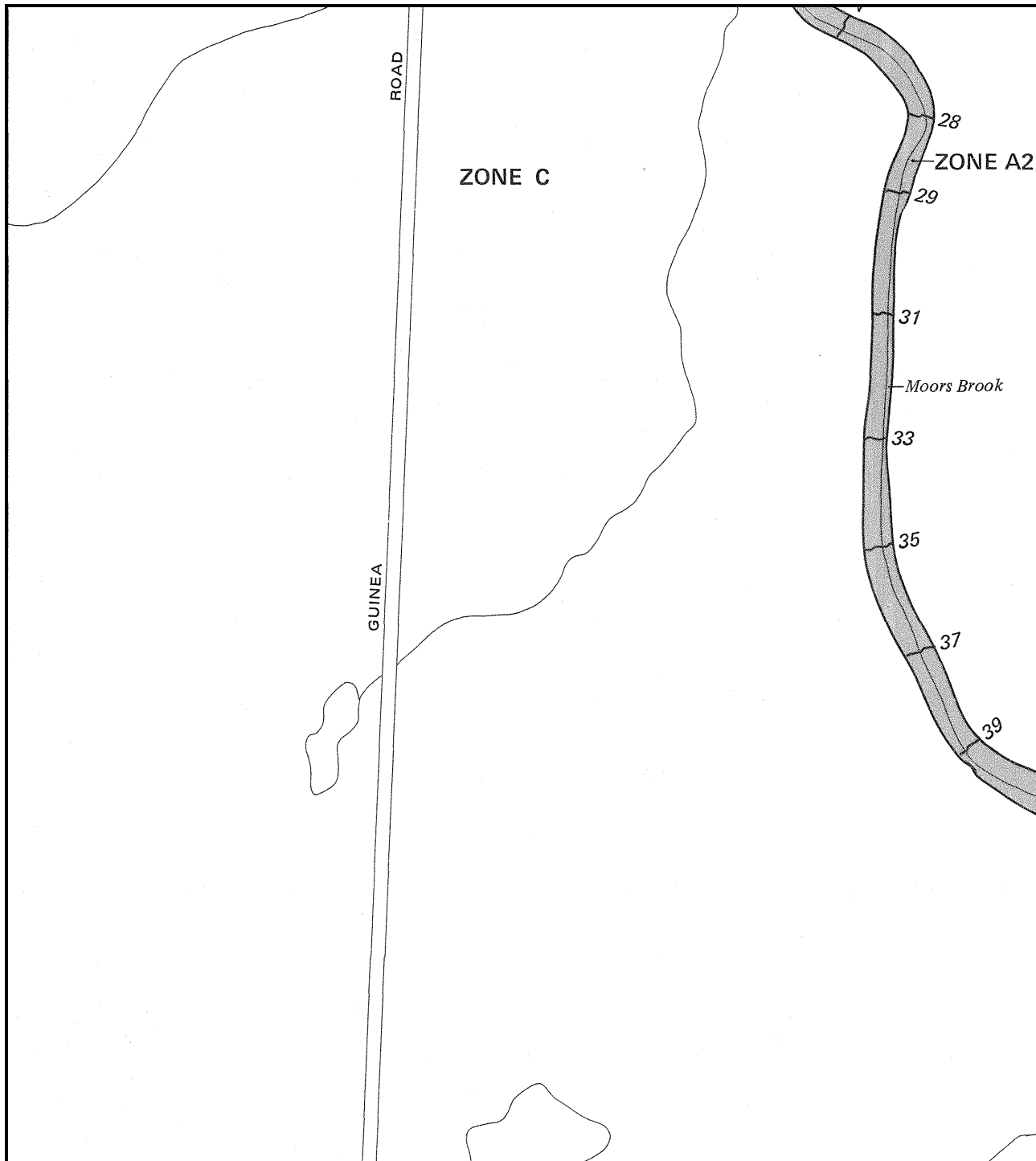


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www.delorme.com





Program, at (800) 638-6620.



APPROXIMATE SCALE

400 0

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
BIDDEFORD,
MAINE
YORK COUNTY

PANEL 5 OF 11
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230145 0005 B

EFFECTIVE DATE:
MAY 15, 1984



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>.

Soil Map—York County, Maine



Map Scale: 1:3,980 if printed on A landscape (11" x 8.5") sheet.

0 50 100 200 300 Meters

0 150 300 600 900 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge ticks: UTM Zone 19N WGS84



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

3/14/2023
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

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 1:20,000.

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: York County, Maine

Survey Area Data: Version 21, Aug 30, 2022

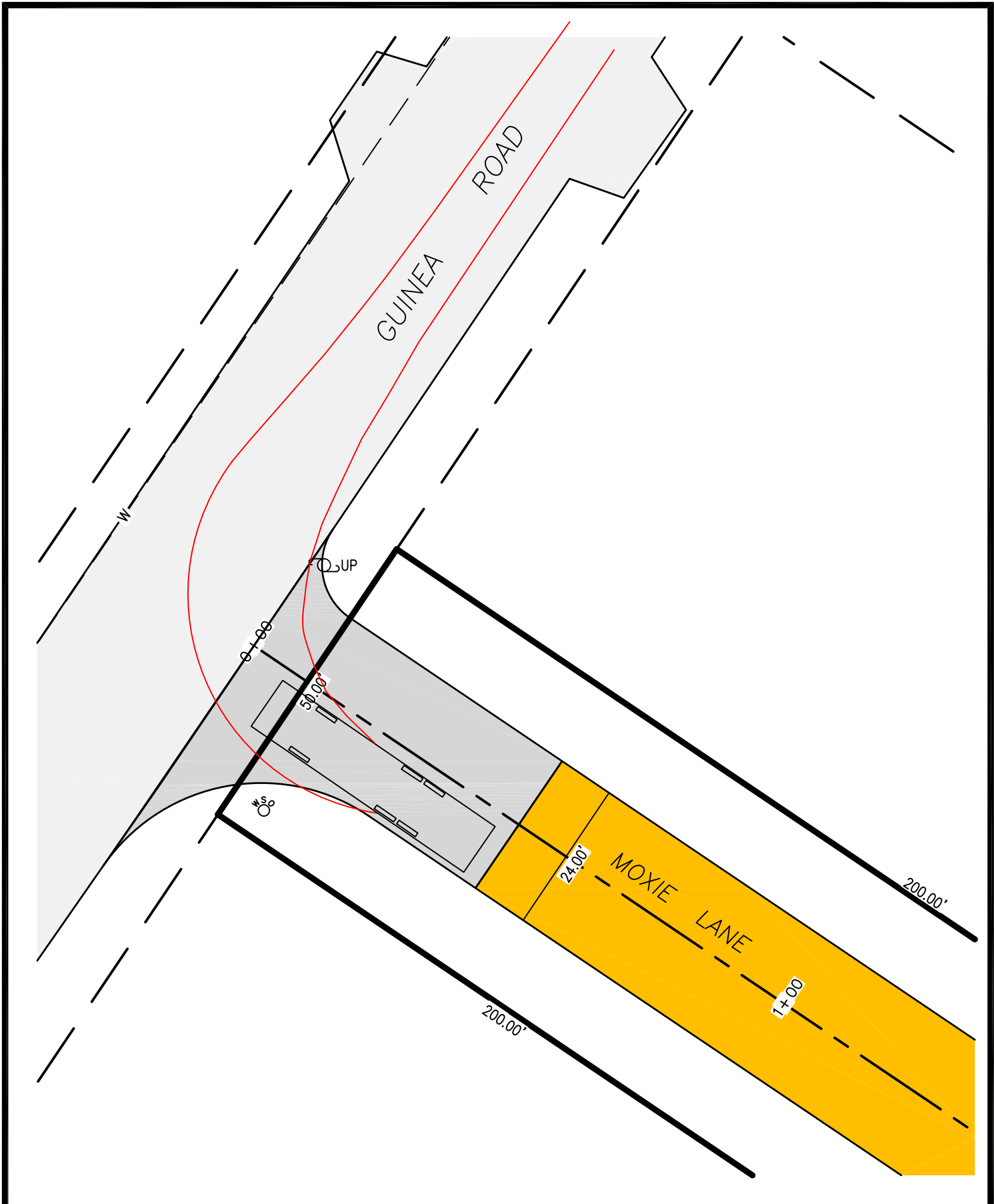
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BuC	Buxton silt loam, 8 to 15 percent slopes	8.0	22.1%
LyB	Lyman-Rock outcrop complex, 3 to 8 percent slopes	2.1	5.8%
Sc	Scantic silt loam, 0 to 3 percent slopes	26.2	72.1%
Totals for Area of Interest		36.4	100.0%



CLIENT/PROJECT: **LISA & TRAVIS WING**
MAP 27 LOT 22

LOCATION: **MOXIE LANE**

TOWN: COUNTY: **YORK** STATE: **MAINE**

PAUL P. GADBOIS
 ENGINEERING SURVEYING
 LAND PLANNING

P.O. BOX 327, SACO, MAINE 04072
 (207) 283-3980

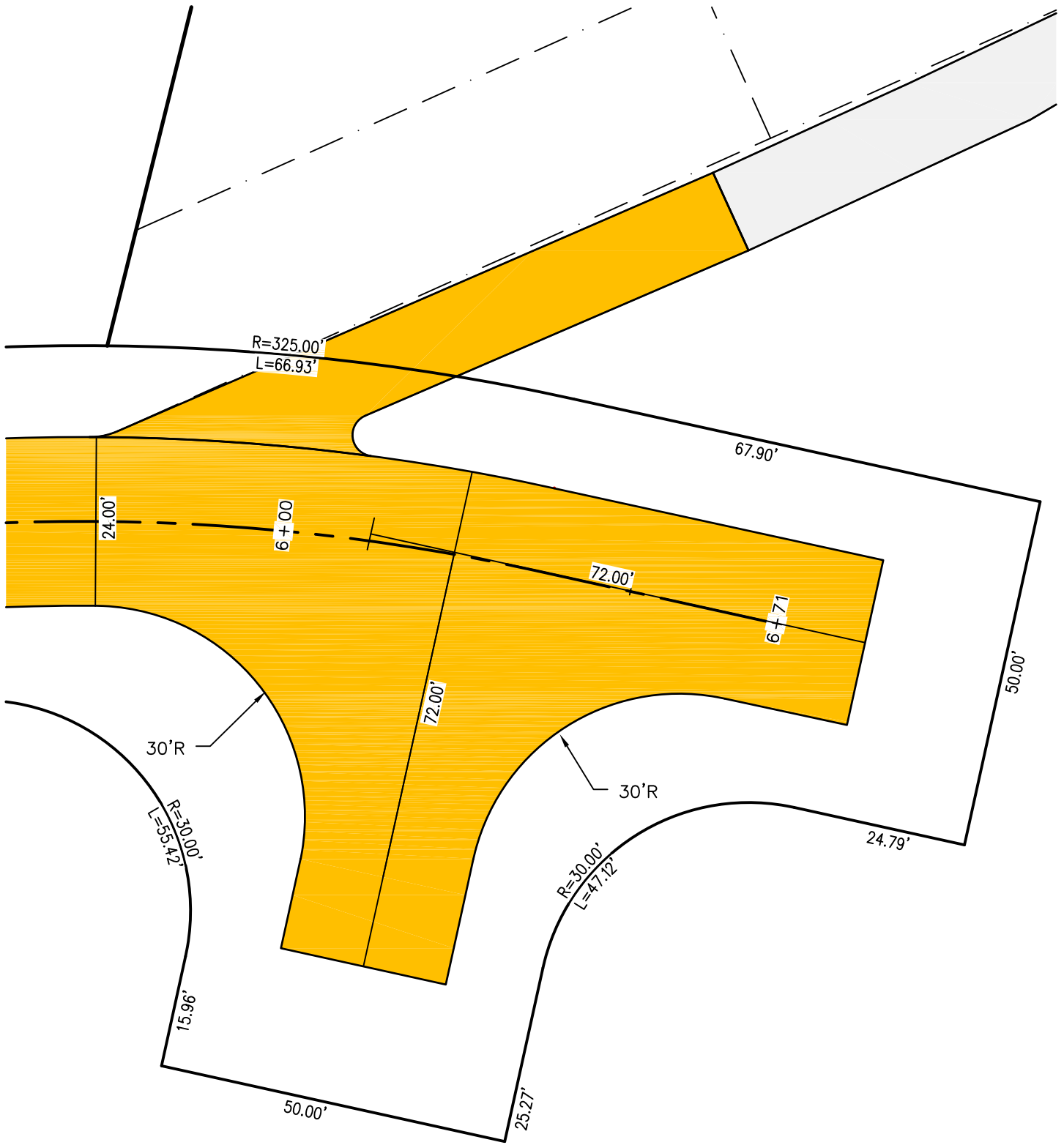
SHEET TITLE: **LADDER TRUCK TURNING**

SCALE: 1"=20'

DATE: 03-13-23

PROJ. NO. 1841

SP 1



CLIENT/PROJECT: **LISA & TRAVIS WING**
MAP 27 LOT 22

LOCATION: **MOXIE LANE**

TOWN: COUNTY: **YORK** STATE: **MAINE**

PAUL P. GADBOIS
ENGINEERING SURVEYING
LAND PLANNING

P.O. BOX 327, SACO, MAINE 04072
(207) 283-3980

SHEET TITLE: **HAMMERHEAD DETAIL**

SCALE: 1"=20'

DATE: 03-13-23

PROJ. NO. 1841

SP2

LOCATION MAP

1"= 200'



PLAN INDEX

1. COVER SHEET
2. SUBDIVISION PLAN
3. EXISTING CONDITIONS PLAN
4. PLAN AND PROFILE
5. EROSION CONTROL AND DETAILS
6. EROSION CONTROL



PAUL P. GADBOIS

ENGINEERING SURVEYING
LAND PLANNING

P.O. BOX 327, SACO, MAINE 04072
(207) 283-3980

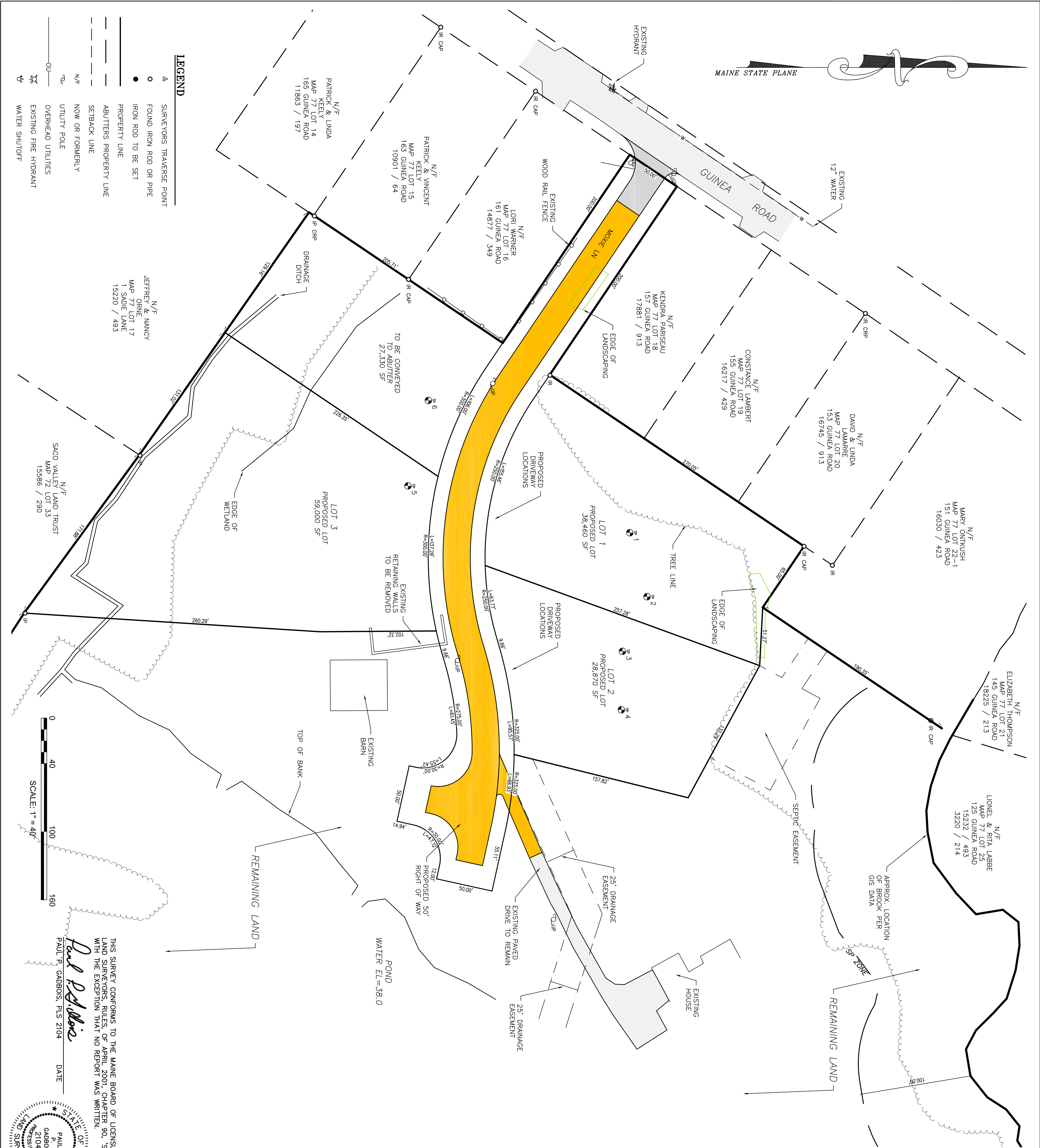
COVER SHEET

LISA & TRAVIS WING
1 MOXIE LANE
BIDDEFORD, MAINE

RECORD OWNER

LISA WING
1 MOXIE LANE
BIDDEFORD, MAINE 04005

DRAWN: P.P.G.	REVISIONS:		
CHECKED: P.P.G.			
SCALE: 1"= 200'			
FIELD BOOK:			
DATE: 03-13-2023			
JOB NO. 1841			
SHEET 1 OF 6			



NOTES:

- RECORD OWNER: LISA WING
1 MOXIE LANE
BIDDEFORD, MAINE
- MAP / LOT: 77 / 22
- TOTAL AREA OF PROPERTY 21.4ACRES.
- PROPOSED USE: SINGLE FAMILY RESIDENTIAL.
- PROPERTY IS LOCATED IN THE SR-1, RF AND SP OVERLAY ZONES.
- THE LOTS TO BE SERVED BY PUBLIC WATER, UNDERGROUND UTILITIES, AND ON LOT SEPTIC.
- THE PROPERTY IS NOT LOCATED IN A FEMA FLOOD ZONE.
- TOTAL AMOUNT OF DISTURBED AREA FOR CONSTRUCTION OF THE PRIVATE WAY IS 26,650 SQUARE FEET.
- THE PROJECT HORIZONTAL DATUM: MAINE STATE PLANE COORDINATE SYSTEM, MAINE WEST ZONE. PROJECT VERTICAL DATUM: NORTH AMERICAN DATUM 1988 (NAVD88). ALL DATA WAS DERIVED USING LEICA GS14 REAL TIME KINEMATICS GPS.
- WETLANDS AND TEST PIT LOCATIONS WERE DELINEATED AND LOCATED BY MARK HAMPTON ASSOCIATES, INC.; SEE WETLAND REPORT AND SOIL REPORT BOTH DATED JANUARY 23, 2023.
- TOPOGRAPHIC INFORMATION WAS DERIVED FROM THE MAINE GIS WEBSITE, EXCEPT FOR DESIGN OF THE PRIVATE WAY WHICH IS BASED ON FIELD SURVEY DATA.
- UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTOR AND / OR DESIGNERS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO BUILDING DESIGN. CONSTRUCTION AND/OR EXCAVATION.
- THE PROPOSED RIGHT OF WAY TO BE A PRIVATE ROAD. THE CITY ENGINEER WILL NOT BE RESPONSIBLE FOR THE CONSTRUCTION AND MAINTENANCE OF ANY KIND SNOW PLOWING OR TRASH PICKUP OF THE PRIVATE WAY AND THAT FURTHER LOT DIVISION UTILIZING THE PRIVATE WAY ARE PROHIBITED WITHOUT PRIOR APPROVAL OF THE PLANNING BOARD.
- A MAINTENANCE AGREEMENT SHALL BE RECORDED IN THE YORK COUNTY REGISTRY OF DEEDS SPECIFYING THE RIGHTS AND THE RESPONSIBILITIES OF EACH LOT OWNER WITH RESPECT TO THE MAINTENANCE, REPAIR AND PLOWING OF THE PRIVATE WAY.

LOCUS DEED REFERENCE:

- A. QUITCLAIM DEED FROM LISA M. WING AND TRAVIS D. WING TO LISA M. WING DATED OCTOBER 27, 2010 AND RECORDED IN THE YORK COUNTY REGISTRY OF DEEDS IN BOOK 15976, PAGE 986.

PLAN REFERENCES:

- A. PLAN SHOWING LOTS OF RALPH & RACHEL LACHANCE RECORDED IN THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 51, PAGE 14.
- B. FINAL PLAN FOR GEORGE GARNACHE RECORDED IN SAID REGISTRY IN PLAN BOOK 309, PAGE 44.

ZONE REQUIREMENTS: (SR1)

WATER NO SEWER

MIN. LOT AREA 20,000 SF
MIN. STREET FRONTAGE 100 FEET
MIN. FRONT YARD 40 FEET
MIN. REAR AND SIDE YARD 10 FEET

ZONE REQUIREMENTS: (RF)

WATER NO SEWER

MIN. LOT AREA 20,000 SF
MIN. STREET FRONTAGE 120 FEET
MIN. FRONT YARD 40 FEET
MIN. REAR AND SIDE YARD 25 FEET

YORK,ss REGISTRY OF DEEDS
Received _____ h _____ m _____ M, and
Filed in Plan Book _____ Page _____
ATTEST: _____
Register

APPROVAL
CITY OF BIDDEFORD
PLANNING BOARD

DATE	_____
CHAIRPERSON	_____
_____	_____
_____	_____
_____	_____
_____	_____

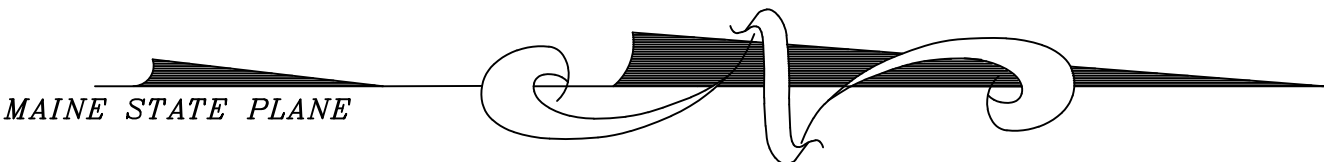
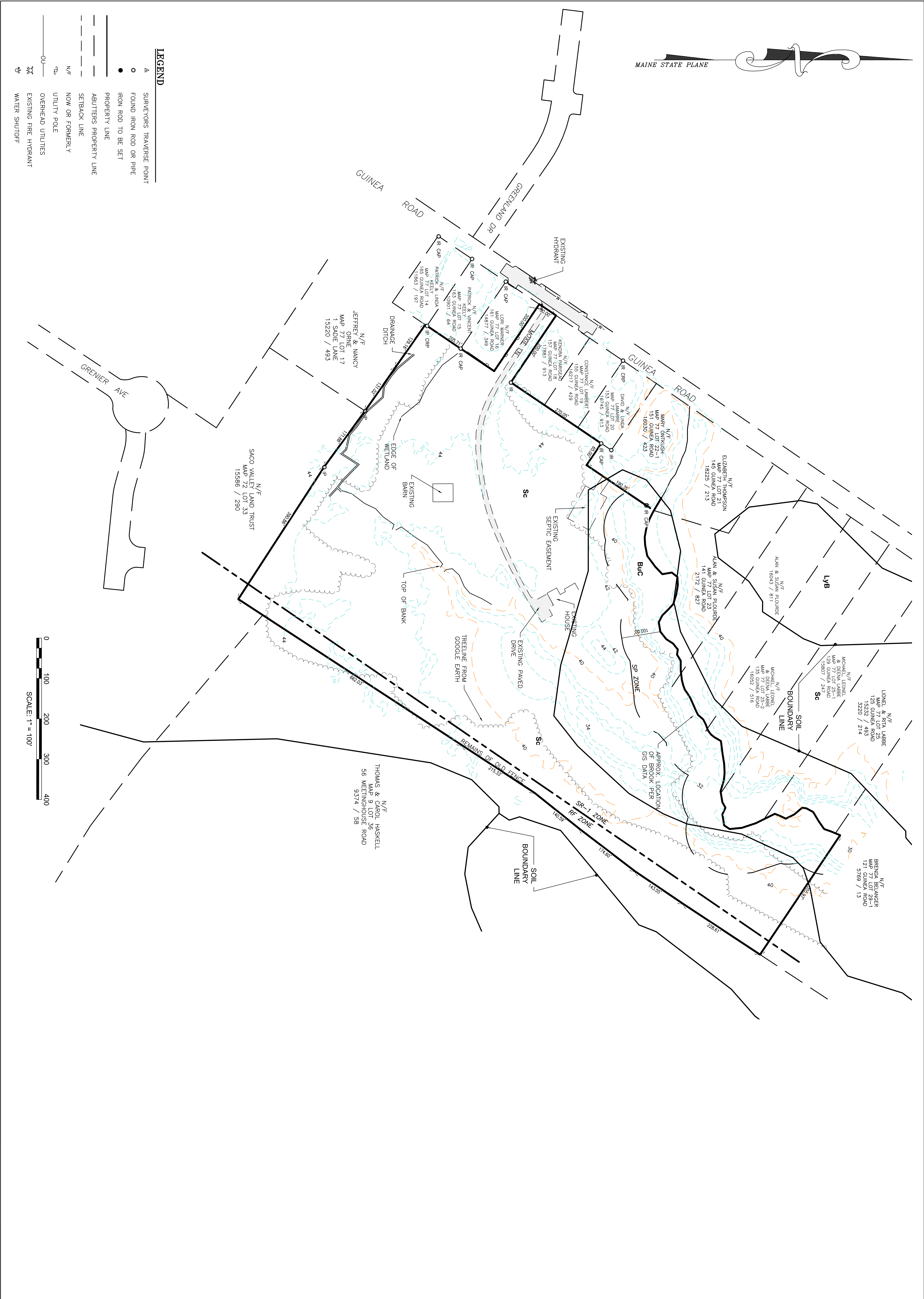
PAUL P. GADBOIS
ENGINEERING SURVEYING
LAND PLANNING
P.O. BOX 327, SACO, MAINE 04072
(207) 283-3980

PRELIMINARY SUBDIVISION PLAN
LISA & TRAVIS WING
1 MOXIE LANE
BIDDEFORD, MAINE

RECORD OWNER
LISA WING
1 MOXIE LANE
BIDDEFORD, MAINE 04005

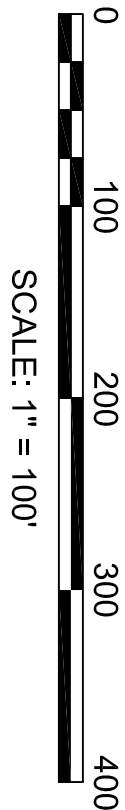
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CHECKED: P.P.G.	
SCALE: 1"= 40'	
FIELD BOOK:	
DATE: 03-13-2023	
JOB NO. 1841	
SHEET 2 OF 6	



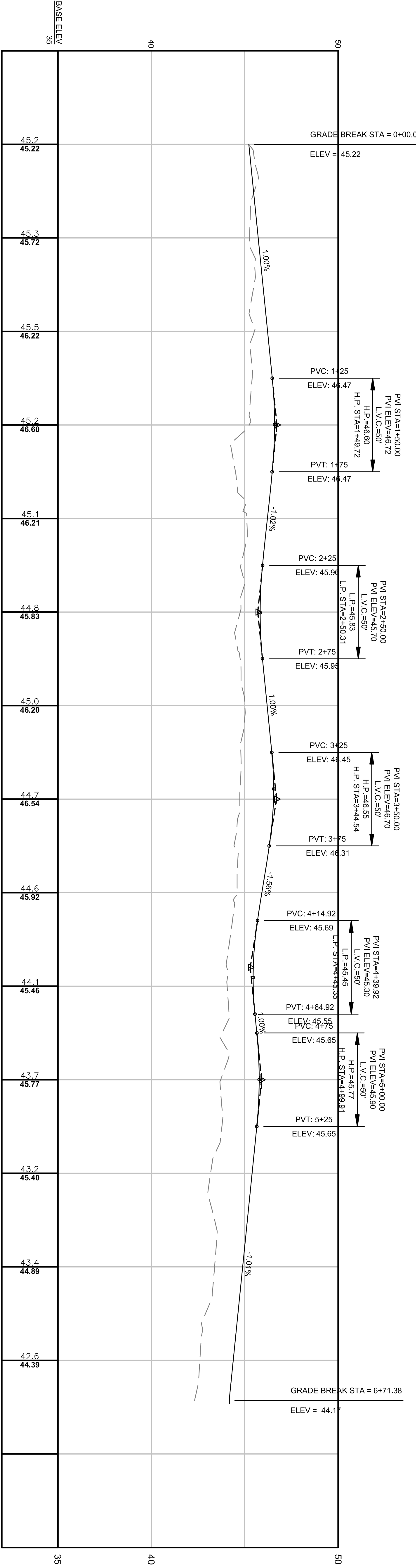
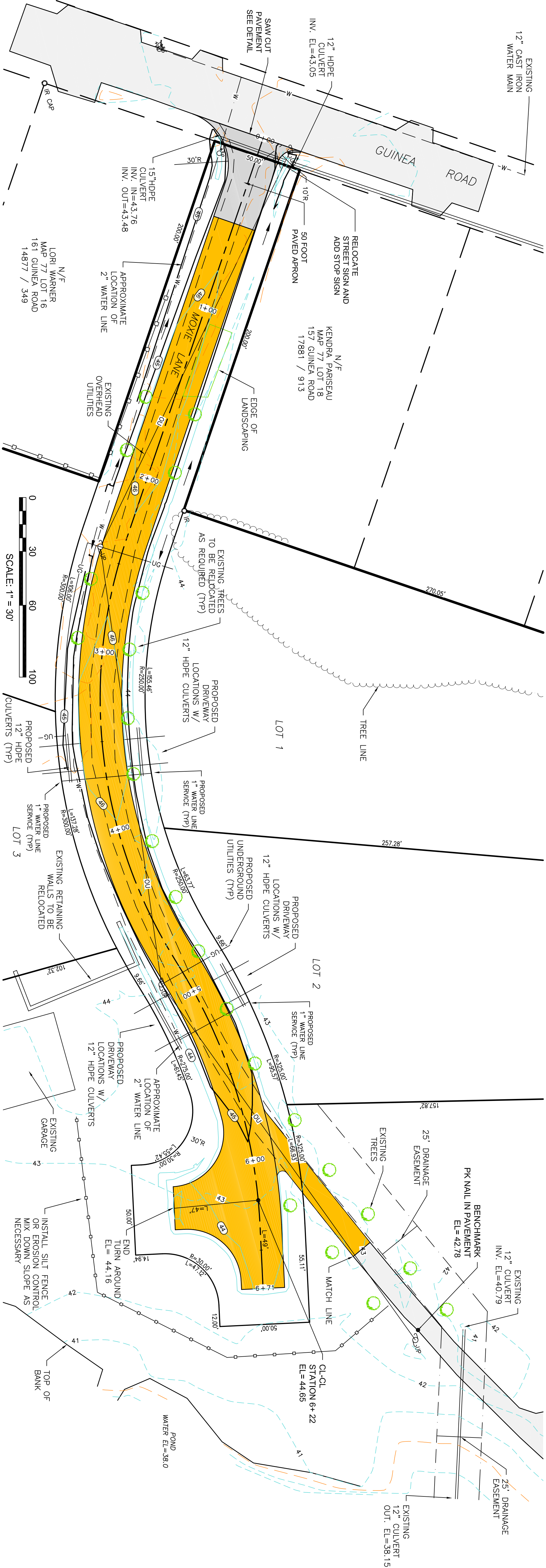


LEGEND

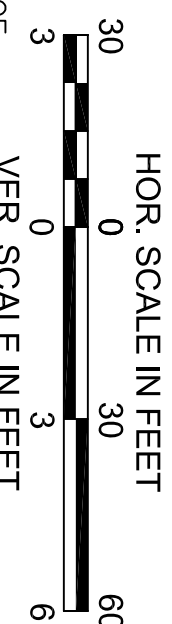
- ▲ SURVEYORS TRAVERSE POINT
- FOUND IRON ROD OR PIPE
- IRON ROD TO BE SET
- PROPERTY LINE
- - - ABUTTERS PROPERTY LINE
- - - SETBACK LINE
- - - NOW OR FORMERLY
- UTILITY POLE
- OVERHEAD UTILITIES
- EXISTING FIRE HYDRANT
- WATER SHUTOFF



	PAUL P. GADBOIS ENGINEERING SURVEYING LAND PLANNING P.O. BOX 327, SACO, MAINE 04072 (207) 283-3980	EXISTING CONDITIONS PLAN LISA & TRAVIS WING 1 MOXIE LANE BIDDEFORD, MAINE	RECORD OWNER LISA WING 1 MOXIE LANE BIDDEFORD, MAINE 04005	DRAWN: P.P.G.		REVISIONS:	
				CHECKED: P.P.G.			
				SCALE: 1"= 100'			
				FIELD BOOK:			
				DATE: 03-13-2023			
				JOB NO. 1841			
				SHEET 3 OF 6			



PROFILE: PCL (1)



PRIVATE WAY NOTES:

1. THE PROPOSED RIGHT OF WAY IS TO BE A PRIVATE ROAD. THE CITY OF BIDDEFORD WILL NOT BE RESPONSIBLE FOR THE CONSTRUCTION AND MAINTENANCE OF ANY KIND, SHOW PLOWING, OR TRASH PICKUP OF THE PRIVATE WAY AND THAT FURTHER LOT DIVISION UTILIZING THE PRIVATE WAY ARE PROHIBITED WITHOUT PRIOR APPROVAL OF THE BOARD.
2. NO NEW STREET LIGHTS ARE PROPOSED FOR THIS PROJECT.
3. ALL CONSTRUCTION AND SITE ALTERATIONS SHALL BE DONE IN ACCORDANCE WITH THE EROSION PREVENTION PROVISIONS AS OUTLINED IN THE MAINE EROSION CONTROL AND SEDIMENTATION HANDBOOK FOR CONSTRUCTION BEST MANAGEMENT PRACTICES, LATEST REVISION.
4. DRIVEWAY APRONS MUST COMPLY WITH CHAPTER 62 SECTION 62-111 OF THE BIDDEFORD ORDINANCE.
5. IN LIEU OF A FULL PERFORMANCE GUARANTEE, THE APPLICANT SHALL NOT RECEIVE A

BUILDING PERMIT UNTIL THE PRIVATE WAY IS CONSTRUCTED ACCORDING TO THE APPROVED PLAN AND ACCEPTED BY THE CITY ENGINEER'S OFFICE, OR A LETTER OF CREDIT IS SUBMITTED TO THE CITY FOR 150% OF THE RIGHT OF WAY IMPROVEMENT COSTS. AT A MINIMUM AN EROSION CONTROL BOND WILL BE REQUIRED.

NOTIFY THE ENGINEERING DEPARTMENT TO SCHEDULE INSPECTION OF WORK AS REQUIRED BY BIDDEFORD CITY ORDINANCES.

THE PRIVATE WAY PLAN SHALL BE RECORDED IN THE YORK COUNTY REGISTRY OF DEEDS WITHIN 30 DAYS OF THE DATE OF THE PLANNING BOARD APPROVAL. IF THE PLAN IS NOT RECORDED WITHIN THIS TIME PERIOD, THE APPROVAL OF THE BOARD SHALL BE NULL AND VOID.

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH MDOT STANDARDS FOR ROADWAY EXCAVATION AND THE PLACEMENT OF FILL.

NO LOT MAY BE ACCESSED FROM EITHER ENDS OF THE HAMMERHEAD.

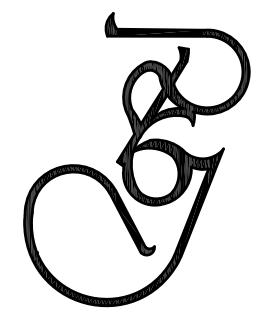
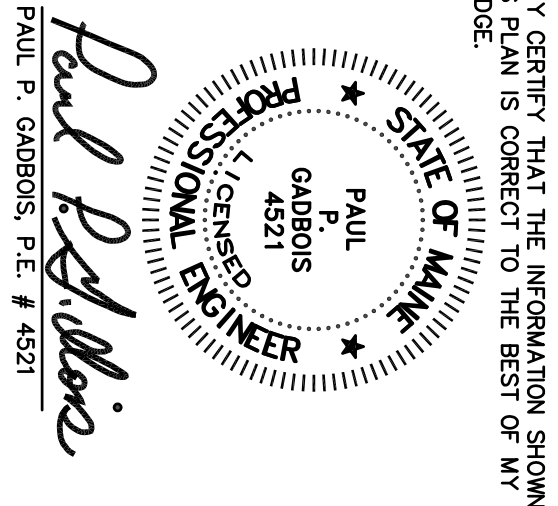
PLAN AND PROFILE
LISA & TRAVIS WING
1 MOXIE LANE
BIDDEFORD, MAINE

RECORD OWNER
LISA WING
1 MOXIE LANE
BIDDEFORD, MAINE 04005

DRAWN: P.P.G.	REVISIONS:
CHECKED: P.P.G.	
SCALE: 1"= 30'	
FIELD BOOK:	
DATE: 03-13-2023	
JOB NO. 1841	
SHEET 4 OF 6	

PAUL P. GADBOIS
ENGINEERING SURVEYING
LAND PLANNING
P.O. BOX 327, SACO, MAINE 04072
(207) 283-3980

PROGRESS PLAN
NOT FOR CONSTRUCTION
THIS DOCUMENT IS ISSUED FOR
INFORMATIONAL PURPOSES ONLY.
THE DATA SHOWN HEREON
IS SUBJECT TO REVISION.



MAINE CONSTRUCTION GENERAL PERMIT

APPENDICES – BASIC PERFORMANCE STANDARDS

- APPENDIX A. EROSION AND SEDIMENTATION CONTROL. 1
APPENDIX B. INSPECTION AND MAINTENANCE. 4
APPENDIX C. HOUSEKEEPING. 4

APPENDIX A. EROSION AND SEDIMENTATION CONTROL.

A PERSON WHO CONDUCTS, OR CAUSES TO BE CONDUCTED, AN ACTIVITY THAT INVOLVES FILLING, DISPLACING, OR EXCAVATING, OR ANY OTHER ACTIVITY THAT DISTURBS THE EARTH'S SURFACE, SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EARTH'S SURFACE FROM EROSION AND SEDIMENTATION. THE PERSON SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE EARTH'S SURFACE FROM EROSION AND SEDIMENTATION BY THE DESIGN, CONSTRUCTION, AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES. MEASURES MUST BE IN PLACE BEFORE THE ACTIVITY BEGINS. MEASURES MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL THE SITE IS PERMANENTLY STABILIZED. ADEQUATE AND TIMELY TEMPORARY AND PERMANENT STABILIZATION MEASURES MUST BE TAKEN.

NOTE: THE SITE MUST BE MAINTAINED TO PREVENT UNREASONABLE EROSION AND SEDIMENTATION. SEE 38 M.R.S.A. § 420-C (ON-PART). A LICENSE IS REQUIRED FOR ANY STORMWATER DISCHARGE THAT THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) DETERMINES TO CONSTITUTE A POLLUTION OF THE STATE WATER OR A SIGNIFICANT CONTRIBUTION OF POLLUTANTS TO WATERS OF THE STATE. (66-996 CMR 32.00(5)(A) AND 32.00(5)(B)).

(1) **POLLUTION PREVENTION.** MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNSTREAM BUFFER AREAS TO THE EXTENT PRACTICABLE. THE DISCHARGE MAY NOT RESULT IN EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, UPLAND, OR COASTAL, OR FRESHWATER WETLANDS.

NOTE: BARRIERS IMPROVE WATER QUALITY BY HELPING TO FILTER POLLUTANTS IN RUN-OFF BOTH DURING AND AFTER CONSTRUCTION. MINIMIZING DISTURBED AREAS THROUGH PAVING LIMITS THE AMOUNT OF EXPOSED SOIL ON THE SITE. DISTURBED AREAS SHOULD BE REVEGETATED AS SOON AS POSSIBLE. IF REVEGETATION IS NOT POSSIBLE, THE RESULT IS FEWER EROSION CONTROLS TO INSTALL AND MAINTAIN. IF WORK WITHIN AN AREA IS NOT ANTICIPATED TO BEGIN WITHIN TWO WEEKS TIME, CONSIDER LEAVING THE AREA IN ITS NATURALLY EXISTING COVER.

(2) **SEDIMENT BARRIERS.** PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE EDGE OF ANY DOWNSTREAM DISTURBED AREA AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. MAINTAIN THE SEDIMENT BARRIERS UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.

(3) **TEMPORARY STABILIZATION.** STABILIZE WITH MULCH, OR OTHER NON-ERODIBLE COVER, ANY EXPOSED SOILS THAT ARE NOT COVERED BY PERMANENT STABILIZATION MEASURES. MULCH SHALL BE APPLIED TO EXPOSED SOILS WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL, OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.

NOTE: FOR GUIDANCE ON EROSION AND SEDIMENTATION CONTROLS, CONSULT THE *MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION – BEST MANAGEMENT PRACTICES OR THE MAINE EROSION AND SEDIMENTATION CONTROL BEST MANAGEMENT PRACTICES*.

(1) **REMOVAL OF TEMPORARY MEASURES.** REMOVE ANY TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ACHIEVED. REMOVE ANY ACCUMULATED SEDIMENTS AND STONE. IT IS RECOMMENDED THAT SILT FENCE BE REMOVED BY CUTTING THE FENCE MATERIALS AT GROUND LEVEL, SO AS TO AVOID ADDITIONAL SOIL DISTURBANCE.

(1) **PERMANENT 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. AREAS OF SOIL EXPOSED FOR MORE THAN 30 DAYS SHALL BE COVERED WITH MULCH, OR RIPRAP, OR ROAD SUB-BASE. AREAS OF NECESSARY EROSION CONTROL BLANKETS, AND SCHEDULE SOILING, PLANTING, AND SEEDING, SO TO AVOID DITCH FROM SUMMER BROUGHT AND FALL FROSTS. NEWLY SEEDING OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC. EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED. IF NECESSARY, AREAS MUST BE REMOVED AND REESTABLISHED 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.

(a) **SEEDING AREAS.** FOR SEEDING AREAS, PERMANENT STABILIZATION MEANS A 100% COVER OF THE DISTURBED AREA WITH NATURAL, HEATHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

(b) **SODDED AREAS.** FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE RILLING OF THE SOD ROOTS INTO THE UNDERLYING SOIL, WITH NO SLUMPING OF THE SOD OR DIE-OFF.

(c) **PERMANENT MULCH.** FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MAT MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE APPROVED APPLICATION RATES AND LIMITATIONS.

(d) **RIPRAP.** FOR AREAS STABILIZED WITH RIPRAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH MOVEMENT FROM BEHIND THE RIPRAP. STONE MUST BE SIZED APPROPRIATELY. IT IS RECOMMENDED THAT ANGULAR STONE BE USED.

(e) **AGRICULTURAL USE.** FOR CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL PURPOSES (E.G., PIPELINES ACROSS CROP LAND), PERMANENT STABILIZATION MAY BE ACCOMPLISHED BY RETURNING THE DISTURBED LAND TO AGRICULTURAL USE.

(f) **PAVED AREAS.** FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED.

(g) **DITCHES, CHANNELS, AND SWALES.** FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH NATIVE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH WELL-GRADED RIPRAP LINING, OR WITH ANOTHER NON-EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE LINING, UNDERCUTTING OF THE BANKS, OR DOWN-CUTTING OF THE CHANNEL.

(h) **WINTER CONSTRUCTION.** "WINTER CONSTRUCTION" IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 15 TO APRIL 15. DURING WINTER CONSTRUCTION, PERMANENT STABILIZATION MEASURES SHALL BE TEMPORARY OR PERMANENT MEASURES OBTAINED ABOVE BY NOVEMBER 15. THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES THAT ARE SPECIFIC TO WINTER CONDITIONS. NO MORE THAN ONE ACRE OF THE SITE MAY BE WITHOUT STABILIZATION AT ONE TIME.

(a) **SITE STABILIZATION.** FOR WINTER STABILIZATION, HAY MULCH IS APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE STABILIZED. MULCH MAY NOT BE SPREAD ON TOP OF SNOW.

(b) **SEDIMENT BARRIERS.** ALL AREAS WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.

(c) **DITCH.** ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.

(d) **SLOPES.** MULCH SPREADING MUST BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 8% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MAT IS BEING USED ON THESE SLOPES.

NOTE: FOR GUIDANCE ON WINTER CONSTRUCTION STANDARDS, SEE THE "MAINE EROSION AND SEDIMENT CONTROL BMP'S" MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

(f) **STORMWATER CHANNELS.** DITCHES, SWALES, AND OTHER OPEN STORMWATER CHANNELS MUST BE DESIGNED, CONSTRUCTED, AND STABILIZED USING MEASURES THAT ACHIEVE LONG-TERM EROSION CONTROL. DITCHES, SWALES, AND OTHER OPEN STORMWATER CHANNELS MUST BE SIZED TO HANDLE, AT A MINIMUM, THE EXPECTED VOLUME OF RUNOFF FROM THE DISTURBED AREA. THE CHANNELS MUST BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. THE INSTALLATION OF THE PERMANENT STABILIZATION MEASURES CAN BE COMPLETED THE SAME DAY IF THE CHANNELS ARE INSTALLED ON A SLOPE OF 3% OR GREATER. IF THE CHANNELS ARE INSTALLED ON A SLOPE LESS THAN 3%, THE CHANNELS MUST BE DELAYED THEN DIVERSION BARRIERS 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. PERMANENT STABILIZATION FOR CHANNELS IS ADDRESSED UNDER APPENDIX A(5)(G) ABOVE.

NOTE: (1) THE CHANNEL SHOULD RECEIVE ADEQUATE ROUTINE MAINTENANCE TO MAINTAIN CAPACITY AND PREVENT OBSTRUCTION. (2) THE CHANNEL SHOULD BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. (3) THE CHANNEL SHOULD BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. (4) THE CHANNEL SHOULD BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. (5) THE CHANNEL SHOULD BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. (6) THE CHANNEL SHOULD BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. (7) THE CHANNEL SHOULD BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. (8) THE CHANNEL SHOULD BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. (9) THE CHANNEL SHOULD BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. (10) THE CHANNEL SHOULD BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. (11) THE CHANNEL SHOULD BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. (12) THE CHANNEL SHOULD BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. (13) THE CHANNEL SHOULD BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. (14) THE CHANNEL SHOULD BE DESIGNED TO MAINTAIN A MINIMUM 3% SLOPE. 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Whitten, Nan

From: Chekan, Craig
Sent: Tuesday, April 25, 2023 9:48 AM
To: Galbraith, David; Tom Saucier
Cc: Freeman, Eric; Whitten, Nan; Milligan, Tom; Demers, Jeff
Subject: RE: Moxie Lane

Moxie Lane Comments:

1. Trash Operations
 - a. Currently, the private owner wheels trash to Guinea Road for City Pickup
 - b. Unless a waiver is requested by all lot owners and granted, no City trash truck will enter Moxie Lane – thus requiring all trash to be wheeled to Guinea Road
2. Site Plans do not specify:
 - a. Road material (gravel vs. asphalt)
 - b. Show driveway delineations
 - c. Clearly annotate that the road will be private
3. Plans should clarify who the 27,300-SF lot is being conveyed to
4. The application says a SWM facility/BMP is proposed, but none are shown
5. How were wetlands delineated? Only one line segment shown
6. Detail/topo will be needed on subsequent submittals for:
 - a. Existing 'top of bank'
 - b. Existing southern 'drainage ditch'
 - c. Proposed drainage ditch/culverts

Craig Chekan, PE

City of Biddeford | P.O. Box 586, Biddeford, ME 04005

207-571-0636 | craig.chekan@biddefordmaine.org (Office Hours: Mon-Thu, Closed Fri)

From: Galbraith, David <David.Galbraith@biddefordmaine.org>
Sent: Tuesday, April 25, 2023 7:02 AM
To: Tom Saucier <tsaucier@sitedesignassociates.biz>; Whitten, Nan <Nan.Whitten@Biddefordmaine.org>; Chekan, Craig <Craig.Chekan@Biddefordmaine.org>
Cc: Freeman, Eric <Eric.Freeman@biddefordmaine.org>
Subject: RE: Moxie Lane

Tom, thanks for your comments. I'll make sure to include them in my report.
David

From: Tom Saucier <tsaucier@sitedesignassociates.biz>
Sent: Monday, April 24, 2023 8:57 PM
To: Galbraith, David <David.Galbraith@biddefordmaine.org>; Whitten, Nan <Nan.Whitten@Biddefordmaine.org>; Chekan, Craig <Craig.Chekan@Biddefordmaine.org>
Subject: Moxie Lane

EXTERNAL: This email originated from outside of the City of Biddeford email system. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi David

We have undertaken a review of the preliminary plans for the referenced project. Based on our review, we did not see any showstoppers.

Preliminary comments are as follows:

- 1) Show the building windows on the final plan.
- 2) Can the road be shifted northerly a bit to provide some separation between the shoulder and existing utility poles?
- 3) A maintenance agreement will be required per section 51-D.6. of the code.
- 4) Is the water service existing? Will any excavation in Guinea Road be required?
- 5) Proposed monumentation should be shown on the final plan.
- 6) The plans will need to be updated to request the FD's modifications to the turnaround.

That is it for this round.

Thanks

Tom

Tom Saucier, P.E.
Site Design Associates
23 Whitney Way
Topsham, Maine 04086
207-449-4275

Whitten, Nan

From: Tom Saucier <tsaucier@sitedesignassociates.biz>
Sent: Monday, April 24, 2023 8:57 PM
To: Galbraith, David; Whitten, Nan; Chekan, Craig
Subject: Moxie Lane

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Hi David

We have undertaken a review of the preliminary plans for the referenced project. Based on our review, we did not see any showstoppers.

Preliminary comments are as follows:

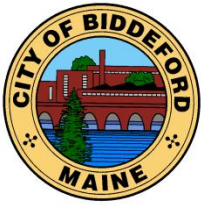
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That is it for this round.

Thanks

Tom

Tom Saucier, P.E.
Site Design Associates
23 Whitney Way
Topsham, Maine 04086
207-449-4275



CITY OF BIDDEFORD

Planning and Development Department

David C.M. Galbraith
Interim Deputy Director/City Planner
205 Main Street
P.O. Box 586
Biddeford, ME 04005
(207) 284-9115
David.Galbraith@biddefordmaine.org

PLANNING BOARD STAFF REPORT

TO: Chair Patoine and Members of the Biddeford Planning Board

FROM: David C.M. Galbraith, City Planner & Deputy Director of the Planning & Development Dept.

DATE: April 24, 2023

RE: **2023.22 Site Plan Application for Brown Dog Carriers to build a commercial facility for company headquarters for their trucking company. Property is located on Landry Street (Tax Map 74, Lots 11 & 10-2) in the Industrial 2 zone.**

MEETING DATE: May 3, 2023 at 6:00 PM

1. INTRODUCTION

Brown Dog Carriers & Logistics is proposing to construct a new headquarters and storage facility for their trucking company located at the corner of Landry St. and Marcel Ave. (Tax Map 74, Lots 11 and 10-2)

A 6,000 sq. ft. building is proposed to accommodate company offices and shops. A gravel parking and vehicle storage area is proposed at the rear of the property to accommodate the company's vehicles. The project will be served by public utilities from Marcel Avenue. Access to the site will be via a private drive off of Landry Street.

Staff and peer-review engineers have identified areas of concern that should be elaborated upon by the applicant. Of particular concern is the planned location of any vehicle maintenance or washing done on premises. Additionally, the submitted wetland and vernal pool delineation report does not include the approximately 7 acres that have been added to this property since the report was done in 2019. Part of this ~7 acre are is included in this application.

Engineering staff and peer-reviewers have identified potential areas of concern regarding stormwater and drainage.

2. PROJECT DATA/INFORMATION

1.	Applicant:	Brown Dog Carriers & Logistics 432 Elm Street Biddeford, ME 04005
2.	Owner of Property:	Same as Applicant
3.	Agent:	Andrew S. Morrell BH2M Engineering 380 B Main Street

2023.22 Site Plan Application for Brown Dog Carriers to build a commercial facility for company headquarters for their trucking company. Property is located on Landry Street (Tax Map 74, Lots 11 & 10-2) in the Industrial 2 zone.

		Gorham, ME 04038
4.	Surveyor:	Same as above
5.	Project Location:	Landry Street (Address TBD)
6.	Project Tax Map #/Lot #:	Tax Map 74, Lot 11 & 10-2
7.	Lot Size:	11.619 Acres
8.	Base Zoning:	Industrial-2
9.	Overlay Zoning:	N/A
10.	Existing Use:	Single Family Home to be removed by applicant
11.	Proposed Use:	Light Industrial
12.	Approvals Required:	Site Plan
13.	Uses in the Vicinity:	Industrial, Residential, Airport
14.	Waivers Needed:	a. None
18.	Waivers Granted:	a. None
22.	Other Non-City Permits Required:	
23.	LDR Attachment A: Fees Paid:	Application Fees Paid, not escrows
25.	Planning Board Review History:	N/A

3. REVIEW PROCESS

Per City ordinance, this application is subject to Site Plan (Land Development Regulations, Article XI) review and approval by the Planning Board.

4. Departmental Review Comments:

A. Planning:

- Applicant should clarify whether all vehicle washing and/or maintenance will be conducted indoors and whether the rear gravel parking area will be exclusively used for vehicle storage.
- The exact address of the property needs clarification
- As noted by the peer review engineer, the wetland delineation report is from 2019 and does not include the 7 acres added to the project since then
- Applicant is using an outdated 2015 Planning Application; applicant should utilize Planning's latest application on the City's website.
- Applicant should clarify what potential development may occur on the southern end of the site in the future.

B. Code Enforcement:

1. No Comments

C. Public Works:

1. No Comments

D. Engineering:

- The application states no future development is proposed, yet utility stubs are proposed.
- It should be clarified what a future development could consist of and what access would be required
- A 50-year storm hydraulic analysis should be analyzed for each culvert, ditch, and drainage pipe for the Final submittal.

2023.22 Site Plan Application for Brown Dog Carriers to build a commercial facility for company headquarters for their trucking company. Property is located on Landry Street (Tax Map 74, Lots 11 & 10-2) in the Industrial 2 zone.

- Missing existing sanitary MH and storm culvert elevations within Marcel Ave.
- Applicant should confirm what upgrades to the downstream ditch/culverts within Marcel Ave are needed for a 50-year event
- The existing 24" downstream culvert will be receiving flow from the upstream 60" culvert and the site's 12" outfall
- Snow storage areas should be identified.
- A clear limits-of-disturbance delineation line should be shown and square-footage annotated, accurately depicting the limits of excavation needed for fencing, grading, utilities, and wetland impacts
- The plan proposes an existing shed on the adjacent Herbert property to be relocated; clarification/details needed and permission confirmed
- This project is proposing significant disturbance within the Thatcher Brook Watershed (an Urban Impaired Stream) and directly adjacent/within wetlands
- A single layer of silt fence does not seem like adequate wetland/UIS protection, especially with 2:1 slopes.
- Applicant needs to confirm where vehicle washing/maintenance will be performed
 - Per the City's MS4 permit, all vehicle washing and maintenance work should be restricted from the gravel parking area (to avoid illicit discharges into the SWM facilities, wetlands, and drainage ditches); plans should clarify this restriction
 - If any vehicle washing/maintenance drainage is expected on-site, it should be drained into the sanitary sewer system
- A detailed breakdown of proposed sewer flows was not provided, per Maine's Subsurface Wastewater Disposal Rules, Chapter 241, Section 4 (Tables 4A & 4C); thus an ability-to-serve letter has not been determined

E. Police:

1. No Comments

F. Fire:

1. No Comments

G. Traffic Peer Review:

1. No Comments

H. Engineering Peer Review:

1. See attached comments from Tom Saucier

2. STAFF REVIEW

- **APPLICATION COMPLETENESS:** The applicant has submitted a complete application, featuring all required elements as specified under Section 66-35 (Required Information for Final Plan Submissions). As part of the staff's review comments, we have identified aspects of the plan submission to be revised or clarified, which we suggest being made a condition of approval.
- **ZONING:** The proposed uses are permitted uses within the I-2 Zone, Similarly, with respect to applicable dimensional requirements, the project would comply with all applicable requirements, including building height, building setback, frontage, and lot coverage requirements.

2023.22 Site Plan Application for Brown Dog Carriers to build a commercial facility for company headquarters for their trucking company. Property is located on Landry Street (Tax Map 74, Lots 11 & 10-2) in the Industrial 2 zone.

• **REVIEW STANDARDS:**

In general, staff found the application to satisfy City site plan requirements. The major site details such as building, parking, landscaping, designs and locations have been finalized so the plan being reviewed the Board are what will be constructed on the face of the earth. However, City Staff and the City’s third party civil engineer, identified a number of technical plan elements which need to be addressed by the Applicant prior to final site plan approval.

Maine DEP Stormwater Permit: The project requires a Maine DEP Stormwater Permit.

WAIVERS: No waivers requested as part of this project.

3. STAFF RECOMMENDATION

Staff recommends that the applicant address concerns brought up by staff and the engineering peer-review comments. And moving forward with the Board’s Final Approval of the project, with the understanding that the remaining engineering issues will be resolved, to the satisfaction of the Public Works Director and Engineering Director, prior to a Preconstruction Meeting being scheduled. A Condition of Approval (COA), of this nature, has been included within the Findings of Fact (FOF) / COA. Therefore, Staff recommends the Planning Board approve the project plans as presented with the adoption of the Findings of Fact (FOF) and Conditions of Approval (COA).

4. SAMPLE MOTIONS

- A. Motion to Approve: I motion to APPROVE the Preliminary Site Plan application for the proposal located on Landry Street (Tax Map 74, Lots 11 & 10-2), within the Industrial 2 (I-2) zoning district, as presented with the adoption of the Findings of Fact (FOF) and Conditions of Approval (COA).

- B. Motion to Deny I motion to DENY Final Subdivision and Site Plan approval for the proposal located on Landry Street (Tax Map 74, Lots 11 & 10-2), within the Industrial 2 (I-2) zoning district, for the following reasons:
 - 1) _____.
 - 2) _____.
 - 3) _____.

- A. Motion to Table: I motion to TABLE the Final Subdivision and Site Plan approval for the proposal to be located on Landry Street (Tax Map 74, Lots 11 & 10-2), within the Industrial 2 (I-2) zoning district, for the following reasons:
 - 1) _____.
 - 2) _____.
 - 3) _____.

2023.22 Site Plan Application for Brown Dog Carriers to build a commercial facility for company headquarters for their trucking company. Property is located on Landry Street (Tax Map 74, Lots 11 & 10-2) in the Industrial 2 zone.

SITE PLAN APPLICATION
LANDRY STREET
COMMERCIAL BUILDING
BIDDEFORD, MAINE
FOR
BROWN DOG CARRIERS & LOGISTICS
MARCH 2023



Prepared By:

Berry Huff McDonald Milligan, Inc.
Engineers Surveyors
308B Main Street
Gorham, Maine 04038
(207) 839-2771
amorrell@bh2m.com

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STORMWATER REPORT AND PLANS

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REVIEW LETTER REQUESTS FOR CITY DEPARTMENTS

COVER LETTER/NARRATIVE



Civil Engineering | Surveying

March 15, 2023

David Galbraith
Biddeford City Planner
205 Main Street
Biddeford, Maine 04005

Re: Brown Dog Carriers & Logistics – Site Plan
Tax Map 74 Lots 11, 10-2 & 14
Landry Street / Marcel Avenue

Dear David;

On behalf of the applicant, Brown Dog Carriers & Logistics, we are submitting copies of a site plan application with the following information:

- Site Plan Application & Checklist
- Application Fee (\$4,700)
- Parcel Deeds (Book 18846 Page 723 & Book 18879 Page 311)
- Figures (Tax Map, USGS, FEMA & Soils)
- Wetland and Vernal Pools – Mainely Soils LLC
- Lighting Cut Sheets – Visible Light
- Stormwater Management Report (3 copies)
- Notice of Decision – Landmatters LLC – 11/12/2019
- Recorded Site Plan – Dempsey Drive (Plan Book 407 Page 18)
- Review letter requests – City Departments
- Site Plans (Full Size) – BH2M

As the City is aware, this parcel has a long history of permitting. This parcel (Tax Map 74 Lots 10-2 & 11) was previously owned by Dempsey LLC and received a site plan approval from the City in 2019 (see attached Recorded Plan and Notice of Decision for more information). This project was never built by the previous developer. The existing site plan permits for that project have been voided because of the amount of time that has passed without any construction taking place.

Brown Dog Carriers have purchased the above parcels previously permitting for Dempsey LLC, as well as an abutting lot to the south (Tax Map 74 Lot 14). The applicant has met with planning staff on several occasions to discuss the permitting of this project. Since the previous approvals have been voided, and Brown Dog Carriers intends to develop the parcel differently, it was determined that a site plan approval will be required, however, all felt this should be a more simplified review and approval process since this process was approved previously with the City.

The applicant owns 11.62 acres zoned Industrial 2 (see standard boundary survey for more information). The parcel previously contained an abandoned single family house that the applicant has removed. The applicant is proposing to construct a headquarters for their trucking company, Brown Dog Carriers & Logistics. A 6,000 sf building is proposed to accommodate company offices. A large parking / storage area is proposed to accommodate the companies vehicles. The project will be served by public utilities from Marcel Avenue, see Sheet 1 of the attached plans. Please note the utilities have been proposed to be stubbed to the remaining land of the applicant to the south in case development occurs in this portion of the site in the future. At this time, the applicant has no intentions of developing on this portion of the site. Access to the parcel is similar to the previously approved design off Landry Street (see attached site plans for more information).

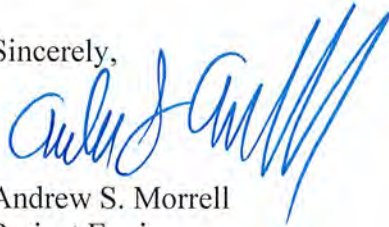
Some details of the project we would like to point out to the City:

- This project is subject to detailed Maine DEP permitting (stormwater and NRPA), similar to the previous project (see note #20 on sheet 1 of the plans). After we receive initial comments from the City of Biddeford the applicant and our office will work closely with the Maine DEP and Army Corps of Engineers to gather the necessary approvals.
- In order to screen the abutting residential lots to the south of the subject parcel along Marcel Avenue, the applicant has proposed a 6-foot high stockade fence (see sheet 1 of the plan for more information).
- Wetlands and vernal pools were previously delineated by Mainely Soils LLC (see attached report by Alex Finamore).
- Applicant is proposing pole lights to illuminate the access drive and the parking / storage area and building mounted lights to illuminate the building and immediate paved parking (see attached lighting plan by Visible Light for more information). Attached are specifications for this proposed lighting.
- A dumpster has been proposed in the southern limits of the paved parking area with full enclosure (see details on sheet 4 of the plans).
- Stormwater runoff from the site flows in sheet flow to the northern limits of the parcel where the runoff is collected with a series of sediment forebays and treated by two vegetated soil filters. These filters treat the runoff and discharge the runoff to the wetlands (see sheet 2 of the plans for more information). These filters have been designed to meet all applicable City of Biddeford and Maine DEP requirements (see attached stormwater management report for more information).
- The attached letters have been sent to the appropriate department heads requesting review of the attached plans.

As discussed above, the applicant met with planning staff on several occasions to review the permitting for this project. Many of the items discussed and recommendations from planning staff

have been incorporated into the design of this parcel. We look forward to working with staff on the permitting of this project. We look forward to presenting this project to the Planning Board at the next available agenda. Please let me know if you have any questions or need any additional information for this submission.

Sincerely,



Andrew S. Morrell
Project Engineer

cc: Graig Morin – Brown Dog Carriers

21270- Site Plan Submission

APPLICATION

CITY OF BIDDEFORD, MAINE
PLANNING BOARD
P.O. Box 586, 205 Main Street Biddeford, Maine 04005
207-284-9115

APPLICATION FORM

Type of Application:

- | | | |
|--|--|--------------------------------------|
| ☐ Shoreland Zoning Permit | ☒ Site Plan Review | ☐ Extraction |
| ☐ Conditional Use Permit | ☐ Subdivision | ☐ Private Way |
| ☐ Other: _____ | | |

Applicant Information:

Applicant's Name: Brown Dog Carriers & Logistics

Applicant's Mailing Address: 432 Elm Street, Biddeford, ME 04405

Applicant's Telephone: 207 294-2075

What is Applicant's legal interest in the property?

- ☒ Owner ☐ Potential Buyer with Contract ☐ Lease/Rental Agreement

Owner's Name: Same as above

Owner's Address: _____

Owner's Telephone: _____

Agent's Name: Andrew S. Morrell

Agent's Address: BH2M, 380B Main Street, Gorham, ME 04038

Telephone: (207) 839-2771

Engineer/Surveyor: Same as above

Engineer/Surveyor's Address: _____

Telephone: _____

Project Location and Lot Information:

Street Address: TBD Landry Street

Tax Map: 74 Lot: 11 & 10-2

Current Zoning: (I2) Industrial 2 Shoreland Zoning: N/A

Size of lot: 11.619 ☒ acres ☐ s.f. Lot Frontage: 202' on Landry Rd / 269' on Marcel Ave

Existing Use of Property: Existing Single Family Residence (removed by applicant)

Property currently serviced by:

☒ City Road	☐ Private Road
☒ Public Sewer	☐ Septic System
☒ Public Water	☐ Private Well
☐ Public Trash	☐ Private Hauler

Slope Conditions in Area of Construction (if applicable):

☐ Flat (0-3 % slope) ☒ Rolling (3-8% slope) ☐ Hilly (8-15% slope) ☐ Steep (15% + slope)

Are there any wetlands or waterbodies on the site? ☒ Yes ☐ No If yes, attach information

Do you plan to bring fill onto the lot? ☒ Yes ☐ No If yes, attach information

Description of proposed use of property:

Project/Proposed Use Description: The owner/applicant, Brown Dog Carriers is a trucking company. The proposed facility
will provide a company headquarters. The proposed building will have the company offices and the parking/storage area will
accommodate the companies vehicles.

Property to be serviced by:

☒ City Road	☐ Private Road
☒ Public Sewer	☐ Septic System
☒ Public Water	☐ Private Well
☐ Public Trash	☐ Private Hauler

Is this project part of a larger project? ☐ Yes ☒ No

☐ If in a Shoreland Zone:

Percent of residential lot coverage (Max. 20%): N/A

Percent of structure expansion (Max. 30%):

☐ If Subdivision Review, number of lots proposed: N/A

☐ If a Private Way is proposed, number of lots served: N/A

☒ **If Site Plan Review, you must provide the following information:**

Total new square feet footprint of structures: 5,299 Sq. Ft.

Total new square feet paving/parking: 125,000 Sq. Ft. +/-

Waiver Requests (attach details):

1.
2.
3.
4.
5.

Attachments:

A. Letters of Approval

- ☐ Fire Department - Contact Chief or Deputy Chief - 282-9986
- ☐ Ability to Serve for Water Service – Maine Water - 282-1543
- ☐ Ability to Serve for Sewer Service- Engineering Dept (Sewer) - Tom Milligan 284-9118
- ☐ Police Department - E-911 Road Name Designation - Contact Joanne Fisk - 282-5127

B. Letter to Planning Board describing project, waiver requests, proposed improvements, addressing permit requirements, etc.

C. Photographs of site.

D. Architectural renderings/drawings of proposed buildings, as required.

E. Engineered Plans, as required.

Fees (due at time of application):

Refer to "Attachment A Fees and Charges" of the Land Development Regulations for more information. Consult with Planning Staff if you have questions.

Required Signatures:

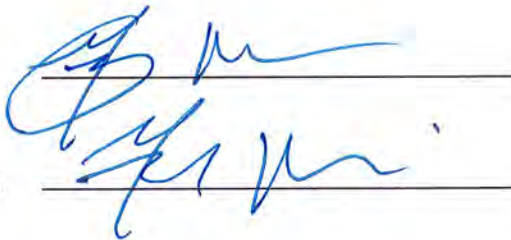
By signing this application, as the foresaid applicant or authorized agent:

- I certify that I have read and completely understand the application;
- I certify that the information contained in this application and it's attachments are true and correct;
- I understand that all information provided on this form and all other documents submitted as part of my proposal is a matter of public record;
- I understand that copies of this information may be supplied upon request to an interested party.
- I understand that additional funds may be required through the course of review for special studies, legal review costs, and/or engineering review.
- I understand that by submitting this application I am not guaranteed a place on any particular agenda. I further understand that the City Planner will place me on an agenda for review when the application is deemed substantially complete.

☒ Project proposed to have 1 acre or more of site disturbance:

-Project may need to apply for a Maine Construction General Permit and shall comply with the requirements of DEP Chapter 500 Stormwater Regulations, as they apply.

Signature of applicant:



Date: 3/9/23

Signature of owner of property:



Date: 3/9/23

**IF PLAN APPROVAL IS ANTICIPATED, PROVIDE 2 FULL SIZE MYLARS & 2 FULL SIZE PAPER COPIES FOR BOARD SIGNATURE (AS APPLICABLE).
CHECK WITH PLANNING STAFF FOR CLARIFICATION.**

CHECKLIST

CHECKLIST FOR SITE PLAN REQUIREMENTS

YES **NO**

- | | | |
|-------------------------------------|--------------------------|--|
| ☒ | ☐ | Be on sheet size of 24 by 36 inches. |
| ☒ | ☐ | The scale of said plan shall be not less than one inch equals 50 feet and shall be indicated on the plat by use of a bar scale. |
| ☒ | ☐ | The plan shall bear the date, title, north point. |
| ☒ | ☐ | The plan shall contain a location or vicinity sketch (suggested scale one inch equals 800 feet). |
| ☒ | ☐ | The plan shall contain the name and address of the developer and applicant. |
| ☒ | ☐ | All appropriate dimensional requirements. |
| N/A ☐ | ☐ | Existing and proposed easements. |
| ☒ | ☐ | Plan of the site showing existing watercourses and water bodies, seasonal wet areas. |
| ☒ | ☐ | Plan of the site showing soil type and location of test borings. |
| ☒ | ☐ | Location of all existing and proposed utilities. |
| ☒ | ☐ | Topographic contours (every five percent for zero to three percent slope; or every two feet for steeper areas). |
| ☒ | ☐ | Plan should include preservation and supplementation of existing dominant vegetation. |
| ☒ | ☐ | Plan shall indicate which features are to be retained and which are to be removed or altered. |
| ☒ | ☐ | Location of stonewalls, graveyards, fences, stands of trees, and other important unique natural areas and site features, including but not limited to floodplains, deer wintering areas, significant wildlife habitats, fisheries, scenic areas, habitat for rare and endangered plants and animals, unique natural communities and natural areas, sand and gravel aquifers, and historic and/or archaeological resources, together with description of such features. |
| ☒ | ☐ | Plan view of all buildings with their use, size, location, and first-floor elevation in respect to grade. |
| N/A ☐ | ☐ | Standard elevation view of existing and proposed buildings or structures on-site. |

YES NO

- | | | |
|-------------------------------------|--------------------------|---|
| ☒ | ☐ | Outline of any buildings located within 200 feet of such existing or proposed buildings or structures indicating their shape, size, location, heights and volume. |
| ☒ | ☐ | Existing use of abutting properties shall be identified with approximate location of any structures thereon including access roads. |
| ☒ | ☐ | Location, width, curbing, and paving of access ways, egress ways, and streets within the site for both pedestrian and vehicular use. |
| ☒ | ☐ | The location of off-street parking and loading spaces with a layout of the parking indicated. |
| ☒ | ☐ | The size and proposed location of water mains and sanitary sewerage facilities will all necessary engineering data. |
| ☒ | ☐ | The size and location of all other existing and proposed public service connections including, without limitation, gas lines, power lines, telephone lines, and fire alarm connections and locations, indicating whether above or below ground. |
| N/A ☐ | ☐ | The type, nature, and composition of all solid, liquid, and gaseous waste, industrial or otherwise, and the location, type, and design criteria of the storage and disposal facilities dealing with such waste. |
| N/A ☐ | ☐ | A landscape plan and open space areas indicating grade change, vegetation to be preserved, new plantings used to stabilize areas of cut and fill, screening; plus size, location, purpose and type of vegetation. |
| ☒ | ☐ | A drainage plan including location, elevation, layout of catch basins and other surface and subsurface drainage features. |
| ☒ | ☐ | Location, size and design of proposed signs and other advertising or instructional devices. |
| ☒ | ☐ | Existing and proposed contours and finished grade elevations as well as the type, extent, and location of existing and proposed landscaping and open space areas which will be retained. |
| ☒ | ☐ | Location and type of lighting for outdoor facilities. |
| ☒ | ☐ | Lines of existing and proposed abutting streets showing width. |
| ☒ | ☐ | Surveyed property lines showing their bearing and distances and monument locations. |
| N/A ☐ | ☐ | If subdivision is involved, the lines and names of all proposed streets, lanes, ways, or easements intended to be dedicated for public or private use. |

YES **NO**

- N/A ☐ ☐ Provide copies of any covenants or restrictions that are intended to cover all or part of the land area to be developed.
- ☒ ☐ Indicate limits of the wetland areas on the property.
- ☒ ☐ Delineate existing zoning boundaries within 1,000 feet of the site.
- ☒ ☐ Stamp and signature of either a Maine licensed land surveyor, professional engineer, or architect responsible for said plan.
- ☒ ☐ Any other exhibits or data deemed necessary by the Planning Board to evaluate the proposed development for site plan review purposes.

PARCEL DEEDS

Space above for recording information

DLN: 1002140168543
QUITCLAIM DEED WITH COVENANT
(Maine Statutory Short Form)

KNOW ALL PERSONS BY THESE PRESENTS that **DEMPSEY, LLC**, a Maine limited liability company with a principal place of business in Old Orchard Beach, County of York and State of Maine, for consideration paid, grants to **BROWN DOG CARRIERS, LLC**, a Maine limited liability company with a mailing address of 432 Elm Street, Biddeford, ME 04005, with **Quitclaim Covenant**, the following described real estate situated in the City of Biddeford, County of York, and State of Maine:

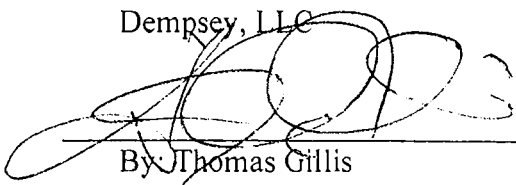
SEE EXHIBIT "A" ATTACHED HERETO AND
INCORPORATED HEREIN BY REFERENCE

Being the same premises conveyed to Grantor herein by deed of Thomas Belanger, Personal Representative of the Estate of Clarence Belanger, dated December 3, 2019, and recorded in the York County Registry of Deeds in Book 18114, Page 202.

IN WITNESS WHEREOF, said Dempsey, LLC caused this instrument to be signed in its company name by Thomas Gillis, its Managing Member, thereunto duly authorized, this 22nd day of October 2021.

Signed, sealed and delivered
in the presence of

Dempsey, LLC

By: 
Its: Managing Member

State of Maine
County of Cumberland, ss

October 22, 2021

Personally appeared Thomas Gillis, in his capacity as the Managing Member of Dempsey, LLC, and acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of Dempsey, LLC.

Before me,


Notary Public/Attorney at Law
Print Name: David C. Johnson
My Commission Expires: Attorney At Law

Maine R.E. Transfer Tax Paid

EXHIBIT A

Parcel One

A certain lot or parcel of land, with the improvements thereon, situated on Marcel Avenue, in said Biddeford, and bounded and described as follows:

BEGINNING at a point at the northeast corner of the Hill lot, so-called;

THENCE running by said Marcel Avenue, in a Southwesterly direction, 200 feet;

THENCE Southerly, 793 feet, more or less, to the Proctor lot, so-called;

THENCE Northeasterly by the Proctor lot, and land of owners unknown, 200 feet;

THENCE Northerly 793 feet more or less to the point of beginning.

Excepting a certain lot or parcel of land as described in deed of Clarence T. Belanger and Rita Belanger to Anthony J. Frenette and Adrienne Frenette dated July 2, 1956 and recorded in the York County Registry of Deeds in Book 1321, Page 152.

Also excepting any land that was conveyed to the Inhabitants of the Municipality of Biddeford by deed dated March 11, 1987 and recorded in said Registry of Deeds in Book 4415, Page 75.

Parcel Two

A certain lot or parcel of land, with the improvements thereon, situated at the intersection of Landry Street and Marcel Avenue in said Biddeford and being Lot No. 1A, on "Plan of the Resubdivision of Lot — I Airport Ind. Park II, Land of the City of Biddeford, Maine on Landry Street in Biddeford, Maine" dated August 7, 1984, drawn by Casavant, Scale 1" = 100' and recorded in York Registry of Deeds, Plan 132, Page 23.

Parcel Two described above is made subject to the restriction that no buildings will be constructed on this lot.

Excepting any land that was conveyed to the Inhabitants of the Municipality of Biddeford by deed dated March 11, 1987 and recorded in said Registry of Deeds in Book 4415, Page 75.

Parcels One and Two are conveyed together with and subject to any and all easements, restrictions, notes, terms and conditions shown on plan entitled "Site Plan, Dempsey Drive, Marcel Ave, Biddeford, Maine" dated March 2019, with revisions through October 31, 2019, recorded in the York County Registry of Deeds in Plan Book 407, Page 18.

DLN: 1002140173235

QUITCLAIM DEED (With Covenant)

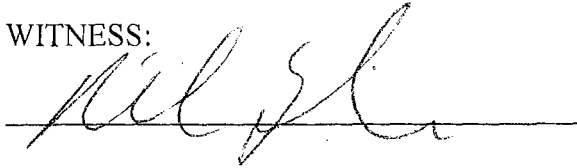
KNOW ALL PERSONS BY THESE PRESENTS, that **Mary C. Brown**, formerly known as **Mary T. DesRoberts**, of Old Orchard Beach, Maine, in consideration of One Dollar and other valuable consideration paid by **Brown Dog Carriers, LLC**, a Maine limited liability company, whose mailing address is PO Box 393, Biddeford, ME 04005, the receipt whereof is hereby acknowledged, does hereby Grant, with QUITCLAIM COVENANTS, unto the said Brown Dog Carriers, LLC, its successors and assigns forever, the following described real estate in Biddeford, Maine:

All those premises bounded and described on Exhibit A attached hereto and made a part hereof.

TO HAVE AND TO HOLD, the same, together with all the privileges and appurtenances thereunto belonging, to the said Brown Dog Carriers, LLC, its successors and assigns forever, to its use and behoof forever.

IN WITNESS WHEREOF, the said Mary C. Brown has hereunto signed and sealed this instrument this 23rd day of November, 2021.

WITNESS:



Mary C. Brown
Mary C. Brown, formerly known as Mary
T. DesRoberts

STATE OF MAINE
York, ss.

November 23, 2021

Then personally appeared the above-named Mary C. Brown, formerly known as Mary T. DesRoberts, and acknowledged the foregoing instrument to be her free act and deed.

Before me,

Michael J. Quintan
Notary Public/Attorney-at-Law
Print Name: Michael J. Quintan
My Commission Expires: _____

Maine R.E. Transfer Tax Paid

Exhibit A

A certain lot or parcel of land situate in said Biddeford near, but not on, Marcel Avenue, being bounded and described as follows:

Beginning at a point on the westerly side of land formerly owned by Hormidas Gagne at a point seven hundred (700) feet, more or less (which distance was erroneously recited as "one hundred (100) feet" in a deed from Estate of Celia Peller to George and Mary Des Roberts recorded in York County Registry of Deeds in Book 2098, Page 68), distant from State Highway Route No. 1 in Biddeford; and thence running Northerly a distance of five hundred thirty-five (535) feet by land now or formerly of one Tardif and known as the Foss lot; thence easterly by land now or formerly of one Tardif and the City of Biddeford a distance of five hundred ninety-seven (597) feet; thence Southerly by land now or formerly of one Paul Labelle a distance of five hundred forty-three (543) feet, more or less; thence Westerly by the land now or formerly of Hormidas Gagne and Marie Ange Gagne a distance of five hundred ninety-seven (597) feet to the point of beginning.

Reference is made to the deed of Hormidas Gagne and Marie Ange Gagne to Celia S. Peller, dated November 20, 1944, and recorded in said Registry in Book 1033, Page 39. The premises are referred to as a portion of premises conveyed to said Gagne from Florida Tardif by deed dated February 5, 1941, recorded in said Registry in Book 957, Page 258.

The above premises are also described as follows:

A certain lot or parcel of land located in the City of Biddeford, York County, Maine, shown on that certain plan titled "Plan Showing a Proposed Acquisition of Lands for The City of Biddeford Municipal Airport, Biddeford, Maine" dated May 13, 1985, as revised through November 14, 1985, prepared by Dow & Coulombe Engineers & Surveyors (such plan being called herein the "Airport Plan"), said lot being described as follows:

Beginning at a point at the southeasterly corner of land formerly of Clarence and Rita Belanger as described in a deed recorded in York County Registry of Deeds, in Book 1271, Page 179 (now of Brown Dog Carriers LLC as described in a deed from Dempsey LLC recorded in Book 18846, Page 723), which point of beginning is located on the northwesterly line of land of the City of Biddeford;

1. Thence, S 35 degrees 45 minutes 15 seconds W along said City of Biddeford property and land formerly of George H. DesRoberts and Mary T. DesRoberts, now of the City of Biddeford by deed from DesRoberts recorded in Book 5089, Page 40 (shown on the "Airport Plan" as parcel "10C") a total distance of 597.40 feet to a found stone monument (1985);

2. Thence N 55 degrees 02 minutes 05 seconds West along other land of the City of Biddeford as shown on said Airport Plan (see Order of Condemnation recorded in said Registry in Book 3965, Page 258), a distance of

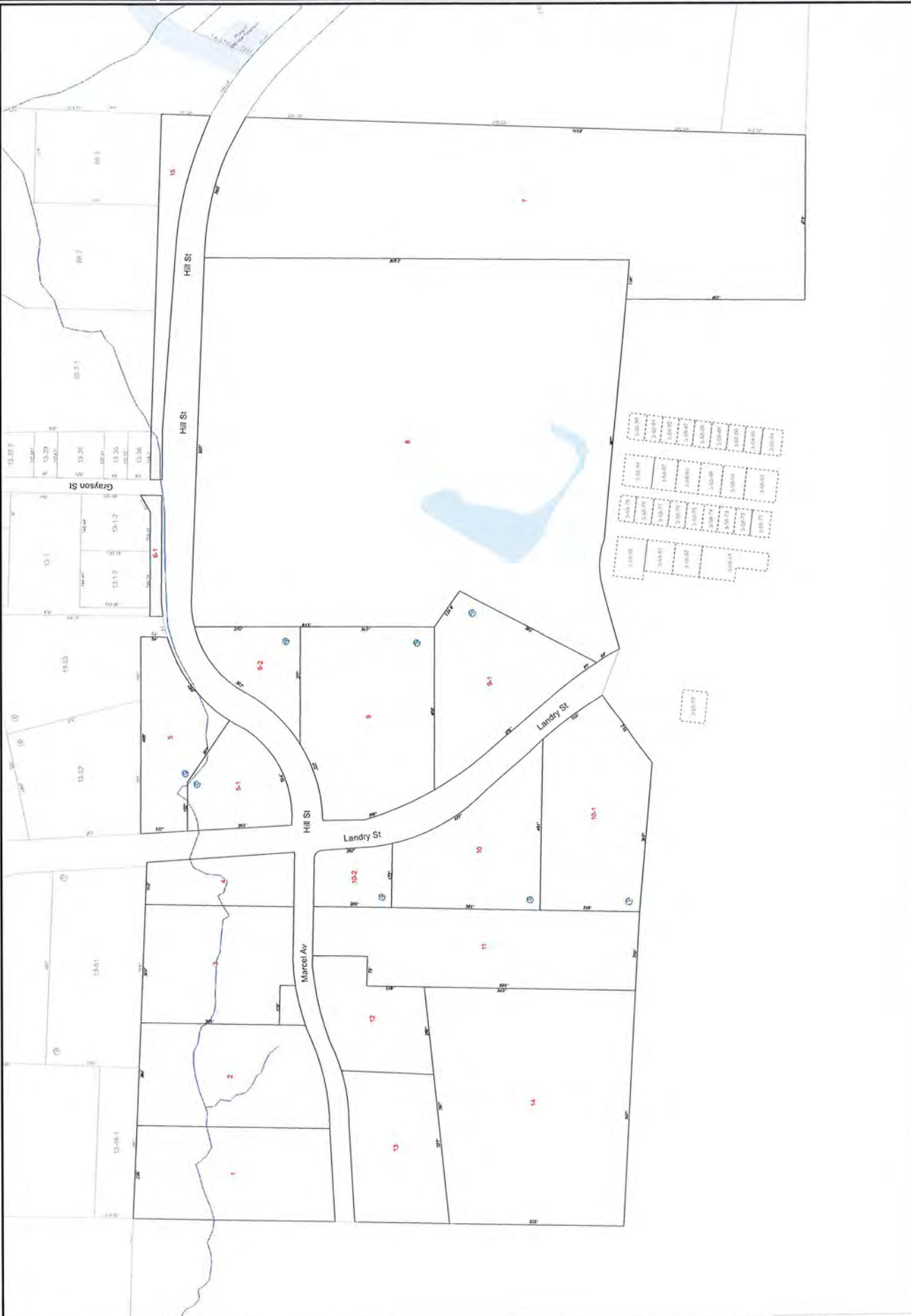
535 feet to land n/f Raymond and Eva Gagne, as described in a deed recorded in Book 2094, Page 140;

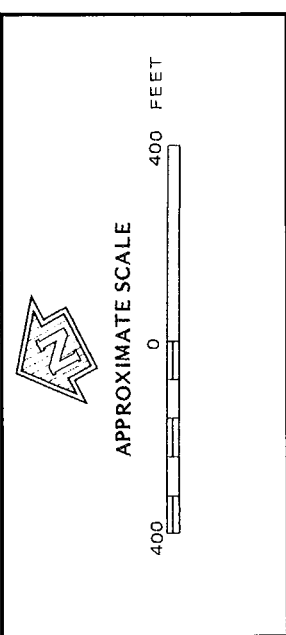
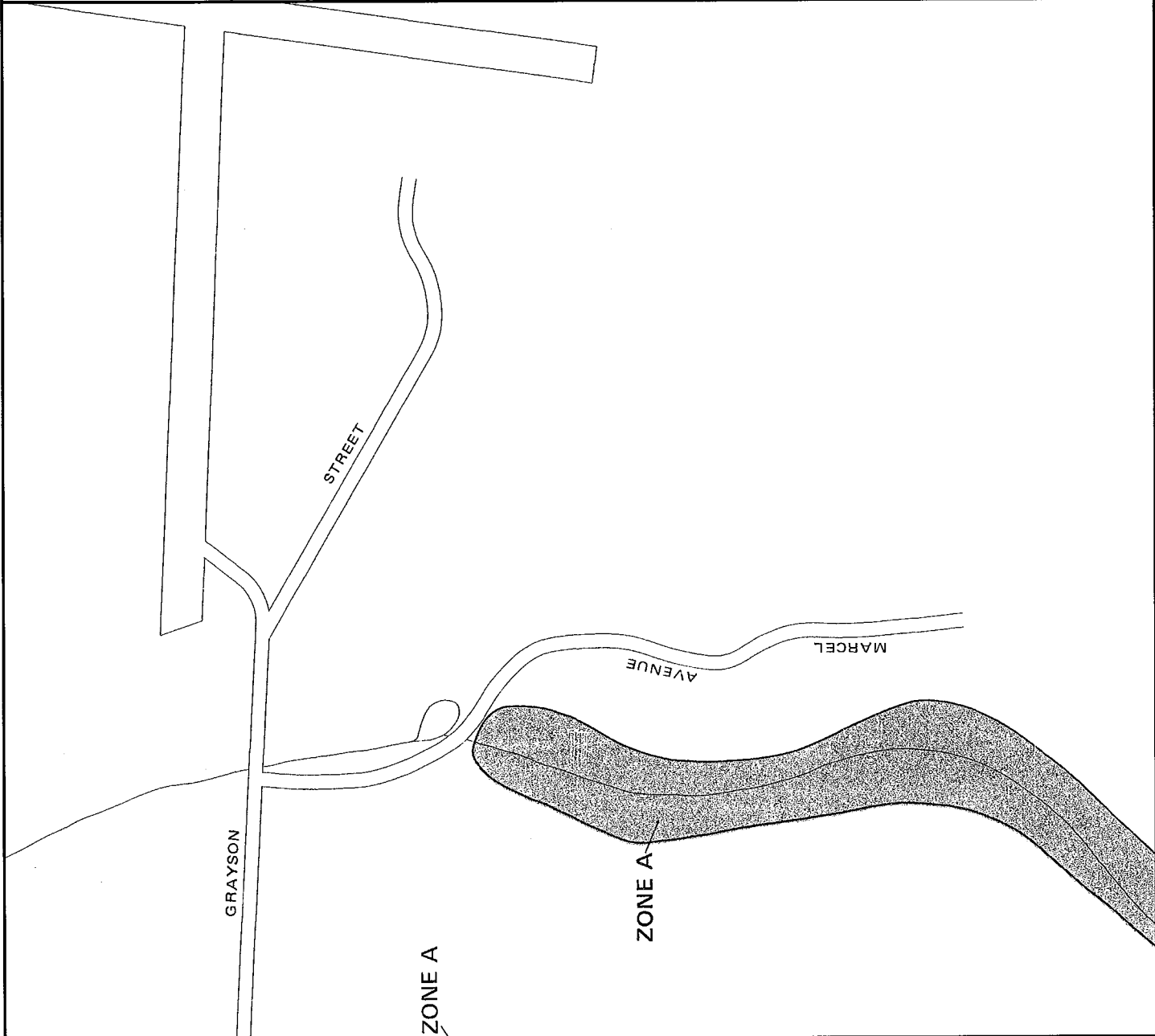
3. Thence N 34 degrees 59 minutes 35 seconds E a distance of 606.05 feet to said land now of Brown Dog Carriers LLC;

4. Thence S 54 degrees 07 minutes 00 seconds East along said land now of Brown Dog Carriers LLC a distance of 543.01 feet to the point of beginning.

Reference is made to what is called herein the "Airport Plan" being that certain plan titled "Plan Showing a Proposed Acquisition of Lands for The City of Biddeford Municipal Airport, Biddeford, Maine" dated May 13, 1985, as revised through November 14, 1985, prepared by Dow & Coulombe Engineers & Surveyors. The foregoing Airport Plan is on file with the Engineering Department of the City of Biddeford.

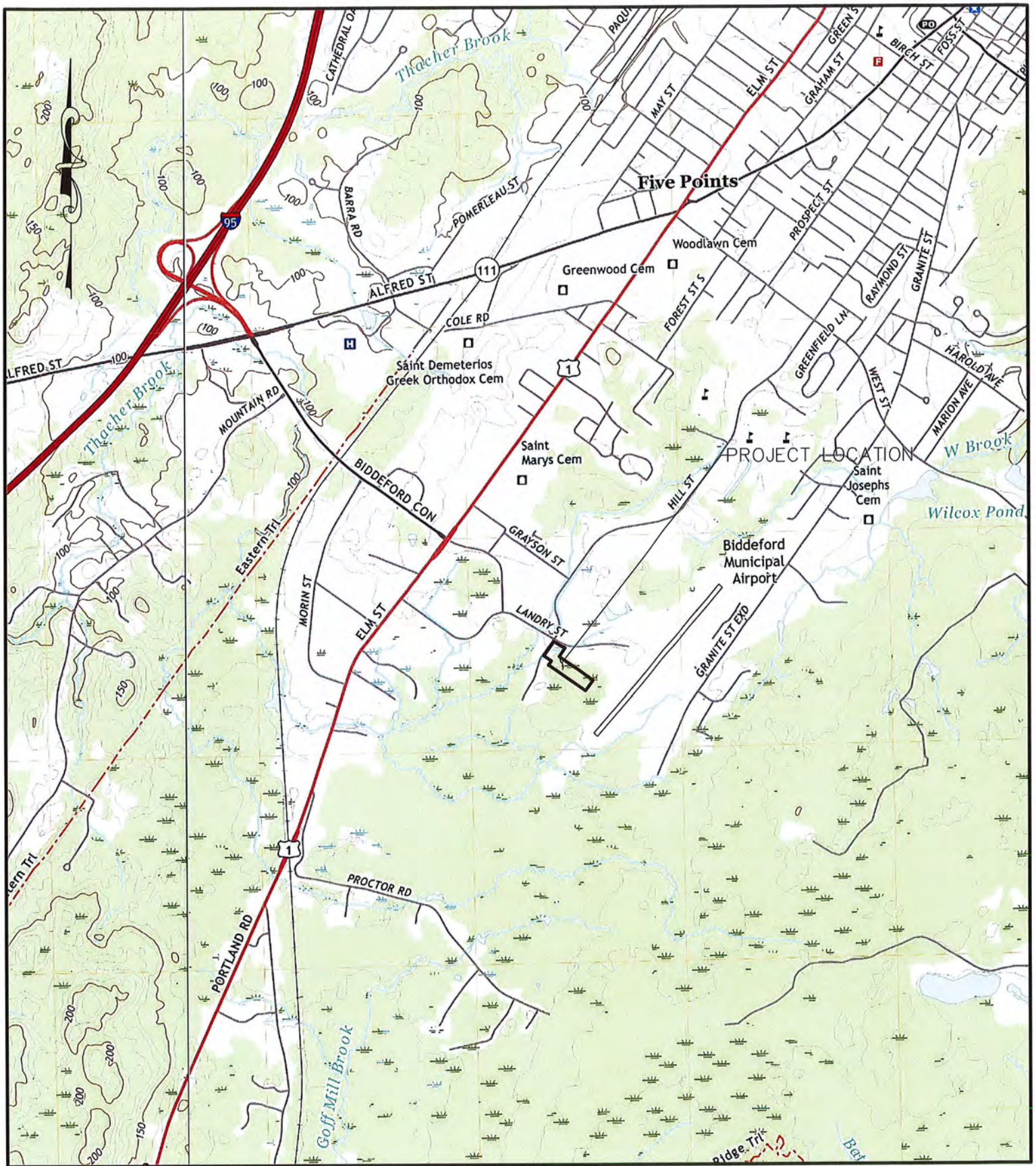
FIGURES
TAX MAP / USGS / FEMA & SOILS





NATIONAL FLOOD INSURANCE PROGRAM	
FIRM	FLOOD INSURANCE RATE MAP
CITY OF BIDDEFORD, MAINE YORK COUNTY	
PANEL 9 OF 11 (SEE MAP INDEX FOR PANELS NOT PRINTED)	
COMMUNITY-PANEL NUMBER 230145 0009 B	
EFFECTIVE DATE: MAY 15, 1984	
	
Federal Emergency Management Agency	

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



REFERENCES:

1. USGS QUADRANGLE BIDDEFORD, ME 2021
2. USGS QUADRANGLE KENNEBUNK, ME 2021

Scale: 1" = 2000'



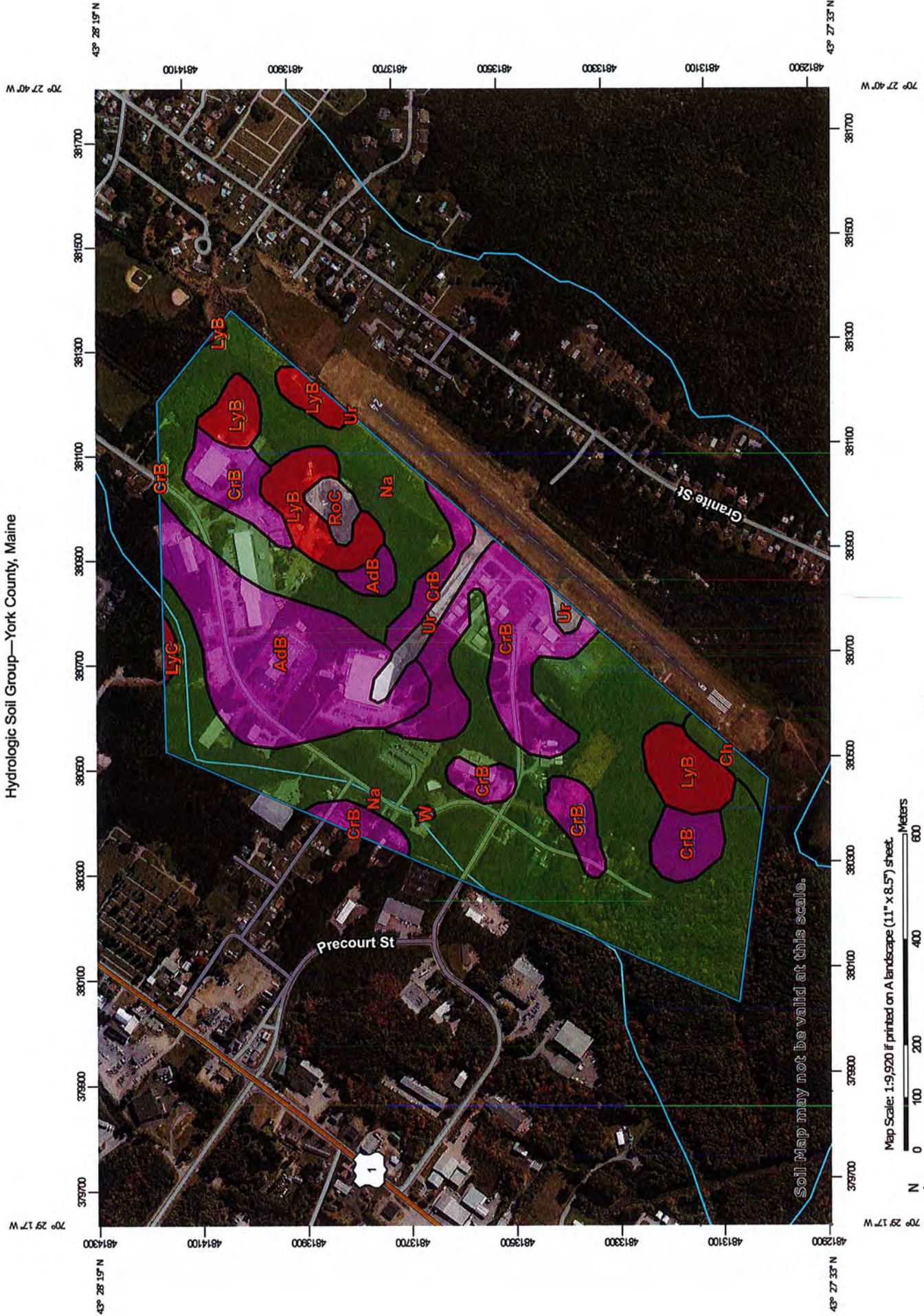
BH2M

Berry, Huff, McDonald, Milligan Inc.
Engineers, Surveyors

380B Main Street
Gorham, Maine 04038

Tel. (207) 839-2771
Fax (207) 839-8250

Hydrologic Soil Group—York County, Maine

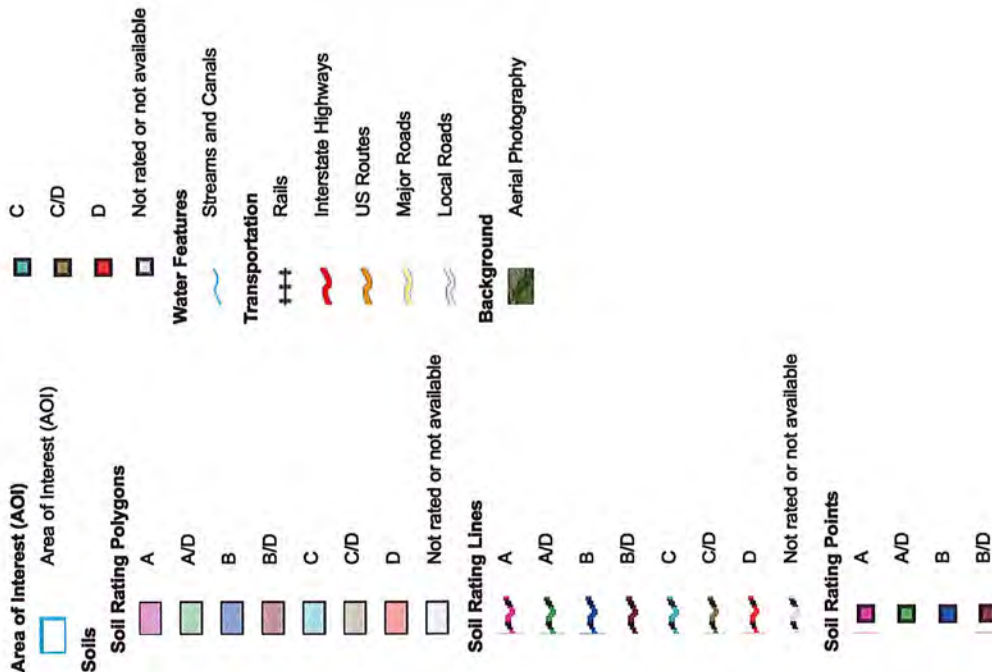


Map Scale: 1:9,920 if printed on A landscape (11" x 8.5") sheet.
 Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84



Soil Map may not be valid at this scale.

MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: <https://websoilsurvey.sc.egov.usda.gov/>
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: York County, Maine
Survey Area Data: Version 20, Aug 31, 2021

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.

WETLAND DELINEATION / VERNAL POOLS
MAINELY SOILS, LLC

To: Bill Thompson
BH2M, Inc.

Date: January 24, 2019

Project #: 19009



From: Alex Finamore, CWS, LSE
Mainely Soils, LLC

Re: 23 Marcel Avenue, Biddeford, ME – Wetland Delineation
Memorandum

At the request of BH2M, Inc (the "Client"), Mainely Soils, LLC conducted on-site wetland and waterbody delineations at an approximately 4.15 acre parcel located at 23 Marcel Avenue in Biddeford, Maine. The Client is assisting the property owner in developing the commercially zoned property. Mainely Soils conducted these field investigations to provide baseline environmental data to inform the proposed re-use of the site. The natural resources assessments described in this report were completed in January 2019. In addition to describing the identified resources this report describes the existing conditions within the study area, and the methodologies employed for the assessments.

PROJECT DESCRIPTION

The project site is located within a zone of commercial development along the Landry Street corridor. The proposed development site is currently occupied by a vacant residential dwelling and associated outbuildings (sheds). Surrounding land use to the north and west is residential and commercial along Landry Street and Marcel Avenue. Forested land dominates the landscape to the south with the Biddeford Municipal Airport to the east. In total, the wetland and waterbody delineation survey area encompassed approximately 4.15 acres, identified by the City of Biddeford as Tax Map 74 Lot 11.

SITE DESCRIPTION

The Study Area occurs in the Southern Coastal biophysical region of Maine (McMahon, 1990). The Southern Coastal biophysical region is characterized by relatively flat terrain, with elevations generally ranging up to 100 feet above sea level. Bedrock is frequently exposed and covered by thin glacial deposits. Along the immediate coast, soils are generally deep sands (where beaches occur) or shallow sandy loams that are well to excessively drained. Extensive coarse-grained glaciomarine deposits occur in the central portion of the South Coastal Region and along its western margin. The survey area is located within the Saco River watershed (Hydrologic Unit Classification (HUC) 8 identification 01060002), although surface water drainage within the site and vicinity is highly altered by existing developed land surfaces and stormwater management systems.

The Natural Resource Conservation Service soil survey mapping identifies native soils at the site as being formed within sandy deltaic or glaciofluvial deposits (Naumburg and Croghan series) (Web Soil Survey, 2018). The Naumburg series is a somewhat poorly drained soil map unit, portions of which contain hydric (wetland) soils. The Croghan series is a moderately well drained soil map unit. Soils within the site and the general vicinity have previously been substantially altered by historical site development. Alterations in such disturbed areas typically includes the addition of fill/transported materials, excavation and bank cuts, graded surfaces, and the addition of pavement.

Study Methodology

Mainely Soils conducted wetland delineation field work within the survey area on January 18, 2019. Mainely Soils delineated the boundary of wetlands 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). All wetland delineations were conducted using the Routine Determination Methods, which requires that a wetland contain a dominance of hydrophytic vegetation, hydric soils, and evidence of hydrology in order to be considered a wetland. Wetland boundaries were located and demarcated using pink and black day-glow "WETLAND DELINEATION" flagging, with each flag labeled with the corresponding alphabetic wetland identification code and a flag number (i.e. A-1). Wetland flag locations were recorded in the field using a Trimble® GPS unit capable of sub meter accuracy, post processed, and transferred and incorporated onto project mapping.

Mainly Soils completed one wetland and one upland Regional Supplement data form along the boundary of each identified wetland system to document the boundary. Additional field notes were also taken to record the classification of each wetland in accordance with the Classification of Wetlands and Deepwater Habitats of the United States, general site characteristics, unique qualities observed during the site assessment, and other considerations relevant to investigation findings and the future completion of a wetlands functions and values assessment in accordance with the Highway Methodology Workbook: Supplement. Mainly Soils took representative photographs of each wetland, drew labeled field sketches of the wetland boundary on an aerial photograph-based map, and recorded notes on the flagging sequence for each wetland.

Mainly Soils surveyed the site for streams, in accordance with the State of Maine Natural Resources Protection Act stream criteria and definitions. One intermittent stream segment was identified within the site.

Mainly Soils surveyed the site for potential vernal pools, in accordance with the State of Maine Natural Resources Protection Act vernal pool definitions. One ponded area was identified onsite, but was not considered a potential vernal pool due to the presence of an inlet and a permanently flooded water regime.

Study Results

Using the methodologies described above, Mainly Soils conducted a wetland delineation on January 18, 2019. A description of the identified resources follows. Supporting attachments Representative Photographs (Attachment 1). Wetland Delineation Data Forms can be provided upon request.

Wetlands at the project site consisted of five features; four palustrine seasonally saturated forested wetlands (PFO1E) dominated by deciduous trees (Wetlands A1, A3, A4, and A5), and one small palustrine emergent "wet meadow" (PEM1E) wetland (Wetland A2) (Cowardin et al, 1979).

Wetland A15-1 was in the north western portion of the site and was located in a concave depression formed by existing site contours. It had a seasonally saturated hydroperiod and was associated with intermittent Stream S1. A small excavated pond was located along Marcel Avenue. The outlet to the pond was a vegetated road ditch along Marcel Avenue draining in a southwesterly direction. Dominant vegetation consisted of red maple (*Acer rubrum*), gray birch (*Betula populifolia*), winterberry (*Ilex verticillata*), speckled alder (*Alnus incana*), cinnamon fern (*Osmunda cinnamomea*), purple loosestrife (*Lythrum salicaria*), and sensitive fern (*Onoclea sensibilis*). Soils within the wetland had a dark sandy loam surface overlaying a depleted loamy sand substratum. Evidence of wetland hydrology included pockets of water stained leaves, and saturation within 12" of the soil surface at the time of field investigations on January 18, 2019.

Wetland A15-2 was in the western portion of the site and was located in a concave depression draining southwesterly within a vegetated road ditch. Hydrology was provided from the road ditch to the north associated with Wetland A1. This wetland had a saturated hydroperiod and prevalent vegetation consisted of broadleaf cattail (*Typha latifolia*) and

purple loosestrife. The previously disturbed soils within the wetland consisted of fill debris (rock/brick/metal/etc) overlaying a depleted loamy sand substratum. Evidence of wetland hydrology included small pockets of water stained leaves, and saturation within 12" of the soil surface at the time of field investigations on January 18, 2019.

Wetlands A3, A4, and A5 were found on the central and eastern portions of the site. Wetlands A3 and A5 drained in a westerly direction whereas wetland A4 drained in a southeasterly direction. Dominant plants within these wetlands included red maple, gray birch, white pine (*Pinus strobus*), winterberry, highbush blueberry (*Vaccinium corymbosum*), sheep laurel (*Kalmia angustifolia*), cinnamon fern, and goldthread (*Coptis trifolia*). Evidence of wetland hydrology included saturation within the top 12 inches of the mineral surface, water stained vegetation and patches of sphagnum moss. Soils within these wetlands consisted of a dark loamy surface overlaying a depleted sandy substratum.

One intermittent stream segment was identified onsite located within Wetland A1. It flowed from a culvert outfall along Landry Street and terminated within the man-made pond along Marcel Avenue. The stream had a sandy mineral substrate between two defined banks approximately 6-8" in height. At the time of the delineation, there was approximately 2-3 inches of flowing water. The inlet to the culvert on the north side of Landry Street consisted of a vegetated road ditch. The outlet to the man-made pond consisted of a vegetated road ditch without a mineral bottom.

Summary

The information contained in this memorandum was collected in order to provide detailed, on-site information regarding wetland and waterbody resources. This information is intended to be used for project planning purposes and to support permitting needs. Four PFOIE wetlands and one PEMIE wetland were delineated on the site, and were identified as Wetlands A1-A5. One intermittent stream segment was located onsite within Wetland A1 starting at a culvert outfall and terminating at a man-made pond. No potential vernal pools were identified on the site.

Wetlands are regulated by the U.S. Army Corps of Engineers under the federal Clean Water Act, and by the Maine Department of Environmental Protection under the Maine Natural Resources Protection Act (NRPA). The State of Maine further differentiates wetlands under NRPA by regulating certain wetlands as "wetlands of special significance" (WOSS). Neither of the wetlands within the site constitute a WOSS under NRPA, although they are still subject to NRPA jurisdiction as non-WOSS wetlands.

Wetlands within the survey area may be further regulated under municipal ordinances, such as Shoreland Zone, Site Plan Review, or other local ordinances. Impacts to wetlands resulting from proposed project development require that permits first be obtained from the MDEP and the USACE before proceeding with construction, and where applicable, municipal governing bodies. Consultation with these agencies early in the project design process is encouraged.

References:

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitat in the United States. U.S. Fish and Wildlife Service. FWS/OBD-79/31 103pp.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

McMahon, J.S. 1990. The Biophysical Regions of Maine: Patterns in the Landscape and Vegetation. University of Maine.

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U.S. Army Corps of Engineers (USACE). 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. ERDC/EL TR-12-01. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Web Soil Survey. 2018. U.S. Department of Agriculture – Natural Resources Conservation Service.
<http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

Attachments:

1. Representative Site Photographs

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Ref: 19009
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Attachment 1
Representative Site Photographs

Natural Resource Photographs – 01/18/2019
23 Marcel Avenue, Biddeford, Maine



Photo 1: View looking north across Wetland A1 near Marcel Avenue near flag 4.



Photo 2: View looking easterly across forested Wetland A1 along Landry Street.



Photo 3: View looking downstream of Stream S1 within Wetland A1.



Photo 4: View looking upstream of Stream S1 within Wetland A1.

Natural Resource Photographs – 01/18/2019
23 Marcel Avenue, Biddeford, Maine



Photo 5: View east at Wetland A2 adjacent to Marcel Avenue near flag 1.



Photo 6: View west through Wetland A3 near flag 5.



Photo 7: View northeast at Wetland A4 near flag 5.



Photo 8: View north at Wetland A5.

LIGHTING CUT SHEETS - VISIBLE LIGHT



WDGE1 LED

Architectural Wall Sconce



Catalog
Number

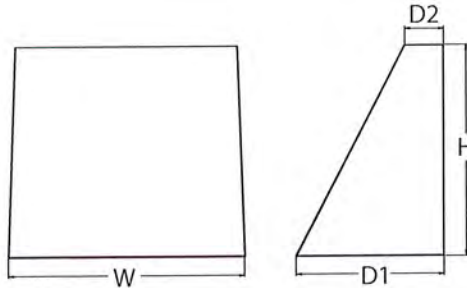
Notes

Type

Hit the tab key or mouse over the page to see alternative elements.

Specifications

Depth (D1): 5.5"
Depth (D2): 1.5"
Height: 8"
Width: 9"
Weight: 9 lbs
(without options)



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing true site-wide solution.

WDGE1 delivers up to 2,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. The compact size of WDGE1, with its integrated emergency battery backup option, makes it an ideal over-the-door wall-mounted lighting solution.

WDGE LED Family Overview

Luminaire	Standard EM, 0°C	Cold EM, -20°C	Sensor	Lumens (4000K)					
				P1	P2	P3	P4	P5	P6
WDGE1 LED	4W	--	--	1,200	2,000	--	--	--	--
WDGE2 LED	10W	18W	Standalone / nLight	1,200	2,000	3,000	4,500	6,000	--
WDGE3 LED	15W	18W	Standalone / nLight	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	--	--	Standalone / nLight	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE1 LED P2 40K 80CRI VF MVOLT SRM PE DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE1 LED	P1	27K 2700K	80CRI	VF Visual comfort forward throw	MVOLT	Shipped included SRM Surface mounting bracket ICW Indirect Canopy/Ceiling Washer bracket (dry/damp locations only) ⁵ Shipped separately AWS 3/8inch Architectural wall spacer PBBW Surface-mounted back box (top, left, right conduit entry) Use when there is no junction box available.
	P2	30K 3000K	90CRI	VW Visual comfort wide	347 ²	
		35K 3500K				
		40K 4000K				
		50K ¹ 5000K				

Options

Finish

E4WH³ Emergency battery backup, Certified in CA Title 20 MAEDBS (4W, 0°C min)
PE⁴ Photocell, Button Type
DS Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details)
DMG 0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)
BCE Bottom conduit entry for back box (PBBW). Total of 4 entry points.
BAA Buy America(n) Act Compliant

DDBXD	Dark bronze	DDBTXD	Textured dark bronze
DBLXD	Black	DBLTXD	Textured black
DNAXD	Natural aluminum	DNATXD	Textured natural aluminum
DWHXD	White	DWHGXD	Textured white
DSSXD	Sandstone	DSSTXD	Textured sandstone

Accessories

Ordered and shipped separately.

WDGEAWS DDBXD WDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE1PBBW DDBXD U WDGE1 surface-mounted back box (specify finish)

NOTES

- 50K not available in 90CRI.
- 347V not available with E4WH, DS or PE.
- E4WH not available with PE or DS.
- PE not available with DS.
- Not qualified for DLC. Not available with E4WH.



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WDGE1 LED
Rev. 11/21/22

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	27K (2700K, 80 CRI)					30K (3000K, 80 CRI)					35K (3500K, 80 CRI)					40K (4000K, 80 CRI)					50K (5000K, 80 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P1	10W	VF	1,120	112	0	0	0	1,161	116	0	0	0	1,194	119	0	0	0	1,227	123	0	0	0	1,235	123	0	0	0
		VW	1,122	112	0	0	0	1,163	116	0	0	0	1,196	120	0	0	0	1,229	123	0	0	0	1,237	124	0	0	0
P2	15W	VF	1,806	120	1	0	0	1,872	125	1	0	0	1,925	128	1	0	0	1,978	132	1	0	0	1,992	133	1	0	0
		VW	1,809	120	1	0	0	1,876	125	1	0	0	1,929	128	1	0	0	1,982	132	1	0	0	1,996	133	1	0	0

Electrical Load

Performance Package	System Watts	Current (A)				
		120V	208V	240V	277V	347V
P1	10W	0.082	0.049	0.043	0.038	--
	13W	--	--	--	--	0.046
P2	15W	0.132	0.081	0.072	0.064	--
	18W	--	--	--	--	0.056

Lumen Multiplier for 90CRI

CCT	Multiplier
27K	0.845
30K	0.867
35K	0.845
40K	0.885
50K	0.898

Lumen Output in Emergency Mode (4000K, 80 CRI)

Option	Dist. Type	Lumens
E4WH	VF	646
	VW	647

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.03
10°C	50°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

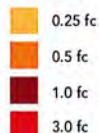
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	>0.96	>0.95	>0.91

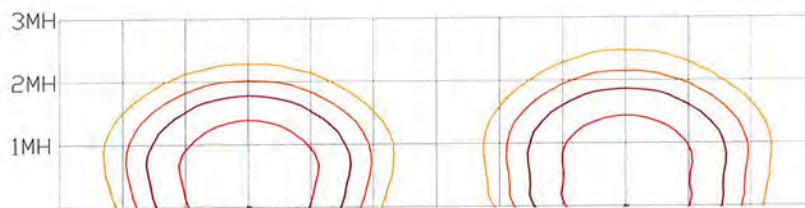
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting WDGE LED homepage.
Tested in accordance with IESNA LM-79 and LM-80 standards.

LEGEND



MH = 8ft
Grid = 8ft x 8ft



WDGE1 LED P2 40K 80CRI VW

WDGE1 LED P2 40K 80CRI VF

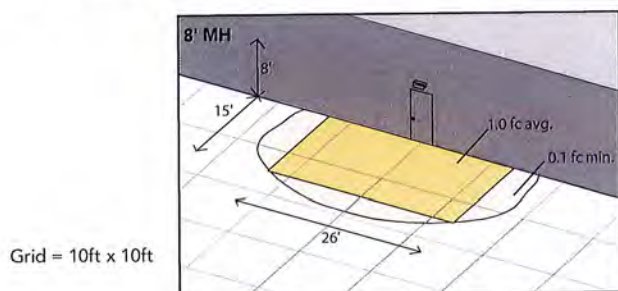
Emergency Egress Options

Emergency Battery Backup

The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All emergency battery backup configurations include an independent secondary driver with an integral relay to immediately detect loss of normal power and automatically energize the luminaire. The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time normal power is lost and maintain a minimum of 60% of the light output at the end of 90 minutes.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9

The example below shows illuminance of 1 fc average and 0.1 fc minimum in emergency mode with E4WH and VF distribution.

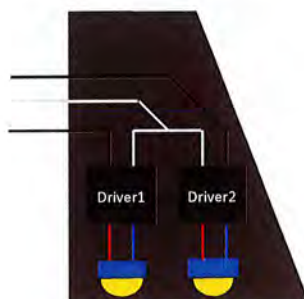


WDGE1 LED xx 40K 80CRI VF MVOLT E4WH

Dual Switching (DS) Option

The dual switching option offers operational redundancy that certain codes require. With this option the luminaire comes integrated with two drivers and two light engines. These work completely independent to each other so that a failure of any individual component does not cause the whole luminaire to go dark. This option is typically used with a back generator or inverter providing emergency power.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9





E4WH – 4W Emergency Battery Backup

D = 5.5"

H = 8"

W = 9"



PBBW – Surface-Mounted Back Box

Use when there is no junction box available.

D = 1.75"

H = 8"

W = 9"



AWS – 3/8inch Architectural Wall Spacer

D = 0.38"

H = 4.4"

W = 7.5"

FEATURES & SPECIFICATIONS

INTENDED USE

Common architectural look, with clean rectilinear shape, of the WEDGE LED was designed to blend with any type of construction, whether it be tilt-up, frame or brick. Applications include commercial offices, warehouses, hospitals, schools, malls, restaurants, and other commercial buildings.

CONSTRUCTION

The single-piece die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP66 rating for the luminaire.

FINISH

Exterior painted parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS

Well crafted reflector optics allow the light engine to be recessed within the luminaire, providing visual comfort, superior distribution, uniformity, and spacing in wall-mount applications. The WEDGE LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L91/100,000 hours at 25°C). The electronic driver has a power factor of >90%, THD <20%. Luminaire comes with built in 6kV surge protection, which meets a minimum Category C low exposure (per ANSI/IEEE C62.41.2). Fixture ships standard with 0-10v dimmable driver.

INSTALLATION

A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections. The 3/8" Architectural Wall Spacer (AWS) can be used to create a floating appearance or to accommodate small imperfections in the wall surface. The ICW option can be used to mount the luminaire inverted for indirect lighting in dry and damp locations. Design can withstand up to a 1.5 G vibration load rating per ANSI C136.31.

LISTINGS

CSA certified to U.S. and Canadian standards. Luminaire is IP66 rated. PIR options are rated for wet location. Rated for -40°C minimum ambient. DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 2700K and 3000K color temperature only and SRM mounting only.

BUY AMERICAN ACT

Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



WDGE3 LED

Architectural Wall Sconce



Catalog
Number

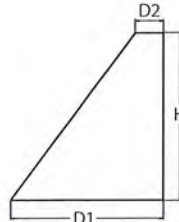
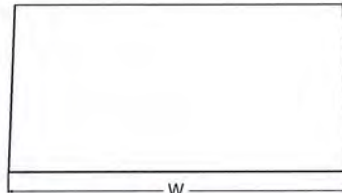
Notes

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Specifications

Depth (D1): 8"
Depth (D2): 1.5"
Height: 9"
Width: 18"
Weight: 19.5 lbs
(without options)



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE3 has been designed to deliver up to 12,000 lumens through a precision refractive lens with wide distribution, perfect for augmenting the lighting from pole mounted luminaires.

WDGE LED Family Overview

Luminaire	Standard EM, 0°C	Cold EM, -20°C	Sensor	Lumens (4000K)					
				P1	P2	P3	P4	P5	P6
WDGE1 LED	4W	--	--	1,200	2,000	--	--	--	--
WDGE2 LED	10W	18W	Standalone / nLight	1,200	2,000	3,000	4,500	6,000	--
WDGE3 LED	15W	18W	Standalone / nLight	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	--	--	Standalone / nLight	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE3 LED P3 40K 70CRI R3 MVOLT SRM DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE3 LED	P1	30K 3000K	70CRI	R2 Type 2	MVOLT	Shipped included
	P2	40K 4000K	80CRI	R3 Type 3	347 ¹	SRM Surface mounting bracket
	P3	50K 5000K		R4 Type 4	480 ¹	ICW Indirect Canopy/Ceiling Washer bracket (dry/damp locations only) ¹
	P4			RFT Forward Throw		
						Shipped separately
						AWS 3/8inch Architectural wall spacer
						PBBW Surface-mounted back box (top, left, right conduit entry). Use when there is no junction box available.

Options	Finish
E15WH Emergency battery backup, Certified in CA Title 20 MAEDBS (15W, 5°C min)	DDBXD Dark bronze
E20WC Emergency battery backup, Certified in CA Title 20 MAEDBS (18W, -20°C min)	DBLXD Black
PE ² Photocell, Button Type	DNAXD Natural aluminum
DMG ³ 0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)	DWHXD White
BCE Bottom conduit entry for back box (PBBW). Total of 4 entry points.	DSSXD Sandstone
SPD10KV 10KV Surge pack	DDBTXD Textured dark bronze
BAA Buy America(n) Act Compliant	DBLBXD Textured black
	DNATXD Textured natural aluminum
	DWHGXD Textured white
	DSSTXD Textured sandstone
Standalone Sensors/Controls PIR Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching. PIRH Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching PIR1FC3V Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation. PIRH1FC3V Bi-level (100/35%) motion sensor for 15-30' mounting heights with photocell pre-programmed for dusk to dawn operation. Networked Sensors/Controls NLTAIR2 PIR nLightAIR Wireless enabled bi-level motion/ambient sensor for 8-15' mounting heights. NLTAIR2 PIRH nLightAIR Wireless enabled bi-level motion/ambient sensor for 15-30' mounting heights. See page 4 for out of box functionality	

Accessories

Ordered and shipped separately.

WDGEAWS DDBXD WDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE3PBBW DDBXD U WDGE3 surface-mounted back box (specify finish)

NOTES

- 347V and 480V not available with E15WH and E20WC.
- PE not available in 480V and with sensors/controls.
- DMG option not available with sensors/controls.
- Not qualified for DLC. Not available with emergency battery backup or sensors/controls



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WDGE3 LED
Rev. 11/21/22

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P1	52W	R2	7,037	136	1	0	1	7,649	148	2	0	1	7,649	148	2	0	1
		R3	6,922	134	1	0	2	7,524	145	1	0	2	7,524	145	1	0	2
		R4	7,133	138	1	0	2	7,753	150	1	0	2	7,753	150	1	0	2
		RFT	6,985	135	1	0	2	7,592	147	1	0	2	7,592	147	1	0	2
P2	59W	R2	7,968	135	2	0	1	8,661	147	2	0	1	8,661	147	2	0	1
		R3	7,838	133	1	0	2	8,519	144	1	0	2	8,519	144	1	0	2
		R4	8,077	137	1	0	2	8,779	149	1	0	2	8,779	149	1	0	2
		RFT	7,909	134	1	0	2	8,597	146	2	0	2	8,597	146	2	0	2
P3	71W	R2	9,404	132	2	0	1	10,221	143	2	0	1	10,221	143	2	0	1
		R3	9,250	130	2	0	2	10,054	141	2	0	2	10,054	141	2	0	2
		R4	9,532	134	2	0	2	10,361	145	2	0	2	10,361	145	2	0	2
		RFT	9,334	131	2	0	2	10,146	142	2	0	2	10,146	142	2	0	2
P4	88W	R2	11,380	129	2	0	1	12,369	140	2	0	1	12,369	140	2	0	1
		R3	11,194	127	2	0	2	12,167	138	2	0	2	12,167	138	2	0	2
		R4	11,535	131	2	0	2	12,538	142	2	0	2	12,538	142	2	0	2
		RFT	11,295	128	2	0	2	12,277	139	2	0	2	12,277	139	2	0	2

Electrical Load

Performance Package	System Watts	Current (A)					
		120V	208V	240V	277V	347V	480V
P1	52W	0.437	0.246	0.213	0.186	0.150	0.110
P2	59W	0.498	0.287	0.251	0.220	0.175	0.126
P3	71W	0.598	0.344	0.300	0.262	0.210	0.152
P4	88W	0.727	0.424	0.373	0.333	0.260	0.190

Lumen Output in Emergency Mode (4000K, 70 CRI)

Option	Dist. Type	Lumens
E15WH	R2	3,185
	R3	3,133
	R4	3,229
	RFT	3,162
E20WC	R2	3,669
	R3	3,609
	R4	3,719
	RFT	3,642

Lumen Multiplier for 80CRI

CCT	Multiplier
30K	0.891
40K	0.906
50K	0.906

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient	Lumen Multiplier
0°C	1.05
10°C	1.03
20°C	1.01
25°C	1.00
30°C	0.99
40°C	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	>0.98	>0.97	>0.92

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting WDGE LED homepage. Tested in accordance with IESNA LM-79 and LM-80 standards.

LEGEND



MH = 15ft
Grid = 15ft x 15ft

WDGE3 LED P3 40K 70CRI R2

WDGE3 LED P3 40K 70CRI R3

WDGE3 LED P3 40K 70CRI R4

WDGE3 LED P3 40K 70CRI RFT

Emergency Egress Options

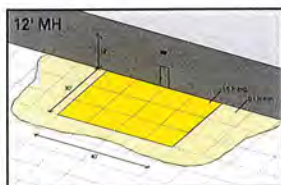
Emergency Battery Backup

The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All emergency battery backup configurations include an independent secondary driver with an integral relay to immediately detect loss of normal power and automatically energize the luminaire. The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time normal power is lost and maintain, minimum of 60% of the light output at the end of 90 minutes.

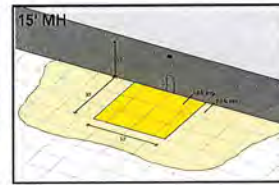
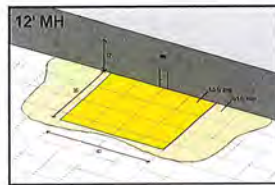
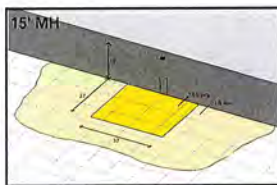
Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9

The examples below show illuminance of 1 fc average and 0.1 fc minimum in emergency mode with E15WH or E20WC and R4 distribution.

Grid = 10ft x 10ft



WDGE3 LED xx 40K 70CRI R4 MVOLT E15WH



WDGE3 LED xx 40K 70CRI R4 MVOLT E20WC

Motion/Ambient Sensor (PIR_, PIRH_)

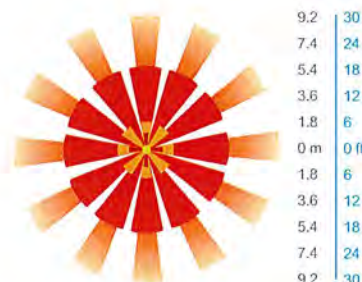
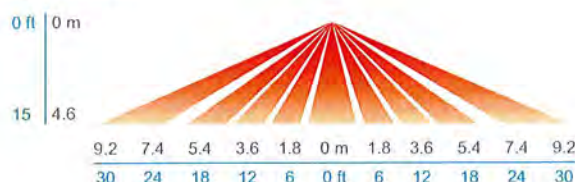
Motion/Ambient sensor (Sensor Switch MSOD) is integrated into the the luminaire. The sensor provides both Motion and Daylight based dimming of the luminaire. For motion detection, the sensor utilizes 100% Digital Passive Infrared (PIR) technology that is tuned for walking size motion while preventing false tripping from the environment. The integrated photocell enables additional energy savings during daytime periods when there is sufficient daylight. Optimize sensor coverage by either selecting PIR or PIRH option. PIR option comes with a sensor lens that is optimized to provide maximum coverage for mounting heights between 8-15ft, while PIRH is optimized for 15-40ft mounting height.

Networked Control (NLTAIR2)

nLight® AIR is a wireless lighting controls platform that allows for seamless integration of both indoor and outdoor luminaires. Five-tier security architecture, 900 MHz wireless communication and app (CLAIRITY™ Pro) based configurability combined together make nLight® AIR a secure, reliable and easy to use platform.

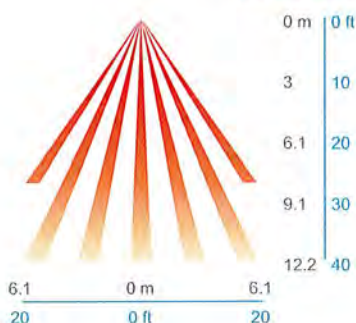
PIR

HIGH VIEW

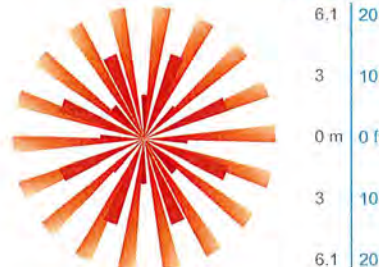


PIRH

SIDE VIEW



TOP VIEW



Motion/Ambient Sensor Default Settings

Option	Dim Level	High Level (when triggered)	Photocell Operation	Motion Time Delay	Ramp-down Time	Ramp-up Time
PIR or PIRH	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
PIR1FC3V, PIRH1FC3V	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 1fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
NLTAIR2 PIR, NLTAIR2 PIRH (out of box)	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	7.5 min	5 min	Motion - 3 sec Photocell - 45 sec



**NLTAIR2 PIR – nLight AIR
Motion/Ambient Sensor**

D = 8"
H = 11"
W = 18"



PBBW – Surface-Mounted Back Box
Use when there is no junction box available.

D = 1.75"
H = 9"
W = 18"



AWS – 3/8inch Architectural Wall Spacer

D = 0.38"
H = 4.4"
W = 7.5"

FEATURES & SPECIFICATIONS

INTENDED USE

Common architectural look, with clean rectilinear shape, of the WDGE LED was designed to blend with any type of construction, whether it be tilt-up, frame or brick. Applications include commercial offices, warehouses, hospitals, schools, malls, restaurants, and other commercial buildings.

CONSTRUCTION

The single-piece die-cast aluminum housing to optimize thermal transfer from the light engine and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP65 rating for the luminaire.

FINISH

Exterior painted parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS

Individually formed acrylic lenses are engineered for superior application efficiency which maximizes the light in the areas where it is most needed. Light engines are available in 3000 K, 4000 K or 5000 K configurations. The WDGE LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L92/100,000 hours at 25°C). The electronic driver has a power factor of >90%, THD <20%. Luminaire comes with built in 6kV surge protection, which meets a minimum Category C low exposure (per ANSI/IEEE C62.41.2). Fixture ships standard with 0-10V dimmable driver.

INSTALLATION

A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections. The 3/8" Architectural Wall Spacer (AWS) can be used to create a floating appearance or to accommodate small imperfections in the wall surface. The ICW option can be used to mount the luminaire inverted for indirect lighting in dry and damp locations. Design can withstand up to a 1.5 G vibration load rating per ANSI C136.31.

LISTINGS

CSA certified to U.S. and Canadian standards. Light engines are IP66 rated; luminaire is IP65 rated. PIR options are rated for wet location. Rated for -40°C minimum ambient. DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature and SRM mounting only.

BUY AMERICAN ACT

Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



D-Series Size 0 LED Area Luminaire



d"series

Specifications

EPA: 0.44 ft²
(0.04 m²)

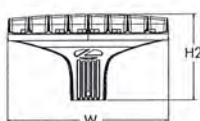
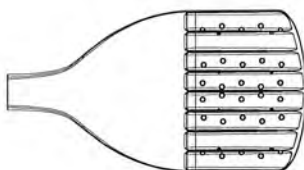
Length: 26.18"
(66.5 cm)

Width: 14.06"
(35.7 cm)

Height H1: 2.26"
(5.7 cm)

Height H2: 7.46"
(18.9 cm)

Weight: 23 lbs
(10.4 kg)



Catalog
Number

Notes

Type

For the full key to mounting and for pole and all other details visit www.lithonia.com

Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED							
Series	LEDs	Color temperature ²	Color Rendering Index ²	Distribution		Voltage	Mounting
DSX0 LED	Forward optics	(this section 70CRI only)		AFR	Automotive front row	TSM	Type V medium
	P1 P5	30K 3000K	70CRI	T1S	Type I short	TSLG	Type V low glare
	P2 P6	40K 4000K	70CRI	T2M	Type II medium	T5W	Type V wide
	P3 P7	50K 5000K	70CRI	T3M	Type III medium	BLC3	Type III backlight control ³
	P4	(this section 80CRI only, extended lead times apply)		T3LG	Type III low glare ³	BLC4	Type IV backlight control ³
	Rotated optics			T4M	Type IV medium	LCCO	Left corner cutoff ⁴
	P10 ¹ P12 ¹	27K 2700K	80CRI	T4LG	Type IV low glare ³	RCCO	Right corner cutoff ³
	P11 ¹ P13 ¹	30K 3000K	80CRI	TFTM	Forward throw medium		
		35K 3500K	80CRI				
		40K 4000K	80CRI				
		50K 5000K	80CRI				
						MVOLT (120V-277V) ⁴	Shipped included
						HVOLT (347V-480V) ^{5,6}	SPA Square pole mounting (#8 drilling, 3.5" min. SQ pole)
						XVOLT (277V-480V) ^{7,8}	RPA Round pole mounting (#8 drilling, 3" min. RND pole)
							SPA5 Square pole mounting (#5 drilling, 3" min. SQ pole) ⁹
							RPA5 Round pole mounting (#5 drilling, 3" min. RND pole) ⁹
							SPA8N Square narrow pole mounting (#8 drilling, 3" min. SQ pole)
							WBA Wall bracket ¹⁰

Control options

Shipped installed

NLTAIR2 PIRHN nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc^{11, 12, 18, 19}

PIR High/low, motion/ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc^{13, 18, 19}

PER NEMA twist-lock receptacle only (controls ordered separately)¹⁴

PERS Five-pin receptacle only (controls ordered separately)^{14, 19}

PER7 Seven-pin receptacle only (controls ordered separately)^{14, 19}

FAO Field adjustable output^{15, 19}

BL30 Bi-level switched dimming, 30%^{16, 19}

BL50 Bi-level switched dimming, 50%^{16, 19}

DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)¹⁷

Other options

Shipped installed

HS Houseside shield (black finish standard)²⁰

L90 Left rotated optics¹

R90 Right rotated optics¹

CCE Coastal Construction²¹

Shipped separately

EGSR External Glare Shield (reversible, field install required, matches housing finish)

BSDB Bird Spikes (field install required)

Finish (required)

DDBXD Dark Bronze

DBLXD Black

DNAXD Natural Aluminum

DWHXD White

DBDXTD Textured dark bronze

DBLXTD Textured black

DNATXD Textured natural aluminum

DWHGXD Textured white

Ordering Information

Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) ²²
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) ²²
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) ²²
DSHORT SBK	Shorting cap ²²
DSXHS P#	House-side shield (enter P1-7, P10-13 in place of #)
DSXSPA (FINISH)	Round pole adapter (#8 drilling, specify finish)
DSXSPA5 (FINISH)	Round pole adapter #5 drilling (specify finish)
DSXSPA5 (FINISH)	Square pole adapter #5 drilling (specify finish)
DSXEGSR (FINISH)	External glare shield

NOTES

- Rotated optics available with packages P10, P11, P12 and P13. Must be combined with option L90 or R90.
- 30K, 40K, and 50K available in 70CRI and 80CRI. 27K and 35K only available with 80CRI. Contact Technical Support for other possible combinations.
- T3LG, T4LG, BLC3, BLC4, LCCO, RCCO not available with option HS.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
- HVOLT not available with package P1, P2 and P10 when combined with option NLTAIR2 PIRHN or option PIR.
- XVOLT operates with any voltage between 277V and 480V (50/60 Hz).
- XVOLT not available in packages P1, P2 or P10.
- SPA5 and RPA5 for use with #5 drilling only (Not for use with #8 drilling).
- WBA cannot be combined with Type 5 distributions plus photocell (PER).
- NLTAIR2 and PIRHN must be ordered together. For more information on nLight Air 2.
- NLTAIR2 PIRHN not available with other controls including PIR, PER, PER5, PER7, FAO, BL30, BL50 and DMG. NLTAIR2 PIRHN not available with P1, P2 and P10 using HVOLT. NLTAIR2 PIRHN not available with P1, P2 and P10 using XVOLT.
- PIR not available with NLTAIR2, PER, PER5, PER7, FAO BL30, BL50 and DMG. PIR not available with P1, P2 and P10 using HVOLT. PIR not available with P1, P2 and P10 using XVOLT.
- PER/PER5/PER7 not available with NLTAIR2, PIR, BL30, BL50. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
- FAO not available with other dimming control options NLTAIR2 PIRHN, PIR, PER5, PER7, BL30, BL50, or DMG.
- BL30 and BL50 are not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, FAO and DMG.
- DMG not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50 and FAO.
- Reference Motion Sensor Default Settings table on page 4 to see functionality.
- Reference Controls Options table on page 4.
- Option HS not available with T3LG, T4LG, BLC3, BLC4, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
- CCE option not available with option BS and EGS. Contact Technical Support for availability.
- Requires luminaire to be specified with PER, PER5 or PER7 option. See Controls Table on page 4.

Shield Accessories



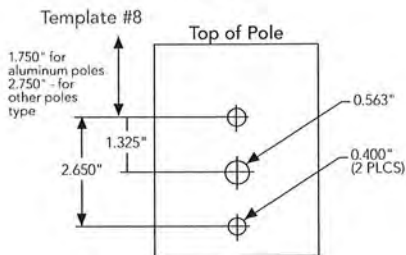
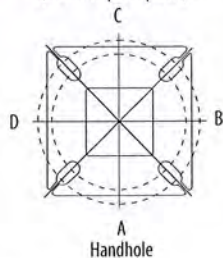
External Glare Shield (EGS)



House Side Shield (HS)

Drilling

HANDHOLE ORIENTATION (from top of pole)



Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS
Minimum Acceptable Outside Pole Dimension							
SPA	#8	3.5"	3.5"	3.5"	3.5"		3.5"
RPA	#8	3"	3"	3"	3"	3"	3"
SPA5	#5	3"	3"	3"	3"		3"
RPA5	#5	3"	3"	3"	3"	3"	3"
SPA8N	#8	3"	3"	3"	3"		3"

DSX0 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX0 with SPA	0.44	0.88	0.96	1.18	---	1.16
DSX0 with SPA5, SPA8N	0.51	1.02	1.06	1.26	---	1.29
DSX0 with RPA, RPA5	0.51	1.02	1.06	1.26	1.24	1.29
DSX0 with MA	0.64	1.28	1.24	1.67	1.70	1.93

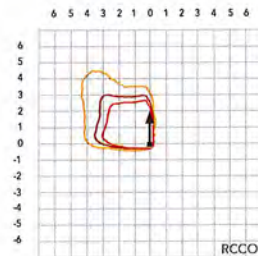
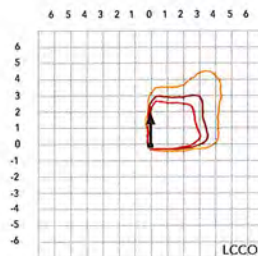
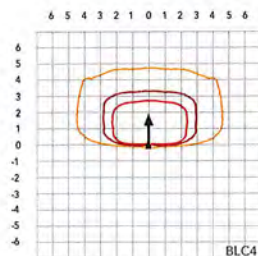
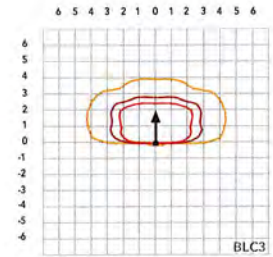
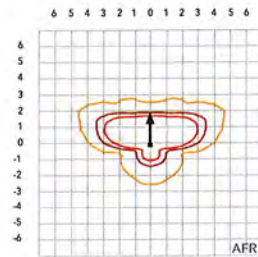
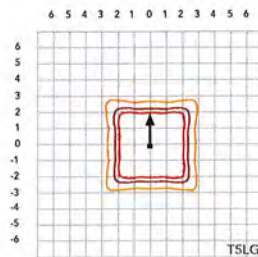
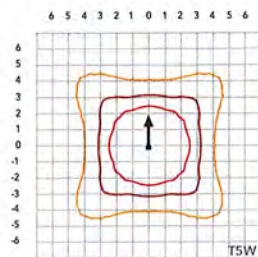
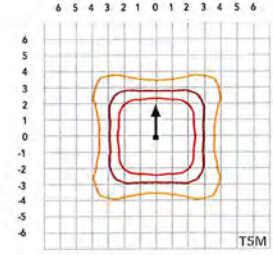
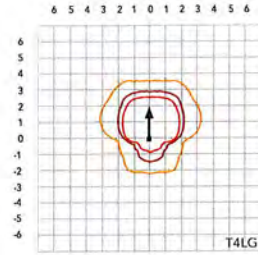
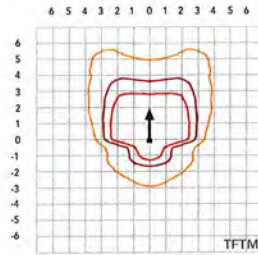
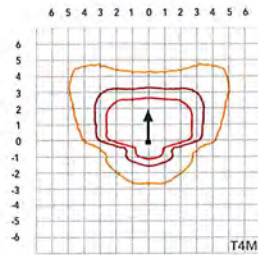
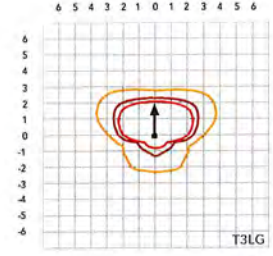
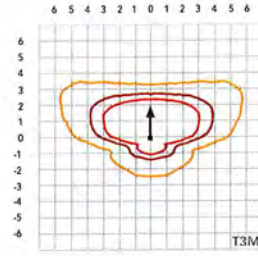
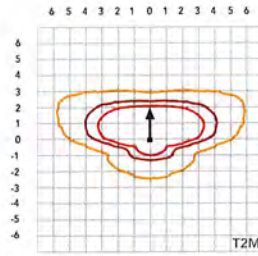
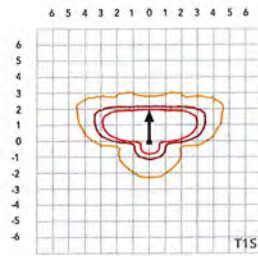
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [homepage](https://www.lithonia.com).

Isofootcandle plots for the DSX0 LED P7 40K 70CRI. Distances are in units of mounting height (20').

LEGEND

- 0.1 fc
- 0.5 fc
- 1.0 fc



Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
0	1.00
25,000	0.94
50,000	0.89
100,000	0.80

FAO Dimming Settings

FAO Position	% Wattage	% Lumen Output
8	100%	100%
7	93%	95%
6	80%	85%
5	66%	73%
4	54%	61%
3	41%	49%
2	29%	36%
1	15%	20%

*Note: Calculated values are based on original performance package data. When calculating new values for given FAO position, use published values for each package based on input watts and lumens by optic type.

Electrical Load

					Current (A)					
	Performance Package	LED Count	Drive Current (mA)	Wattage	120V	208V	240V	277V	347V	480V
Forward Optics (Non-Rotated)	P1	20	530	34	0.28	0.16	0.14	0.12	0.10	0.07
	P2	20	700	45	0.38	0.22	0.19	0.16	0.13	0.09
	P3	20	1050	69	0.57	0.33	0.29	0.25	0.20	0.14
	P4	20	1400	94	0.78	0.45	0.39	0.34	0.27	0.19
	P5	40	700	89	0.75	0.43	0.38	0.33	0.26	0.19
	P6	40	1050	136	1.14	0.66	0.57	0.49	0.39	0.29
	P7	40	1300	170	1.42	0.82	0.71	0.62	0.49	0.36
Rotated Optics (Requires L90 or R90)	P10	30	530	51	0.42	0.24	0.21	0.18	0.15	0.11
	P11	30	700	67	0.57	0.33	0.28	0.25	0.20	0.14
	P12	30	1050	103	0.86	0.50	0.43	0.37	0.30	0.22
	P13	30	1300	129	1.07	0.62	0.54	0.46	0.37	0.27

LED Color Temperature / Color Rendering Multipliers

	70 CRI		80 CRI		90 CRI	
	Lumen Multiplier	Availability	Lumen Multiplier	Availability	Lumen Multiplier	Availability
5000K	102%	Standard	92%	Extended lead-time	71%	(see note)
4000K	100%	Standard	92%	Extended lead-time	67%	(see note)
3500K	100%	(see note)	90%	Extended lead-time	63%	(see note)
3000K	96%	Standard	87%	Extended lead-time	61%	(see note)
2700K	94%	(see note)	85%	Extended lead-time	57%	(see note)

Note: Some LED types are available as per special request. Contact Technical Support for more information.

Motion Sensor Default Settings

Option	Unoccupied Dimmed Level	High Level (when occupied)	Photocell Operation	Dwell Time	Ramp-up Time	Dimming Fade Rate
PIR	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min
NLTAIR2 PIRHN	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min

Controls Options

Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads.
DS (not available on DSX0)	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PERS or PER7	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire. Cannot be used with other controls options that need the 0-10V leads.
PIR	Motion sensor with integral photocell. Sensor suitable for 8' to 40' mounting height.	Luminaires dim when no occupancy is detected.	Acuity Controls rSBG	Cannot be used with other controls options that need the 0-10V leads.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclipse.	nLight Air rSBG	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app. Cannot be used with other controls options that need the 0-10V leads.
BL30 or BL50	Integrated bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output	BLC device provides input to 0-10V dimming leads on all drivers providing either 100% or dimmed (30% or 50%) control by a secondary circuit	BLC UVOLT1	BLC device is powered off the 0-10V dimming leads, thus can be used with any input voltage from 120 to 480V



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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79. Contact factory for performance data on any configurations not shown here.

Forward Optics

LED Count	Drive Current (mA)	Performance Package	System Watts	Distribution Type	30K					40K					50K				
					(3000K, 70 CRI)					(4000K, 70 CRI)					(5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
20	530	P1	33W	T1S	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157
				T2M	4,545	1	0	2	137	4,736	1	0	2	143	4,829	1	0	2	145
				T3M	4,597	1	0	2	138	4,791	1	0	2	144	4,885	1	0	2	147
				T3LG	4,107	1	0	1	124	4,280	1	0	1	129	4,363	1	0	1	131
				T4M	4,666	1	0	2	141	4,863	1	0	2	146	4,957	1	0	2	149
				T4LG	4,244	1	0	1	128	4,423	1	0	1	133	4,509	1	0	1	136
				TFTM	4,698	1	0	2	141	4,896	1	0	2	147	4,992	1	0	2	150
				T5M	4,801	3	0	1	145	5,003	3	0	1	151	5,101	3	0	1	154
				TSW	4,878	3	0	1	147	5,084	3	0	2	153	5,183	3	0	2	156
				TSLG	4,814	2	0	1	145	5,018	2	0	1	151	5,115	2	0	1	154
				BLC3	3,344	0	0	1	101	3,485	0	0	1	105	3,553	0	0	1	107
				BLC4	3,454	0	0	2	104	3,599	0	0	2	108	3,670	0	0	2	111
				RCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108
				LCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108
				AFR	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157
20	700	P2	45W	T1S	6,328	1	0	1	140	6,595	1	0	1	146	6,724	1	0	1	149
				T2M	5,862	1	0	2	130	6,109	1	0	2	135	6,228	1	0	2	138
				T3M	5,930	1	0	3	131	6,180	1	0	3	137	6,301	1	0	3	140
				T3LG	5,297	1	0	1	117	5,521	1	0	1	122	5,628	1	0	1	125
				T4M	6,018	1	0	3	133	6,272	1	0	3	139	6,395	1	0	3	142
				T4LG	5,474	1	0	1	121	5,705	1	0	1	126	5,816	1	0	1	129
				TFTM	6,060	1	0	3	134	6,316	1	0	3	140	6,439	1	0	3	143
				T5M	6,192	3	0	1	137	6,453	3	0	2	143	6,579	3	0	2	146
				TSW	6,293	3	0	2	139	6,558	3	0	2	145	6,686	3	0	2	148
				TSLG	6,210	2	0	1	138	6,472	3	0	1	143	6,598	3	0	1	146
				BLC3	4,313	0	0	2	96	4,495	0	0	2	100	4,583	0	0	2	102
				BLC4	4,455	0	0	2	99	4,643	0	0	2	103	4,733	0	0	2	105
				RCCO	4,352	0	0	2	96	4,536	0	0	2	100	4,624	0	0	2	102
				LCCO	4,352	0	0	2	96	4,536	0	0	2	100	4,624	0	0	2	102
				AFR	6,328	1	0	1	140	6,595	1	0	1	146	6,724	1	0	1	149
				T1S	9,006	1	0	2	131	9,386	1	0	2	136	9,569	1	0	2	139
20	1050	P3	69W	T2M	8,343	2	0	3	121	8,694	2	0	3	126	8,864	2	0	3	129
				T3M	8,439	2	0	3	122	8,795	2	0	3	128	8,967	2	0	3	130
				T3LG	7,539	1	0	2	109	7,857	1	0	2	114	8,010	1	0	2	116
				T4M	8,565	2	0	3	124	8,926	2	0	3	129	9,100	2	0	3	132
				T4LG	7,790	1	0	2	113	8,119	1	0	2	118	8,277	1	0	2	120
				TFTM	8,624	1	0	3	125	8,988	1	0	3	130	9,163	2	0	3	133
				T5M	8,812	3	0	2	128	9,184	4	0	2	133	9,363	4	0	2	136
				TSW	8,955	4	0	2	130	9,333	4	0	2	135	9,515	4	0	2	138
				TSLG	8,838	3	0	1	128	9,211	3	0	1	134	9,390	3	0	1	136
				BLC3	6,139	0	0	2	89	6,398	0	0	2	93	6,522	0	0	2	95
				BLC4	6,340	0	0	3	92	6,607	0	0	3	96	6,736	0	0	3	98
				RCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95
				LCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95
				AFR	9,006	1	0	2	131	9,386	1	0	2	136	9,569	1	0	2	139
				T1S	11,396	1	0	2	122	11,877	1	0	2	128	12,109	2	0	2	130
				T2M	10,557	2	0	3	113	11,003	2	0	3	118	11,217	2	0	3	121
20	1400	P4	93W	T3M	10,680	2	0	3	115	11,130	2	0	3	120	11,347	2	0	3	122
				T3LG	9,540	1	0	2	103	9,942	1	0	2	107	10,136	1	0	2	109
				T4M	10,839	2	0	3	117	11,296	2	0	3	121	11,516	2	0	4	124
				T4LG	9,858	1	0	2	106	10,274	1	0	2	110	10,474	1	0	2	113
				TFTM	10,914	2	0	3	117	11,374	2	0	3	122	11,596	2	0	3	125
				T5M	11,152	4	0	2	120	11,622	4	0	2	125	11,849	4	0	2	127
				TSW	11,332	4	0	3	122	11,811	4	0	3	127	12,041	4	0	3	129
				TSLG	11,184	3	0	1	120	11,656	3	0	2	125	11,883	3	0	2	128
				BLC3	7,768	0	0	2	83	8,096	0	0	2	87	8,254	0	0	2	89
				BLC4	8,023	0	0	3	86	8,362	0	0	3	90	8,524	0	0	3	92
				RCCO	7,838	1	0	2	84	8,169	1	0	2	88	8,328	1	0	2	90
				LCCO	7,838	1	0	2	84	8,169	1	0	2	88	8,328	1	0	2	90
				AFR	11,396	1	0	2	122	11,877	1	0	2	128	12,109	2	0	2	130

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79. Contact factory for performance data on any configurations not shown here.

Forward Optics

LED Count	Drive Current (mA)	Performance Package	System Watts	Distribution Type	30K					40K					50K				
					(3000K, 70 CRI)					(4000K, 70 CRI)					(5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
40	700	P5	90W	T1S	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146
				T2M	11,468	2	0	3	127	11,952	2	0	3	133	12,185	2	0	3	135
				T3M	11,601	2	0	3	129	12,091	2	0	3	134	12,326	2	0	4	137
				T3LG	10,363	2	0	2	115	10,800	2	0	2	120	11,011	2	0	2	122
				T4M	11,774	2	0	4	131	12,271	2	0	4	136	12,510	2	0	4	139
				T4LG	10,709	1	0	2	119	11,160	2	0	2	124	11,378	2	0	2	126
				TFTM	11,856	2	0	3	132	12,356	2	0	4	137	12,596	2	0	4	140
				TSM	12,114	4	0	2	134	12,625	4	0	2	140	12,871	4	0	2	143
				TSW	12,310	4	0	3	137	12,830	4	0	3	142	13,080	4	0	3	145
				TSLG	12,149	3	0	2	135	12,662	3	0	2	141	12,908	3	0	2	143
				BLC3	8,438	0	0	2	94	8,794	0	0	2	98	8,966	0	0	2	99
				BLC4	8,715	0	0	3	97	9,083	0	0	3	101	9,260	0	0	3	103
				RCCO	8,515	1	0	2	94	8,874	1	0	2	98	9,047	1	0	2	100
				LCCO	8,515	1	0	2	94	8,874	1	0	2	98	9,047	1	0	2	100
				AFR	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146
40	1050	P6	137W	T1S	17,545	2	0	3	128	18,285	2	0	3	133	18,642	2	0	3	136
				T2M	16,253	3	0	4	119	16,939	3	0	4	124	17,269	3	0	4	126
				T3M	16,442	2	0	4	120	17,135	3	0	4	125	17,469	3	0	4	128
				T3LG	14,687	2	0	2	107	15,306	2	0	2	112	15,605	2	0	2	114
				T4M	16,687	2	0	4	122	17,391	3	0	5	127	17,730	3	0	5	129
				T4LG	15,177	2	0	2	111	15,817	2	0	2	115	16,125	2	0	2	118
				TFTM	16,802	2	0	4	123	17,511	2	0	4	128	17,852	2	0	5	130
				TSM	17,168	4	0	2	125	17,893	5	0	3	131	18,241	5	0	3	133
				TSW	17,447	5	0	3	127	18,183	5	0	3	133	18,537	5	0	3	135
				TSLG	17,218	4	0	2	126	17,944	4	0	2	131	18,294	4	0	2	134
				BLC3	11,959	0	0	3	87	12,464	0	0	3	91	12,707	0	0	3	93
				BLC4	12,352	0	0	4	90	12,873	0	0	4	94	13,124	0	0	4	96
				RCCO	12,067	1	0	3	88	12,576	1	0	3	92	12,821	1	0	3	94
				LCCO	12,067	1	0	3	88	12,576	1	0	3	92	12,821	1	0	3	94
				AFR	17,545	2	0	3	128	18,285	2	0	3	133	18,642	2	0	3	136
40	1300	P7	171W	T1S	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129
				T2M	19,273	3	0	4	113	20,086	3	0	4	118	20,478	3	0	4	120
				T3M	19,497	3	0	5	114	20,319	3	0	5	119	20,715	3	0	5	121
				T3LG	17,416	2	0	2	102	18,151	2	0	2	106	18,504	2	0	2	108
				T4M	19,787	3	0	5	116	20,622	3	0	5	121	21,024	3	0	5	123
				T4LG	17,997	2	0	2	105	18,756	2	0	2	110	19,121	2	0	2	112
				TFTM	19,924	3	0	5	117	20,765	3	0	5	122	21,170	3	0	5	124
				TSM	20,359	5	0	3	119	21,217	5	0	3	124	21,631	5	0	3	127
				TSW	20,689	5	0	3	121	21,561	5	0	3	126	21,982	5	0	3	129
				TSLG	20,418	4	0	2	120	21,279	4	0	2	125	21,694	4	0	2	127
				BLC3	14,182	0	0	3	83	14,780	0	0	3	87	15,068	0	0	3	88
				BLC4	14,647	0	0	4	86	15,265	0	0	4	89	15,562	0	0	4	91
				RCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89
				LCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89
				AFR	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129

Performance Data

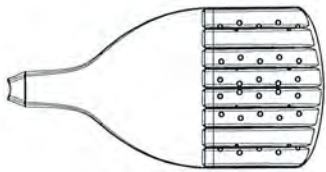
Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79. Contact factory for performance data on any configurations not shown here.

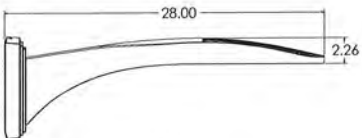
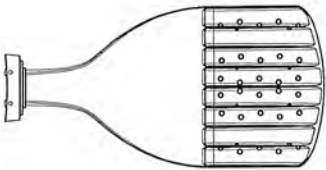
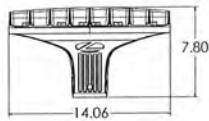
Rotated Optics

LED Count	Drive Current (mA)	Performance Package	System Watts	Distribution Type	30K					40K					50K				
					(3000K, 70 CRI)					(4000K, 70 CRI)					(5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
30	530	P10	51W	T1S	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154
				T2M	6,854	3	0	3	135	7,144	3	0	3	140	7,283	3	0	3	143
				T3M	6,933	3	0	3	136	7,225	3	0	3	142	7,366	3	0	3	145
				T3LG	6,194	2	0	2	122	6,455	2	0	2	127	6,581	2	0	2	129
				T4M	7,036	3	0	3	138	7,333	3	0	3	144	7,476	3	0	3	147
				T4LG	6,399	2	0	2	126	6,669	2	0	2	131	6,799	2	0	2	134
				TFTM	7,086	3	0	3	139	7,385	3	0	3	145	7,529	3	0	3	148
				TSM	7,239	3	0	2	142	7,545	3	0	2	148	7,692	3	0	2	151
				TSW	7,357	3	0	2	145	7,667	3	0	2	151	7,816	4	0	2	154
				TSLG	7,260	3	0	1	143	7,567	3	0	1	149	7,714	3	0	1	152
				BLC3	5,043	3	0	3	99	5,256	3	0	3	103	5,358	3	0	3	105
				BLC4	5,208	3	0	3	102	5,428	3	0	3	107	5,534	3	0	3	109
				RCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106
				LCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106
				AFR	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154
30	700	P11	68W	T1S	9,358	3	0	3	138	9,753	3	0	3	143	9,943	3	0	3	146
				T2M	8,669	3	0	3	127	9,034	3	0	3	133	9,211	3	0	3	135
				T3M	8,768	3	0	3	129	9,138	3	0	3	134	9,316	3	0	3	137
				T3LG	7,833	3	0	3	115	8,164	3	0	3	120	8,323	3	0	3	122
				T4M	8,899	3	0	3	131	9,274	3	0	3	136	9,455	3	0	3	139
				T4LG	8,093	3	0	3	119	8,435	3	0	3	124	8,599	3	0	3	126
				TFTM	8,962	3	0	3	132	9,340	3	0	3	137	9,522	3	0	3	140
				TSM	9,156	4	0	2	135	9,542	4	0	2	140	9,728	4	0	2	143
				TSW	9,304	4	0	2	137	9,696	4	0	2	143	9,885	4	0	2	145
				TSLG	9,182	3	0	1	135	9,569	3	0	1	141	9,756	3	0	1	143
				BLC3	6,378	3	0	3	94	6,647	3	0	3	98	6,777	3	0	3	100
				BLC4	6,587	3	0	3	97	6,865	3	0	3	101	6,999	3	0	3	103
				RCCO	6,436	0	0	2	95	6,707	0	0	2	99	6,838	0	0	2	101
				LCCO	6,436	0	0	2	95	6,707	0	0	2	99	6,838	0	0	2	101
				AFR	9,358	3	0	3	138	9,753	3	0	3	143	9,943	3	0	3	146
30	1050	P12	103W	T1S	13,247	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	136
				T2M	12,271	4	0	4	119	12,789	4	0	4	124	13,038	4	0	4	126
				T3M	12,412	4	0	4	120	12,935	4	0	4	125	13,187	4	0	4	128
				T3LG	11,089	3	0	3	107	11,556	3	0	3	112	11,782	3	0	3	114
				T4M	12,597	4	0	4	122	13,128	4	0	4	127	13,384	4	0	4	129
				T4LG	11,457	3	0	3	111	11,940	3	0	3	116	12,173	3	0	3	118
				TFTM	12,686	4	0	4	123	13,221	4	0	4	128	13,479	4	0	4	130
				TSM	12,960	4	0	2	125	13,507	4	0	2	131	13,770	4	0	2	133
				TSW	13,170	4	0	3	127	13,726	4	0	3	133	13,994	4	0	3	135
				TSLG	12,998	3	0	2	126	13,546	3	0	2	131	13,810	3	0	2	134
				BLC3	9,029	3	0	3	87	9,409	3	0	3	91	9,593	3	0	3	93
				BLC4	9,324	4	0	4	90	9,718	4	0	4	94	9,907	4	0	4	96
				RCCO	9,110	1	0	2	88	9,495	1	0	2	92	9,680	1	0	2	94
				LCCO	9,110	1	0	2	88	9,494	1	0	2	92	9,680	1	0	2	94
				AFR	13,247	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	136
30	1300	P13	129W	T1S	15,704	3	0	3	122	16,366	3	0	3	127	16,685	4	0	4	130
				T2M	14,547	4	0	4	113	15,161	4	0	4	118	15,457	4	0	4	120
				T3M	14,714	4	0	4	114	15,335	4	0	4	119	15,634	4	0	4	121
				T3LG	13,145	3	0	3	102	13,700	3	0	3	106	13,967	3	0	3	108
				T4M	14,933	4	0	4	116	15,563	4	0	4	121	15,867	4	0	4	123
				T4LG	13,582	3	0	3	105	14,155	3	0	3	110	14,431	3	0	3	112
				TFTM	15,039	4	0	4	117	15,673	4	0	4	122	15,979	4	0	4	124
				TSM	15,364	4	0	2	119	16,013	4	0	2	124	16,325	4	0	2	127
				TSW	15,613	5	0	3	121	16,272	5	0	3	126	16,589	5	0	3	129
				TSLG	15,409	3	0	2	120	16,059	3	0	2	125	16,372	4	0	2	127
				BLC3	10,703	4	0	4	83	11,155	4	0	4	87	11,372	4	0	4	88
				BLC4	11,054	4	0	4	86	11,520	4	0	4	89	11,745	4	0	4	91
				RCCO	10,800	1	0	2	84	11,256	1	0	2	87	11,475	1	0	3	89
				LCCO	10,800	1	0	2	84	11,255	1	0	2	87	11,475	1	0	3	89
				AFR	15,704	3	0	3	122	16,366	3	0	3	127	16,685	4	0	4	130

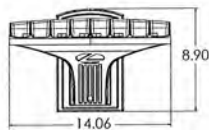
Dimensions



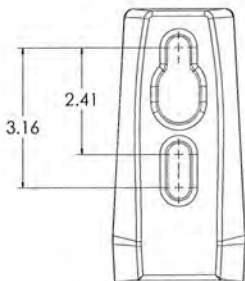
DSX0 with RPA, RPA5, SPA5, SPA8N



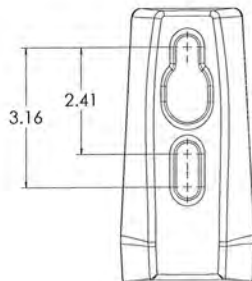
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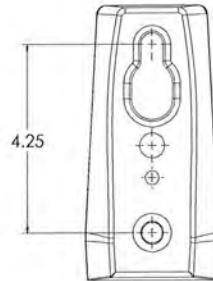
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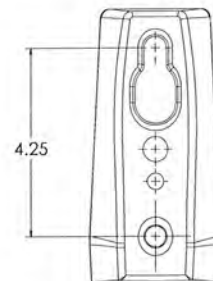
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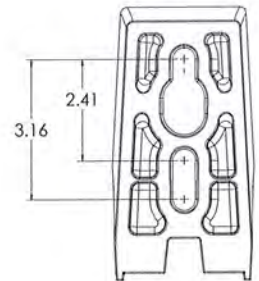
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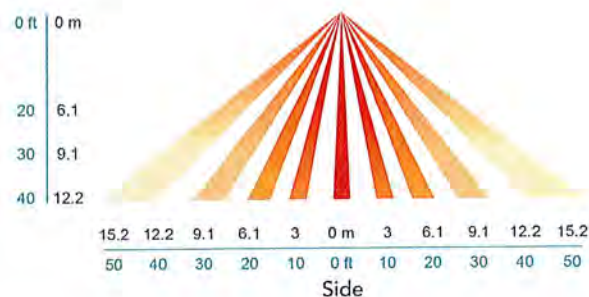
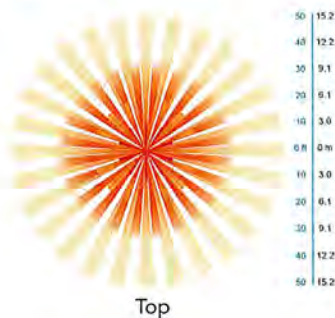
RPA5



BASE FIXTURE



nLight Sensor Coverage Pattern NLTAIR2 PIRHN



FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 0 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and pedestrian areas.

CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing driver compartment is completely sealed against moisture and environmental contaminants (IP66). Vibration rated per ANSI C136.31 for 1.5G. Low EPA (0.44 ft²) for optimized pole wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

COASTAL CONSTRUCTION (CCE)

Optional corrosion resistant construction is engineered with added corrosion protection in materials and/or pre-treatment of base material under super durable paint. Provides additional corrosion protection for applications near coastal areas. Finish is salt spray tested to over 5,000 hours per ASTM B117 with scribe rating of 10. Additional lead-times may apply.

OPTICS

Precision-molded proprietary silicone lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in 3000 K, 4000 K or 5000 K (70 CRI) configurations. 80CRI configurations are also available. The D-Series Size 0 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L80/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The DSX0 LED area luminaire has a number of control options. DSX Size 0, comes standard with 0-10V dimming driver. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. PIR integrated motion sensor with on-board photocell feature field-adjustable programming and are suitable for mounting heights up to 40 feet. Control option BL features a bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output.

nLIGHT AIR CONTROLS

The DSX0 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaires can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclipse. Additional information about nLight Air can be found [here](#).

INSTALLATION

Integral mounting arm allows for fast mounting using Lithonia standard #8 drilling and accommodates pole drilling's from 2.41 to 3.12" on center. The standard "SPA" option for square poles and the "RPA" option for round poles use the #8 drilling. For #5 pole drillings, use SPA5 or RPA5. Additional mountings are available including a wall bracket (WBA) and mast arm (MA) option that allows luminaire attachment to a 2 3/8" horizontal mast arm.

LISTINGS

UL listed to meet U.S. and Canadian standards. UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP66 rated. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

FEATURES & SPECIFICATIONS

INTENDED USE — These specifications are for USA standards only. Square Straight Steel is a general purpose light pole for up to 39-foot mounting heights. This pole provides a robust yet cost effective option for mounting area lights and floodlights.

CONSTRUCTION

Pole Shaft: The pole shaft is of uniform dimension and wall thickness and is made of a weldable-grade, hot-rolled, commercial-quality steel tubing with a minimum yield of 55 KSI (11-gauge, 0.120"), or 50 KSI (7-gauge, 0.179"). Shaft is one-piece with a full-length longitudinal high-frequency electric resistance weld. Uniformly square in cross-section with flat sides, small corner radii and excellent torsional qualities. Available shaft widths are 4", 5" and 6".

Pole Top: Options include 4" tenon top, drilled for side mount fixture, tenon with drilling (includes extra handhole) and open top. Side drilled and open top poles include a removable top cap.

Handhole: A reinforced handhole with grounding provision is provided at 18" from the base on side A. Positioning the handhole lower may not be possible and requires engineering review; consult Tech Support-Outdoor for further information. Every handhole includes a cover and cover attachment hardware. The handhole has a nominal dimension of 2.5" x 5".

Base Cover: A durable ABS plastic two-piece full base cover, finished to match the pole, is provided with each pole assembly. Additional base cover options are available upon request.

Anchor Base/Bolts: Anchor base is fabricated from steel that meets ASTM A36 standards and can be altered to match existing foundations; consult factory for modifications. Anchor bolts are manufactured to ASTM F1554 Standards grade 55, (55 KSI minimum yield strength and tensile strength of 75-95 KSI). Top threaded portion (nominal 12") is hot-dipped galvanized per ASTM A-153.

HARDWARE — All structural fasteners are high-strength galvanized carbon steel. All non-structural fasteners are galvanized or zinc-plated carbon steel or stainless steel.

FINISH — Extra durable painted finish is coated with TGIC (Triglycidyl Isocyanurate) Polyester powder that meets 5A and 5B classifications of ASTM D3359. Powder-coat finishes include Dark Bronze, White, Black, and Natural Aluminum colors. Architectural Colors and Special Finishes are available by quote and include, but are not limited to Paint over Hot-dipped Galvanized, RAL Colors, Custom Colors and Extended Warranty Finishes.

BUY AMERICAN ACT — Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to www.acuitybrands.com/buy-american for additional information.

INSTALLATION — Do not erect poles without having fixtures installed. Factory-supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use Lithonia Lighting factory templates. If poles are stored outside, all protective wrapping must be removed immediately upon delivery to prevent finish damage. Lithonia Lighting is not responsible for the foundation design.

WARRANTY — 1-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

NOTE: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.

Catalog
Number

Notes

Type

Anchor Base Poles

SSS

SQUARE STRAIGHT STEEL

BAA



ORDERING INFORMATION

Lead times will vary depending on options selected. Consult with your sales representative.

Example: SSS 20 5C DM19 DDBXD

SSS						
Series	Nominal fixture mounting height	Nominal shaft base size/wall thickness ²	Mounting ¹		Options	Finish ¹⁴
SSS ¹	10'-39" (for 1/2 ft increments, add -6 to the pole height. Ex: 20-6 equals 20ft 6in.) See technical information table for complete ordering information.)	4C 4" 11g (0.120") 4G 4" 7g (0.179") 5C 5" 11g (0.120") 5G 5" 7g (0.179") 6G 6" 7g (0.179") See technical information table for complete ordering information.)	<u>Tenon mounting</u> PT Open top (includes top cap) T20 2-3/8" O.D. (2" NPS) T25 2-7/8" O.D. (2-1/2" NPS) T30 3-1/2" O.D. (3" NPS) T35 4" O.D. (3-1/2" NPS) <u>KAC/KAD/KSE/KSF/KVR/KVF Drill mounting⁴</u> DM19 1 at 90° DM28 2 at 180° DM28 PL 2 at 180° with one side plugged DM29 2 at 90° DM39 3 at 90° DM49 4 at 90° <u>CSX/DSX/RSX/AERIS™/OMERO™/HLA/KAX Drill mounting⁴</u> DM19AS 1 at 90° DM28AS 2 at 180° DM29AS 2 at 90° DM39AS 3 at 90° DM49AS 4 at 90° <u>RAD drill mounting^{4,5}</u> DM19RAD 1 at 90° DM28RAD 2 at 180° DM29RAD 2 at 90° DM39RAD 3 at 90° DM49RAD 4 at 90° <u>ESX Drill mounting⁴</u> DM19ESX 1 at 90° DM28ESX 2 at 180° DM29ESX 2 at 90° DM39ESX 3 at 90° DM49ESX 4 at 90°	<u>AERIS™ Suspend drill mounting^{4,9}</u> DM19AST 1 at 90° DM28AST 2 at 180° DM29AST 2 at 90° DM39AST 3 at 90° DM49AST 4 at 90° <u>OMERO™ Suspend drill mounting^{4,6}</u> DM19MRT 1 at 90° DM28MRT 2 at 180° DM29MRT 2 at 90° DM39MRT 3 at 90° DM49MRT 4 at 90°	<u>Shipped installed</u> VD Vibration damper ⁷ HAxy Horizontal arm bracket (1 fixture) ^{8,9} FDLxy Festoon outlet less electrical ^{8,10} CPL12/xy 1/2" coupling ⁸ CPL34/xy 3/4" coupling ⁸ CPL1/xy 1" coupling ⁸ NPL12/xy 1/2" threaded nipple ⁸ NPL34/xy 3/4" threaded nipple ⁸ NPL1/xy 1" threaded nipple ⁸ EHHxy Extra handhole ^{8,11} STLHHC Steel handhole cover (standard is plastic, finish is smooth) FBCSTL2PC 2 Piece steel base cover (standard is plastic) IC Interior coating ¹² L/AB Less anchor bolts (Include when anchor bolts are not needed) TP Tamper resistant handhole cover fasteners NEC NEC 410.30 compliant gasketed handhole (Not UL Labeled) UL UL listed with label (Includes NEC compliant cover) BAA Buy America(n) Act Compliant ¹³	<u>Super durable paint colors</u> DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DSSXD Sandstone DGCXD Charcoal gray DTGXD Tennis green DBRXD Bright red DSBXD Steel blue DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white <u>Other finishes</u> GALV Galvanized finish <u>Architectural colors and special finishes</u> Paint over Galvanized, RAL Colors, Custom Colors and Extended Warranty Finishes available.

NOTES:

- Handhole covers (HHC), full base covers (FBC) and top caps (TC) shipped separately. No need to call out in nomenclature. For additional parts please order as replacements.
- Wall thickness will be signified with a "C" (11 Gauge) or a "G" (7-Gauge) in nomenclature. "C" - 0.120" | "G" - 0.179".
- PT open top poles include top cap. When ordering tenon mounting and drill mounting for the same pole, follow this example: DM28/T20. The combination includes a required extra handhole.
- Refer to the fixture spec sheet for the correct drilling template pattern and orientation compatibility.
- All RAD drilling's require a minimum top O.D. of 4".
- Insert "1" or "2" to designate fixture size; e.g. DM19AST2.
- On 4" and 5" poles, VD cannot be installed if provisions (EHH, FDL, NPL, CPL) are located higher than 2/3 of the pole's total height.
Example: Pole height is 25ft, A provision cannot be placed above 16ft.
- Specify location and orientation when ordering option.
For "x": Specify the height above the base of pole in feet or feet and inches; separate feet and inches with a "-".
Example: 5ft = 5 and 20ft 3in = 20-3
For "y": Specify orientation from handhole (A,B,C,D) Refer to the Handhole Orientation diagram below.
Example: 1/2" coupling at 5' 8", orientation C = CPL12/5-8C
- Horizontal arm is 18" x 2-3/8" O.D. tenon standard, with radius curve providing 12" rise and 2-3/8" O.D. If ordering two horizontal arm at the same height, specify with HAxy. Example: HA20BD.
- FDL does not come with GFI outlet or handhole cover. These must be supplied by contractor or electrician.
- Combination of tenon-top and drill mount includes extra handhole. EHH includes cover.
- Provides enhanced corrosion resistance.
- Use when mill certifications are required.
- Finish must be specified. Additional colors available; see Architectural Colors brochure linked [here](#) (Form No. 794.3). Lead times may be extended up to 2 weeks due to paint procurement.

Accessories: Order as separate catalog number.

PL DT20 Plugs for ESX drillings
PL DT8 Plugs for DMxxAS drillings

TECHNICAL INFORMATION — EPA (ft²) with 1.3 gust

Catalog Number	Nominal Shaft Length (ft.)*	Pole Shaft Size (Base in. x Top in. x ft.)	Wall thick (in)	Gauge	EPA (ft²) with 1.3 gust						Bolt circle (in)	Bolt size (in. x in. x in.)	Approximate ship weight (lbs.)
					80 MPH	Max. weight	90 MPH	Max. weight	100 MPH	Max. weight			
SSS 10 4C	10	4.0 x 10.0	0.120"	11	30.6	765	23.8	595	18.9	473	8--9	3/4 x 18 x 3	75
SSS 12 4C	12	4.0 x 12.0	0.120"	11	24.4	610	18.8	470	14.8	370	8--9	3/4 x 18 x 3	90
SSS 14 4C	14	4.0 x 14.0	0.120"	11	19.9	498	15.1	378	11.7	293	8--9	3/4 x 18 x 3	100
SSS 16 4C	16	4.0 x 16.0	0.120"	11	15.9	398	11.8	295	8.9	223	8--9	3/4 x 18 x 3	115
SSS 18 4C	18	4.0 x 18.0	0.120"	11	12.6	315	9.2	230	6.7	168	8--9	3/4 x 18 x 3	125
SSS 20 4C	20	4.0 x 20.0	0.120"	11	9.6	240	6.7	167	4.5	150	8--9	3/4 x 18 x 3	140
SSS 20 4G	20	4.0 x 20.0	0.179"	7	14	350	11	275	8	200	8--9	3/4 x 30 x 3	198
SSS 20 5C	20	5.0 x 20.0	0.120"	11	17.7	443	12.7	343	9.4	235	10--12	1 x 36 x 4	185
SSS 20 5G	20	5.0 x 20.0	0.179"	7	28.1	703	21.4	535	16.2	405	10--12	1 x 36 x 4	265
SSS 25 4C	25	4.0 x 25.0	0.120"	11	4.8	150	2.6	100	1	50	8--9	3/4 x 18 x 3	170
SSS 25 4G	25	4.0 x 25.0	0.179"	7	10.8	270	7.7	188	5.4	135	8--9	3/4 x 30 x 3	245
SSS 25 5C	25	5.0 x 25.0	0.120"	11	9.8	245	6.3	157	3.7	150	10--12	1 x 36 x 4	225
SSS 25 5G	25	5.0 x 25.0	0.179"	7	18.5	463	13.3	333	9.5	238	10--12	1 x 36 x 4	360
SSS 30 4G	30	4.0 x 30.0	0.179"	7	6.7	168	4.4	110	2.6	65	8--9	3/4 x 30 x 3	295
SSS 30 5C	30	5.0 x 30.0	0.120"	11	4.7	150	2	50	--	--	10--12	1 x 36 x 4	265
SSS 30 5G	30	5.0 x 30.0	0.179"	7	10.7	267	6.7	167	3.9	100	10--12	1 x 36 x 4	380
SSS 30 6G	30	6.0 x 30.0	0.179"	7	19	475	13.2	330	9	225	11--13	1 x 36 x 4	520
SSS 35 5G	35	5.0 x 35.0	0.179"	7	5.9	150	2.5	100	--	--	10--12	1 x 36 x 4	440
SSS 35 6G	35	6.0 x 35.0	0.179"	7	12.4	310	7.6	190	4.2	105	11--13	1 x 36 x 4	540
SSS 39 6G	39	6.0 x 39.0	0.179"	7	7.2	180	3	75	--	--	11--13	1 x 36 x 4	605

NOTE: * EPA values are based ASCE 7-93 wind map. For 1/2 ft increments, add -6 to the pole height. Ex: 20-6 equals 20ft 6in.

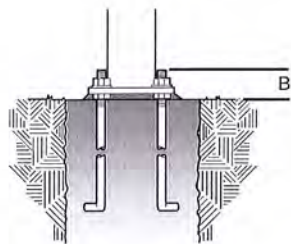
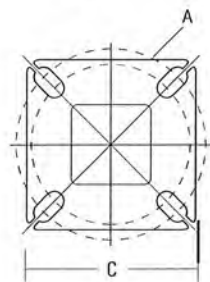
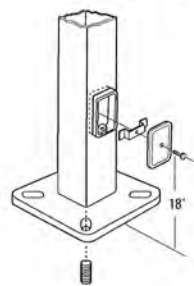
TECHNICAL INFORMATION — EPA (ft²) WITH 3-SECOND GUST PER AASHTO 2013

Series	Mounting Height (ft)*	Shaft Base Size	90 MPH	Max. weight	100 MPH	Max. weight	110 MPH	Max. weight	120 MPH	Max. weight	130 MPH	Max. weight	140 MPH	Max. weight	150 MPH	Max. weight	Approximate ship weight (lbs.)
SSS	10	4C	20	500	16	400	13	325	10.5	263	8.5	213	7	175	6	150	75
SSS	12	4C	16	400	13	325	10	250	8	200	6.5	163	5	125	4	100	90
SSS	14	4C	13.5	338	10	250	7.5	188	6	150	4.5	113	3.5	88	2.5	63	100
SSS	16	4C	10.5	263	7.5	188	5.5	138	4	100	3	75	1.5	38	1	25	115
SSS	18	4C	8	200	5.5	138	4	100	2.5	63	1.5	38	0.5	13	-	-	125
SSS	18	4G	13	325	9.5	238	7	175	5	125	3.5	88	2.5	63	1.5	38	185
SSS	18	5C	13	325	9.5	238	6.5	163	4.5	113	3	75	1.5	38	.5	13	170
SSS	20	4C	6	150	4	100	2.5	63	1	25	-	-	-	-	-	-	140
SSS	20	4G	10.5	263	7.5	188	5.5	138	3.5	88	2	50	1	25	-	-	205
SSS	20	5C	10	250	7	175	4.5	113	2.5	63	1	25	-	-	-	-	185
SSS	20	5G	20	500	15	375	11.5	288	8.5	213	6	150	4.5	113	3	75	265
SSS	25	4C	2	50	0.5	13	-	-	-	-	-	-	-	-	-	-	170
SSS	25	4G	5.5	138	3	75	1.5	38	-	-	-	-	-	-	-	-	245
SSS	25	5C	4.5	113	2	50	-	-	-	-	-	-	-	-	-	-	225
SSS	25	5G	12	300	8.5	213	5.5	138	3	75	1.5	38	-	-	-	-	360
SSS	25	6G	19	475	13.5	338	9	225	5.5	138	3	75	1	25	-	-	445
SSS	30	4G	1.5	38	-	-	-	-	-	-	-	-	-	-	-	-	291
SSS	30	5C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	265
SSS	30	5G	6.5	163	3.5	88	1	25	-	-	-	-	-	-	-	-	380
SSS	30	6G	11	275	6	150	2.5	63	-	-	-	-	-	-	-	-	520
SSS	35	5G	2	50	-	-	-	-	-	-	-	-	-	-	-	-	440
SSS	35	6G	4	100	-	-	-	-	-	-	-	-	-	-	-	-	540
SSS	39	6G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	605

NOTE: AASHTO 2013 criteria is the most conservative existing EPA calculation. For poles not showing EPA values under AASHTO 2013, EPA values may exist under commercial criteria (see table above).

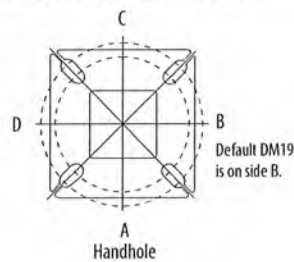
*For 1/2 ft increments, add -6 to the pole height. Ex: 20-6 equals 20ft 6in.

BASE DETAIL



POLE DATA							
Shaft base size	Bolt circle A	Bolt projection B	Base square C	Base plate thickness	Template description	Anchor bolt description	Anchor bolt and template description
4"C	8" – 9"	3.25"- 3.75"	8"- 8.25"	0.75"	ABTEMPLATE PJ50004	AB18-0	ABSSS-4C
4"G	8" – 9"	3.38"- 3.75"	8"- 8.25"	0.875"	ABTEMPLATE PJ50004	AB30-0	ABSSS-4G
5"	10" – 12"	3.5" - 4"	11"	1"	ABTEMPLATE PJ50010	AB36-0	ABSSS-5
6"	11" – 13"	4"- 4.50"	12.5"	1"	ABTEMPLATE PJ50011	AB36-0	N/A

HANDHOLE ORIENTATION



IMPORTANT INSTALLATION NOTES:

- Do not erect poles without having fixtures installed.
- Factory-supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use Lithonia Lighting factory templates.
- If poles are stored outside, all protective wrapping must be removed immediately upon delivery to prevent finish damage.
- Lithonia Lighting is not responsible for the foundation design.
- Bolt circles have +/- 1/2" tolerance.

CAUTION: These specifications are intended for general purposes only. Lithonia Lighting reserves the right to change material or design, without prior notice, in a continuing effort to upgrade its products.

STORMWATER REPORT AND PLANS

RECORDED SITE PLAN – DEMPSEY DRIVE

PLAN BOOK 407 PAGE 18

SYMBOL	DESCRIPTION
□ SMF	STONE MONUMENT FOUND
□ CMF	GRANITE MONUMENT FOUND
○ IRP/ROD	IRON PIPE/ROD FOUND
○ IRP/ROD	CAAPPED IRON ROD FOUND (PLS #2190)
○ IRP/ROD	5/8" IRON ROD W/ CAP TO BE SET
○ IRP/ROD	UTILITY POLE
○ IRP/ROD	SIGN
○ IRP/ROD	HYDRANT
○ IRP/ROD	WATER SHUTOFF
○ IRP/ROD	SEWER MANHOLE
○ IRP/ROD	STREAM
○ IRP/ROD	TREE LINE
○ IRP/ROD	PROPERTY LINE
○ IRP/ROD	ABUTTER PROPERTY LINE
○ IRP/ROD	EDGE OF PAVEMENT
○ IRP/ROD	EXISTING CONTOUR
○ IRP/ROD	ABOVE GROUND
○ IRP/ROD	NOW OR FORMERLY
○ IRP/ROD	SILT FENCE

CURVE DATA
CURVE #1
R=200.00'
L=47.16'
T=23.69'
C=47.05'
PC=0+26.31
PT=0+73.47
CURVE #2
R=200.00'
L=83.01'
T=42.11'
C=82.41'
PC=0+99.56
PT=1+82.56

STORMDRAIN/SEWER PIPES
P1 - 12" S.D., L=61', S=0.005'/FT.
P2 - 12" S.D., L=60', S=0.005'/FT., INV. OUT 142.30
P3 - 12" S.D., L=85', S=0.004'/FT.
P4 - 12" S.D., L=62', S=0.004'/FT.
SS1 - 8" PVC, L=296', S=0.005'/FT.
SS2 - 8" PVC, L=196', S=0.005'/FT.
SS3 - 8" PVC, L=196', S=0.005'/FT.
GUSF A & B - 6" PVC, L=464'
GUSF C - 6" PVC, L=91'

STORMDRAIN/SEWER STRUCTURES
CB#1 - RIM 146.40
12" INV. 143.00
CB#2 - RIM 147.50
15" INV. 144.94
DMH#1 - RIM 146.90
12" INV. IN 142.70
12" INV. OUT 142.60
DMH#2 - RIM 147.90
15" INV. IN 144.60
15" INV. OUT 144.50
SMH#1 - RIM 147.40
8" INV. 142.00
SMH#2 - RIM 147.60
8" INV. IN 140.52
8" INV. OUT 140.42
SMH#3 - RIM 147.50
8" INV. IN 139.44
8" INV. OUT 139.34
SMH#4 - RIM 140.30
8" INV. IN TBD
EX. 8" INV. IN TBD
EX. 8" INV. OUT TBD

NOTES:

- OWNER: HEIRS OF CLARENCE BELANGER
C/O THOMAS BELANGER
81 SOUTH WATERSBORO ROAD
LYMAN, MAINE 04002
- APPLICANT: TOM GILLIS, LANDMATTERS, LLC
P.O. BOX 468
OLD ORCHARD BEACH, MAINE 04064
- SURVEYOR: ROBERT C. LIBBY JR., PLS #2190
BH2M
28 STATE STREET
GORHAM, MAINE
- WETLAND DELINEATION: ALEXANDER FINAMORE, CWS, LSE
440 SWAMP ROAD
DURHAM, MAINE 04222
- ENGINEER: STEVEN BLAKE, BH2M
PE #11695
- DEED REFERENCE: BK. 3010, PG. 210 &
BK. 4303, PG. 149
- TAX MAP REFERENCE: MAP 74, LOT 11 & MAP 74, LOT 10-2
- ZONING: I2, INDUSTRIAL 2
- MINIMUM STANDARDS: FRONTAGE - 50'
SETBACKS - 30' FRONT, MARCEL AVENUE
40' FRONT, LANDRY STREET
25' SIDE AND REAR
(50' AT RESIDENTIAL DISTRICT)
- LOT AREA: 181,794 S.F. (4.173 ACRES)
- SEWER SERVICE: PUBLIC
- WATER SERVICE: PUBLIC
- ELECTRIC/TELEPHONE: UNDERGROUND
- BENCHMARK: BM A - 4" NAIL IN UTILITY POLE #J1
0.2' A.G. ON THE NORTH-EASTERLY
SIDE OF MARCEL AVE., ELEVATION
141.39 NAVD 88

- WETLAND IMPACTS: WETLAND IMPACT #1.....138 SF
WETLAND IMPACT #2.....4,416 SF
WETLAND IMPACT #3.....727 SF
WETLAND IMPACT #4.....2,999 SF
WETLAND IMPACT #5.....36 SF
TOTAL WETLAND IMPACTS.....8,316 SF
- PLAN REFERENCES: A. "PLAN OF RESUBDIVISION OF LOT-1
AIRPORT IND. PARK II LAND OF THE CITY
OF BIDDEFORD, ME ON LANDRY ST. IN
BIDDEFORD, ME" DATED AUG. 7, 1984, BY
THE CITY OF BIDDEFORD, ME. ENGINEERING
DEPT. RECORDED AT THE YORK REGISTRY
OF DEEDS BOOK 132 PAGE 23.
B. "PLAN SHOWING A PORTION OF MARCEL
AVENUE IN, BIDDEFORD, ME" DATED SEPT.
19, 1986, BY THE CITY OF BIDDEFORD, ME.
ENGINEERING DEPT. RECORDED AT THE
YORK REGISTRY OF DEEDS BOOK 160 PAGE
29.
C. "PLAN SHOWING LAND SURVEYED FOR THE
CITY OF BIDDEFORD KNOWN AS THE
BIDDEFORD MUNICIPAL AIRPORT" DATED
JUNE 8, 1983 BY THE CITY OF BIDDEFORD,
ME. FILE NO TR-8811-688"

- PARKING REQUIREMENTS:
BUILDING MATERIAL STORAGE:
1 SPACE/500 S.F. OF FLOOR AREA
34,500 S.F. BUILDING = 69 SPACES
500 S.F.
- ALL CURBING PLACED IN THE CITY RIGHT OF WAY
SHALL BE GRANITE.
- ALL AREAS THAT ARE DISTURBED AS A RESULT OF
CONSTRUCTION SHALL BE REVEGETATED PRIOR TO
COMPLETION OF THE PROJECT.
- ALL CATCH BASINS IN THE ENTRANCE ROAD AND
PARKING AREAS SHALL BE INSTALLED WITH OIL/
DEBRIS HODDS. SEE SHEET 4 FOR DETAILS.

I CERTIFY THAT THIS SURVEY CONFORMS
TO THE MAINE BOARD OF LICENSURE
FOR PROFESSIONAL LAND SURVEYORS
TECHNICAL STANDARDS OF PRACTICE FOR
A STANDARD BOUNDARY SURVEY WITH
THE FOLLOWING EXCEPTIONS:

- NO SURVEYORS REPORT



ROBERT C. LIBBY JR. PLS #2190

THIS PLAN REVIEWED AND APPROVED BY THE CITY
OF BIDDEFORD PLANNING BOARD.

11-6-19
DATE
Chair
Brian E. Barry
Steven Blake
Michael P. Conner
Nancy E. Hammond
REGISTER

NO.	DATE	REVISION	DESCRIPTION
1	4/10/19	Submitted Plan for City Review	
2	5/15/19	Submitted Plan for City Review	
3	7/16/19	Revised Per City Comments	
4	8/14/19	Revised Per Peer Review	
5	9/11/19	Revised Per City, Peer Review, & DEP Comments	
6	9/20/19	Revised Per DEP Comments	
7	10/31/19	Revised Per Final City Comments	



BH2M
Berry, Huff, MacDonald, Milligan Inc.
Engineers, Surveyors
28 State Street
Corham, Maine 04038
Tel: (207) 839-2771
Fax: (207) 839-8220

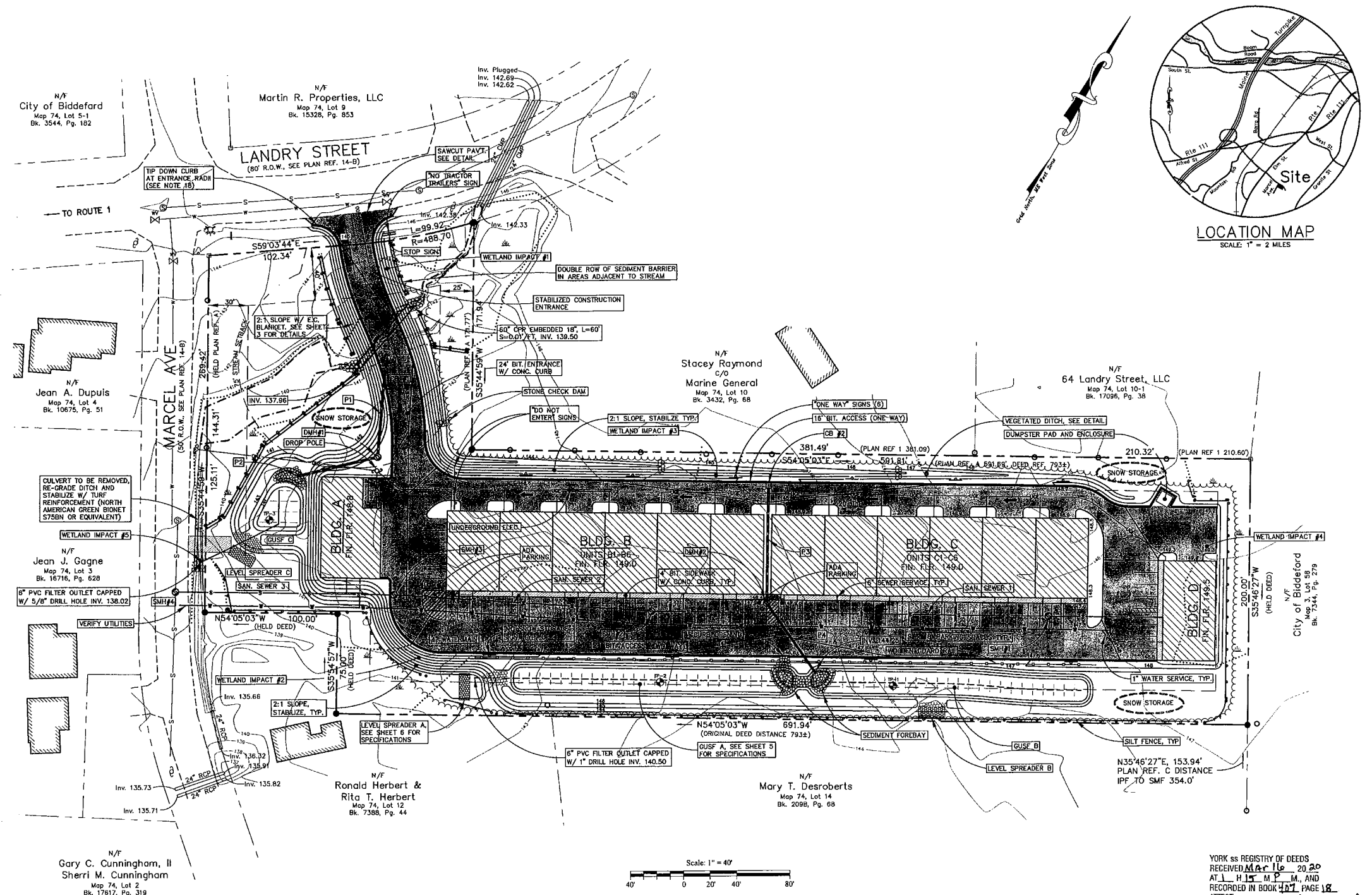
FOR
DEMPESEY, LLC
P.O. Box 468
Old Orchard Beach, Maine

SITE PLAN
DEMPSEY DRIVE
MARCEL AVE
BIDDEFORD, MAINE

DESIGNED	DATE
A. Fagan	Mar. 2019
DRAWN	SCALE
Dept.	1" = 40'
CHECKED	JOB. NO.
S. Blake	19003

SHEET
1

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REVIEW LETTER REQUESTS FOR CITY DEPARTMENTS



Civil Engineering | Surveying

March 15, 2023

Thomas Milligan
Biddeford City Engineer
P.O. Box 586
Biddeford, Maine 04005

Re: Ability to Serve for Sewer Service
Brown Dog Carriers & Logistics
Landry Street, Biddeford

Dear Tom,

As part of the approval process with the City, we need a letter stating the ability to serve this commercial project for the sanitary sewer needs.

Brown Dog Carriers & Logistics is a trucking company proposing a new approximately 6,000 S.F. commercial building on the corner of Landry Street and Marcel Avenue. Attached please find a site plan showing the proposed location of the gravity sewer connecting to the existing public sewer in Marcel Avenue.

Your input and comments would be appreciated as we move forward with the approvals.

Sincerely,

Andrew S. Morrell, P.E.
Project Engineer

encl:

21270- Ability to Serve for Sewer Service



Civil Engineering | Surveying

March 15, 2023

Marcus Knipp
Maine Water Co.
95 Industrial Park Road
Saco, Maine 04072

Re: Ability to Serve for Water Service
Brown Dog Carriers & Logistics
Landry Street, Biddeford

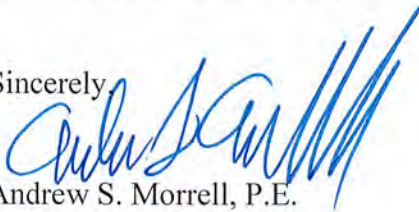
Dear Marcus,

As part of the approval process with the City of Biddeford, we are required to have Maine Water review our design to determine if Maine Water has the ability to serve this development.

Brown Dog Carriers & Logistics is a trucking company proposing a new commercial building on the corner of Landry Street and Marcel Avenue. The proposed building is approximately 6,000 S.F. and will require both domestic and fire services.

We appreciate your review of the existing water main in this area and proposal for new services. Attached please find a site plan currently being reviewed by the City Planner.

Sincerely,



Andrew S. Morrell, P.E.
Project Engineer

encl:

21270- Ability to Serve for Water Service



Civil Engineering | Surveying

March 15, 2023

Joanne Fisk
Deputy Chief of Police
39 Alfred Street
Biddeford, Maine 04005

Re: Brown Dog Carriers & Logistics
Landry Street, Biddeford

Dear Joanne,

As part of the approval process with the Biddeford Planning Board, we need to request your review and response concerning the 911 program.

Brown Dog Carriers & Logistics is a trucking company proposing a new approximately 6,000 S.F. commercial building on the corner of Landry Street and Marcel Avenue.

I am enclosing a copy of the proposed site plan for your use. If you have any questions please let me know.

Sincerely,

Andrew S. Morrell, P.E.
Project Engineer

encl:

21270- E-911 Police Department



Civil Engineering | Surveying

March 15, 2023

Chief Scott Gagne
City of Biddeford Fire Department
152 Alfred Street
Biddeford, Maine 04005

Re: Brown Dog Carriers & Logistics
Landry Street, Biddeford

Dear Deputy Chief Paul LaBrecque,

We are enclosing a Site Plan for Brown Dog Carriers & Logistics, a trucking company, proposing a new approximately 6,000 S.F. commercial building on the corner of Landry Street and Marcel Avenue. The site will be accessible from Landry Street.

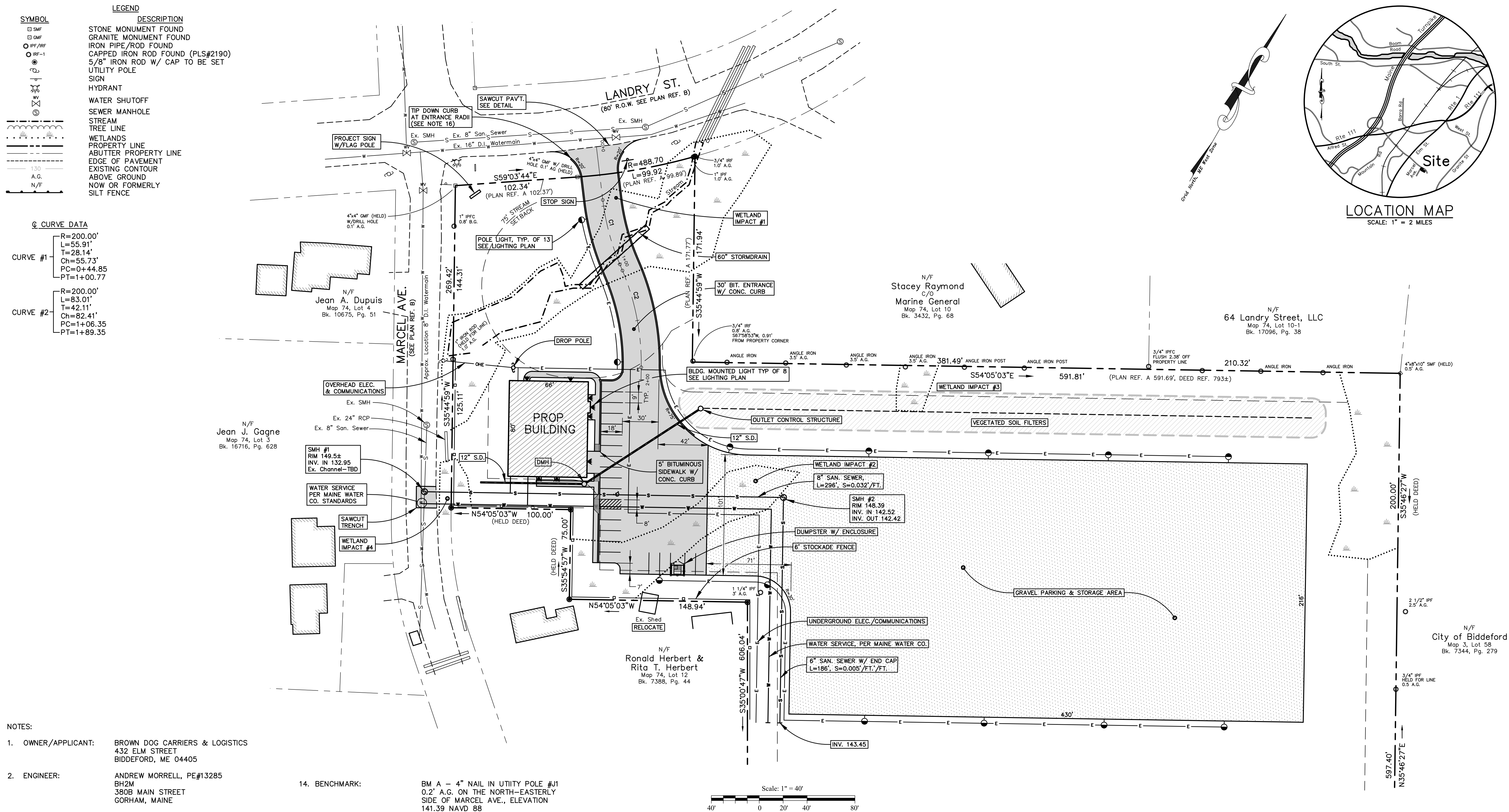
As part of the review process by the planning board, we will need a review and comment from you. If you have any questions, please let us know.

Sincerely,

Andrew S. Morrell, P.E.
Project Engineer

encl:

21270- Fire Department



NOTES:

- | | |
|-------------------------|---|
| 1. OWNER/APPLICANT: | BROWN DOG CARRIERS & LOGISTICS
432 ELM STREET
BIDDEFORD, ME 04405 |
| 2. ENGINEER: | ANDREW MORRELL, PE #13285
BH2M
380B MAIN STREET
GORHAM, MAINE |
| 3. SURVEYOR: | ROBERT C. LIBBY JR., PLS #2190
BH2M |
| 4. WETLAND DELINEATION: | ALEXANDER FINAMORE, CWS, LSE
440 SWAMP ROAD
DURHAM, MAINE 04222 |
| 5. LIGHTING: | HEIDI CONNERS
VISIBLE LIGHT
HAMPTON, NH |
| 6. DEED REFERENCE: | BK. 18846 PG. 723, BK. 18879, PG. 311 |
| 7. TAX MAP REFERENCE: | MAP 74, LOT 11 & MAP 74, LOT 10-2
& MAP 74, LOT 14 |
| 8. ZONING: | I2, INDUSTRIAL 2 |
| 9. MINIMUM STANDARDS: | FRONTAGE - 50'
SETBACKS - 30' FRONT,-MARCEL AVENUE
40' FRONT,-LANDRY STREET
25' SIDE AND REAR
(50' AT RESIDENTIAL DISTRICT) |
| 10. LOT AREA: | 11.619 ACRES |
| 11. SEWER SERVICE: | PUBLIC |
| 12. WATER SERVICE: | PUBLIC |
| 13. ELECTRIC/TELEPHONE: | UNDERGROUND |

14. BENCHMARK: BM A - 4" NAIL IN UTILITY POLE #J1
0.2' A.G. ON THE NORTH-EASTERLY
SIDE OF MARCEL AVE., ELEVATION
141.39 NAVD 88
15. WETLAND IMPACTS: WETLAND IMPACT #1.....427 SF
WETLAND IMPACT #2.....7,024 SF
WETLAND IMPACT #3.....1,050 SF
WETLAND IMPACT #4.....412 SF
TOTAL WETLAND IMPACTS....8,913 SF
16. PARKING REQUIREMENTS: REQUIRED - 20 (1 SPACE PER 200 SF)
PROVIDED - 20 (1 ADA)
17. ALL CURBING PLACED IN THE CITY RIGHT OF WAY SHALL BE GRANITE.
18. ALL AREAS THAT ARE DISTURBED AS A RESULT OF CONSTRUCTION
SHALL BE REVEGETATED PRIOR TO PROJECT COMPLETION.
19. ALL CATCH BASINS IN THE ENTRANCE ROAD AND PARKING AREAS
SHALL BE INSTALLED WITH OIL/DEBRIS HOODS.
20. THIS PARCEL WAS APPROVED IN NOVEMBER 2019 FOR A SITE PLAN
FOR DEMPSEY, LLC. APPROVED PROJECT WAS NOT CONSTRUCTED AND
MUNICIPAL APPROVALS HAVE LAPSED. (SEE PLAN REF. F)
- THIS PROJECT IS SUBJECT TO A MAINE DEP STORMWATER PERMIT,
PERMIT BY RULE STREAM CROSSING AND NPRA TYPE I WETLAND
ALTERATION PERMIT. THE PREVIOUSLY APPROVED PROJECT (SEE
PLAN REFERENCE F) WAS GRANTED SIMILAR MAINE DEP PERMITS
BUT WAS NOT CONSTRUCTED AND PERMITS ARE NO LONGER VALID.
FOLLOWING INITIAL REVIEW COMMENTS BY THE CITY OF BIDDEFORD,
APPLICANT WILL WORK WITH THE MAINE DEP TO GET THIS PROJECT
PERMITTED WITH THE MAINE DEP.

THIS PROJECT IS SUBJECT TO A MAINE DEP STORMWATER PERMIT, PERMIT BY RULE STREAM CROSSING AND NPRA TIER I WETLAND ALTERATION PERMIT. THE PREVIOUSLY APPROVED PROJECT (SEE PLAN REFERENCE F) WAS GRANTED SIMILAR MAINE DEP PERMITS BUT WAS NOT CONSTRUCTED AND PERMITS ARE NO LONGER VALID. FOLLOWING INITIAL REVIEW COMMENTS BY THE CITY OF BIDDEFORD, APPLICANT WILL WORK WITH THE MAINE DEP TO GET THIS PROJECT PERMITTED WITH THE MAINE DEP.

21. PLAN REFERENCES:
- A. "PLAN OF RESUBDIVISION OF LOT-I AIRPORT IND. PARK II LAND OF THE CITY OF BIDDEFORD, ME ON LANDRY ST. IN, BIDDEFORD, ME" DATED AUG. 7, 1984, BY THE CITY OF BIDDEFORD, ME. ENGINEERING DEPT. RECORDED AT THE YORK REGISTRY OF DEEDS BOOK 132 PAGE 23.
 - B. "PLAN SHOWING A PORTION OF MARCEL AVENUE IN, BIDDEFORD, ME" DATED SEPT. 19, 1986, BY THE CITY OF BIDDEFORD, ME. ENGINEERING DEPT. RECORDED AT THE YORK REGISTRY OF DEEDS BOOK 160 PAGE 29.
 - C. "PLAN SHOWING LAND SURVEYED FOR THE CITY OF BIDDEFORD KNOWN AS THE BIDDEFORD MUNICIPAL AIRPORT" DATED JUNE 8, 1983 BY THE CITY OF BIDDEFORD, ME. FILE NO TR-BB11-686"
 - D. "PLAN SHOWING PROPOSED ACQUISITION OF LANDS FOR THE CITY OF BIDDEFORD MUNICIPAL AIRPORT", DATED MAY 13, 1985 REVISED AUG. 1, 1985 BY DOW & COULOMBE INC..

PLAN REFERENCES:

E. "PLAN OF LAND OF FERNAND QUELLETTE"
DATED APRIL 8, 1974 BY DES ROBERTS &
HENRY, INC., RECORDED AT THE Y.C.R.D.
BOOK 66, PAGE. 32.

F. "SITE PLAN, DEMPSEY DRIVE", DATED MARCH
2019 REVISED OCT. 31, 2019 BY BH2M AND
RECORDED IN THE Y.C.R.D., PL. BOOK. 407,
PAGE 18.

YORK,ss REGISTRY OF DEEDS
Received _____
at _____h _____m _____M., and
Filed in Plan Book _____Page _____
ATTEST:

Register

I CERTIFY THAT THIS SURVEY CONFORMS
TO THE MAINE BOARD OF LICENSURE
FOR PROFESSIONAL LAND SURVEYORS
TECHNICAL STANDARDS OF PRACTICE FOR
A STANDARD BOUNDARY SURVEY WITH
THE FOLLOWING EXCEPTIONS:

1. NO SURVEYORS REPORT

THIS PLAN REVIEWED AND APPROVED
BY THE CITY OF BIDDEFORD PLANNING
BOARD.

CHAIR

PRELIMINARY SITE PLAN

**BROWN DOG CARRIERS
& LOGISTICS**

MARCEL AVE
BIDDEFORD, MAINE

DESIGNED W. Pelkey	DATE Aug.2022
DRAWN Dept.	SCALE 1" = 40'
CHECKED A. Morrell	JOB. NO. 21270

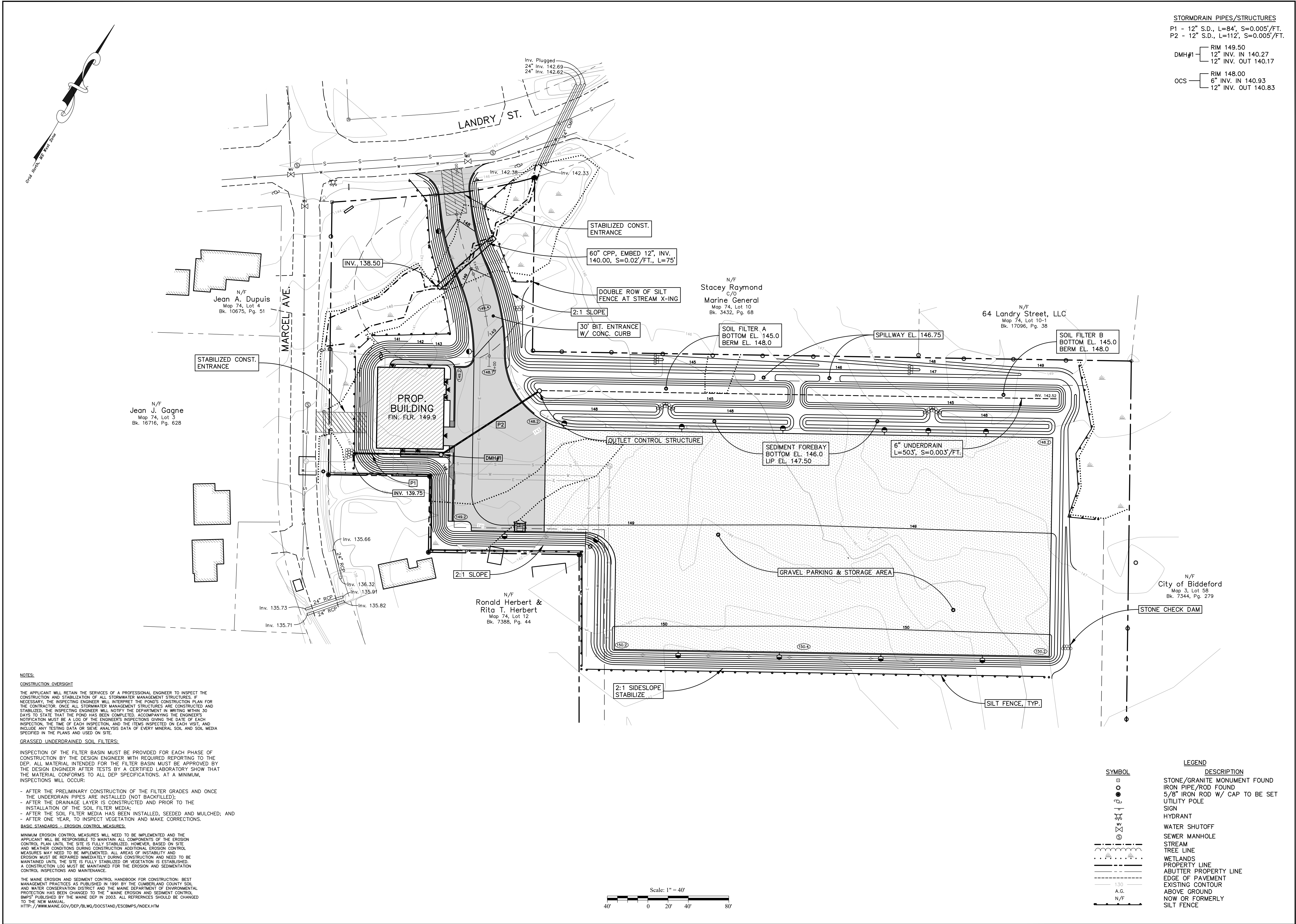
SHEET
1

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 **BH2M**
Berry, Huff, McDonald, Milligan Inc.
Engineers, Surveyors
380B Main Street
Gorham, Maine 04038
Tel. (207) 839-2771
Fax (207) 839-8250

FOR
Brown Dog Carriers & Logistics
432 Elm Street
Biddeford, ME 04005

[illegible]



STORMDRAIN PIPES/STRUCTURES

P1	- 12" S.D., L=84', S=0.005'/FT.
P2	- 12" S.D., L=112', S=0.005'/FT.

DMH#1	RIM	149.50
	12" INV. IN	140.27
	12" INV. OUT	140.17

OCS	RIM	148.00
	6" INV. IN	140.93
	12" INV. OUT	140.83

NOTES:

CONSTRUCTION OVERSIGHT

THE APPLICANT WILL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES. IF NECESSARY, THE INSPECTING ENGINEER WILL INTERPRET THE POND'S CONSTRUCTION PLAN FOR THE CONTRACTOR. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER WILL NOTIFY THE DEPARTMENT IN WRITING WITHIN 30 DAYS TO STATE THAT THE POND HAS BEEN COMPLETED, ACCOMPANYING THE ENGINEER'S NOTIFICATION MUST BE A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION, AND THE ITEMS INSPECTED ON EACH VISIT, AND INCLUDE ANY TESTING DATA OR SEVE ANALYSIS DATA OF EVERY MINERAL SOIL AND SOIL MEDIA SPECIFIED IN THE PLANS AND USED ON SITE.

GRASSED UNDERDRAINED SOIL FILTERS:

INSPECTION OF THE FILTER BASIN MUST BE PROVIDED FOR EACH PHASE OF CONSTRUCTION BY THE DESIGN ENGINEER WITH REQUIRED REPORTING TO THE DEP. ALL MATERIAL INTENDED FOR THE FILTER BASIN MUST BE APPROVED BY THE DESIGN ENGINEER AFTER TESTS BY A CERTIFIED LABORATORY SHOW THAT THE MATERIAL CONFORMS TO ALL DEP SPECIFICATIONS. AT A MINIMUM, INSPECTIONS WILL OCCUR:

- AFTER THE PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED (NOT BACKFILLED);
- AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE SOIL FILTER MEDIA;
- AFTER THE SOIL FILTER MEDIA HAS BEEN INSTALLED, SEEDED AND MULCHED; AND
- AFTER ONE YEAR, TO INSPECT VEGETATION AND MAKE CORRECTIONS.

BASIC STANDARDS - EROSION CONTROL MEASURES:

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

THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES AS PUBLISHED IN 1991 BY THE CUMBERLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT AND THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION HAS BEEN CHANGED TO THE "MAINE EROSION AND SEDIMENT CONTROL BMP'S" PUBLISHED BY THE MAINE DEP IN 2003. ALL REFERENCES SHOULD BE CHANGED TO THE NEW MANUAL.

HTTP://WWW.MAINE.GOV/DEP/BLWG/DOCSTAND/JSCBMP/INDEX.HTM

SYMBOL	DESCRIPTION
	STONE/GRANITE MONUMENT FOUND
	IRON PIPE/ROD FOUND
	5/8" IRON ROD W/ CAP TO BE SET
	UTILITY POLE
	SIGN
	HYDRANT
	WATER SHUTOFF
	SEWER MANHOLE
	STREAM
	TREE LINE
	WETLANDS
	PROPERTY LINE
	ABUTTER PROPERTY LINE
	EDGE OF PAVEMENT
	EXISTING CONTOUR
	ABOVE GROUND
	NOW OR FORMERLY
	SILT FENCE

NO.	DATE	REVISION	DESCRIPTION
1	3/15/23		Preliminary Submission

Berry, Huff, McDonald, Milfigan Inc.
Engineers, Surveyors
380B Main Street
Gorham, Maine 04038
Tel. (207) 839-2771
Fax (207) 839-8250

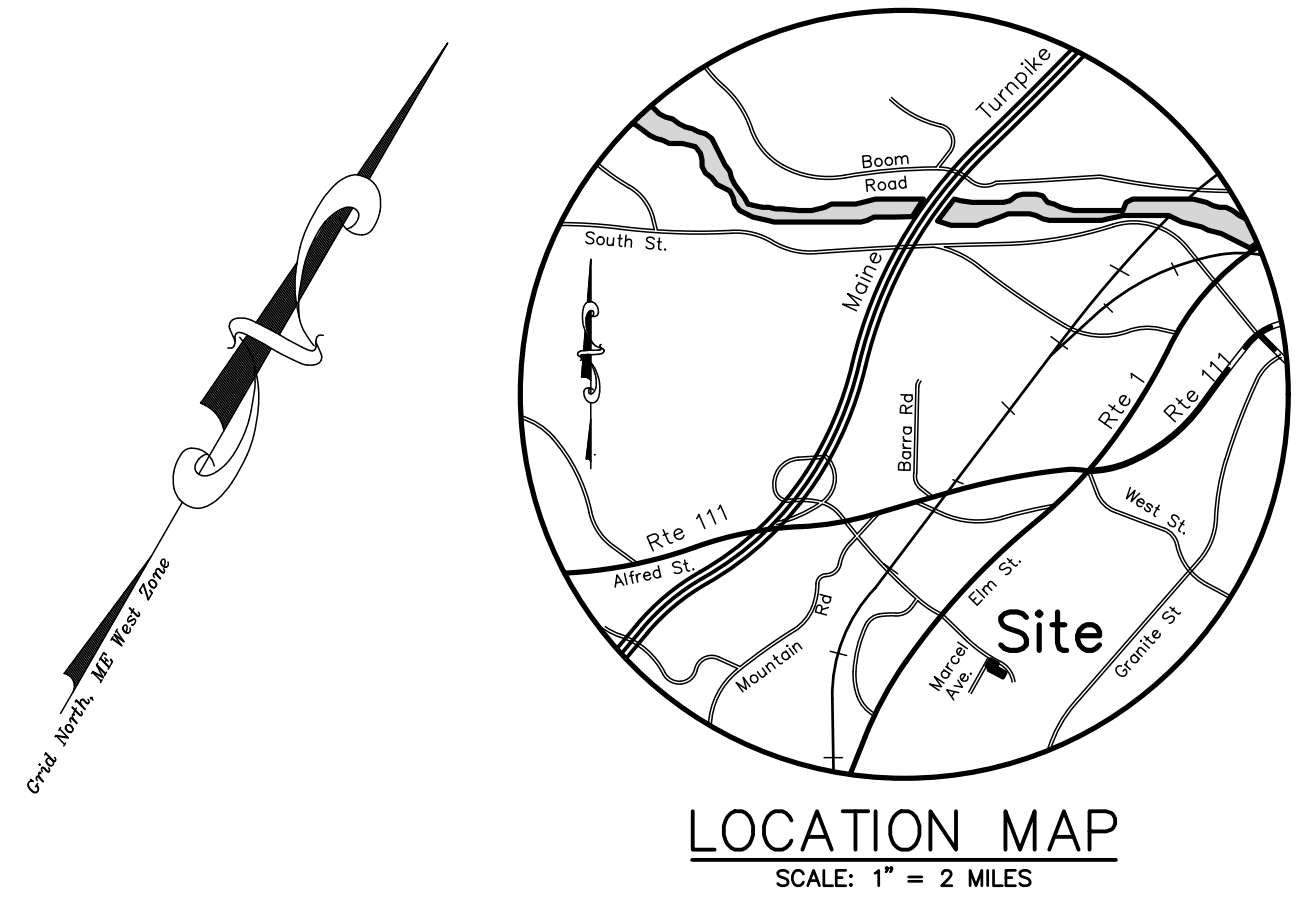
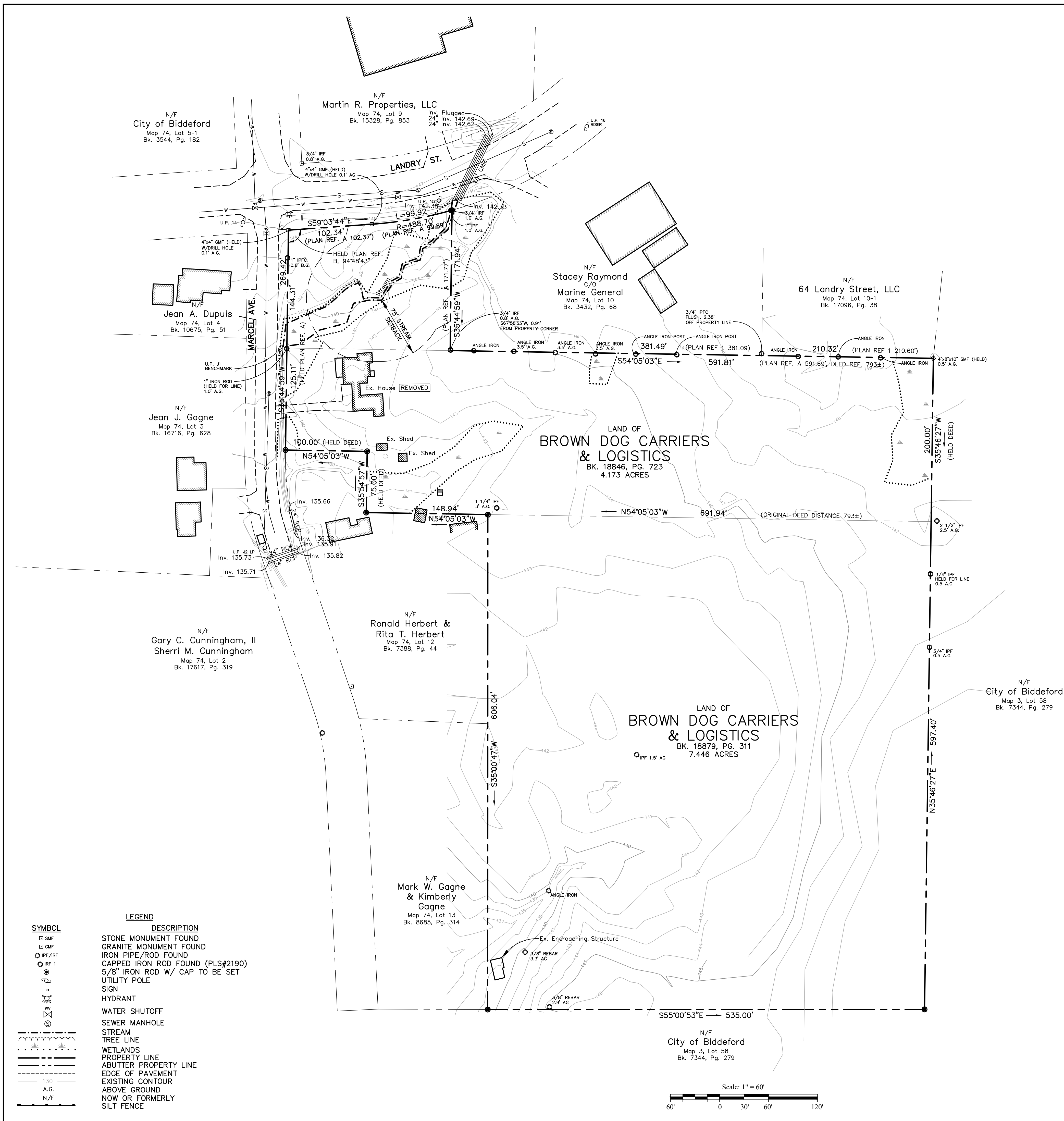
FOR
Brown Dog Carriers & Logistics
432 Elm Street
Biddeford, ME

GRADING AND EROSION CONTROL
BROWN DOG CARRIERS & LOGISTICS
MARCEL AVE
BIDDEFORD, MAINE

DESIGNED W. Pelkey	DATE Jan. 2022
DRAWN Dept.	SCALE 1" = 40'
CHECKED A. Morrell	JOB. NO. 21270

SHEET
2

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- NOTES:
1. OWNER/APPLICANT: BROWN DOG CARRIERS & LOGISTICS
432 ELM STREET
BIDDEFORD, ME 04405
 2. SURVEYOR: ROBERT C. LIBBY JR., PLS #2190
BH2M
380B MAIN STREET
GORHAM, MAINE
 3. WETLAND DELINEATION: ALEXANDER FINAMORE, CWS, LSE
440 SWAMP ROAD
DURHAM, MAINE 04222
 4. DEED REFERENCE: Bk. 18846, Pg. 723 & Bk. 18879, Pg. 311
 5. TAX MAP REFERENCE: MAP 74, LOT 11 & MAP 74, LOT 10-2
 6. ZONING: I2, INDUSTRIAL 2
 8. MINIMUM STANDARDS: FRONTAGE - 50'
SETBACKS - 30' FRONT, -MARCEL AVENUE
40' FRONT, -LANDRY STREET
25' SIDE AND REAR
(50' AT RESIDENTIAL DISTRICT)
 9. LOT AREA: 11.619 ACRES
 10. PLAN REFERENCES: A. "PLAN OF RESUBDIVISION OF LOT-I
AIRPORT IND. PARK II LAND OF THE CITY
OF BIDDEFORD, ME ON LANDRY ST. IN,
BIDDEFORD, ME" DATED AUG. 7, 1984, BY
THE CITY OF BIDDEFORD, ME. ENGINEERING
DEPT. RECORDED AT THE YORK REGISTRY
OF DEEDS BOOK 132 PAGE 23.
B. "PLAN SHOWING A PORTION OF MARCEL
AVENUE IN, BIDDEFORD, ME" DATED SEPT.
19, 1986, BY THE CITY OF BIDDEFORD, ME.
ENGINEERING DEPT. RECORDED AT THE
YORK REGISTRY OF DEEDS BOOK 160 PAGE
29.
C. "PLAN SHOWING LAND SURVEYED FOR THE
CITY OF BIDDEFORD KNOWN AS THE
BIDDEFORD MUNICIPAL AIRPORT" DATED
JUNE 8, 1983 BY THE CITY OF BIDDEFORD,
ME. FILE NO TR-BB11-686"
D. "PLAN SHOWING PROPOSED ACQUISITION
OF LANDS FOR THE CITY OF BIDDEFORD
MUNICIPAL AIRPORT", DATED MAY 13, 1985
REVISED AUG. 1, 1985 BY DOW & COULOMBE
INC..
E. "PLAN OF LAND OF FERNAND OUELLETTE"
DATED APRIL 8, 1974 BY DES ROBERTS &
HENRY, INC., RECORDED AT THE Y.C.R.D.
BOOK 66, PAGE. 32.
F. "SITE PLAN, DEMPSEY DRIVE, ON MARCEL
AVENUE IN, BIDDEFORD, ME" DATED MARCH
2019, BY BH2M, RECORDED AT THE YORK
REGISTRY OF DEEDS, BOOK 407 PAGE 18.

I CERTIFY THAT THIS SURVEY CONFORMS
TO THE MAINE BOARD OF LICENSURE
FOR PROFESSIONAL LAND SURVEYORS
TECHNICAL STANDARDS OF PRACTICE FOR
A STANDARD BOUNDARY SURVEY WITH
THE FOLLOWING EXCEPTIONS:

1. NO SURVEYORS REPORT

ROBERT C. LIBBY JR. PLS #2190

REVISION	
NO.	DATE
1	3/15/23
Preliminary Submission	

BH2M
Berry, Huff, McDonald, Milfigan Inc.
Engineers, Surveyors
380B Main Street
Gorham, Maine 04038
Tel. (207) 839-2771
Fax (207) 839-8250

FOR

Brown Dog Carriers & Logistics
432 Elm Street
Biddeford, ME

STANDARD BOUNDARY
SURVEY

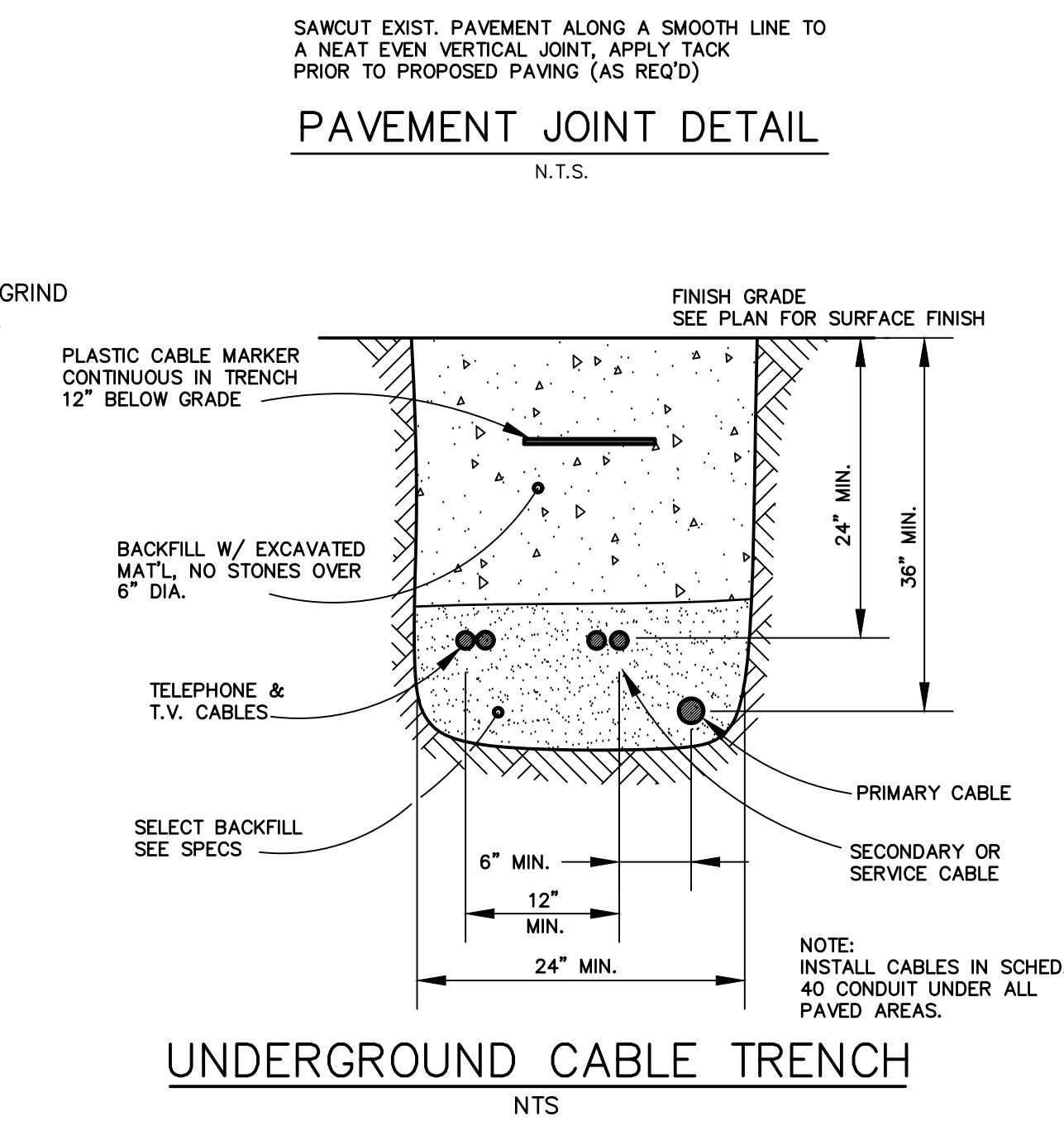
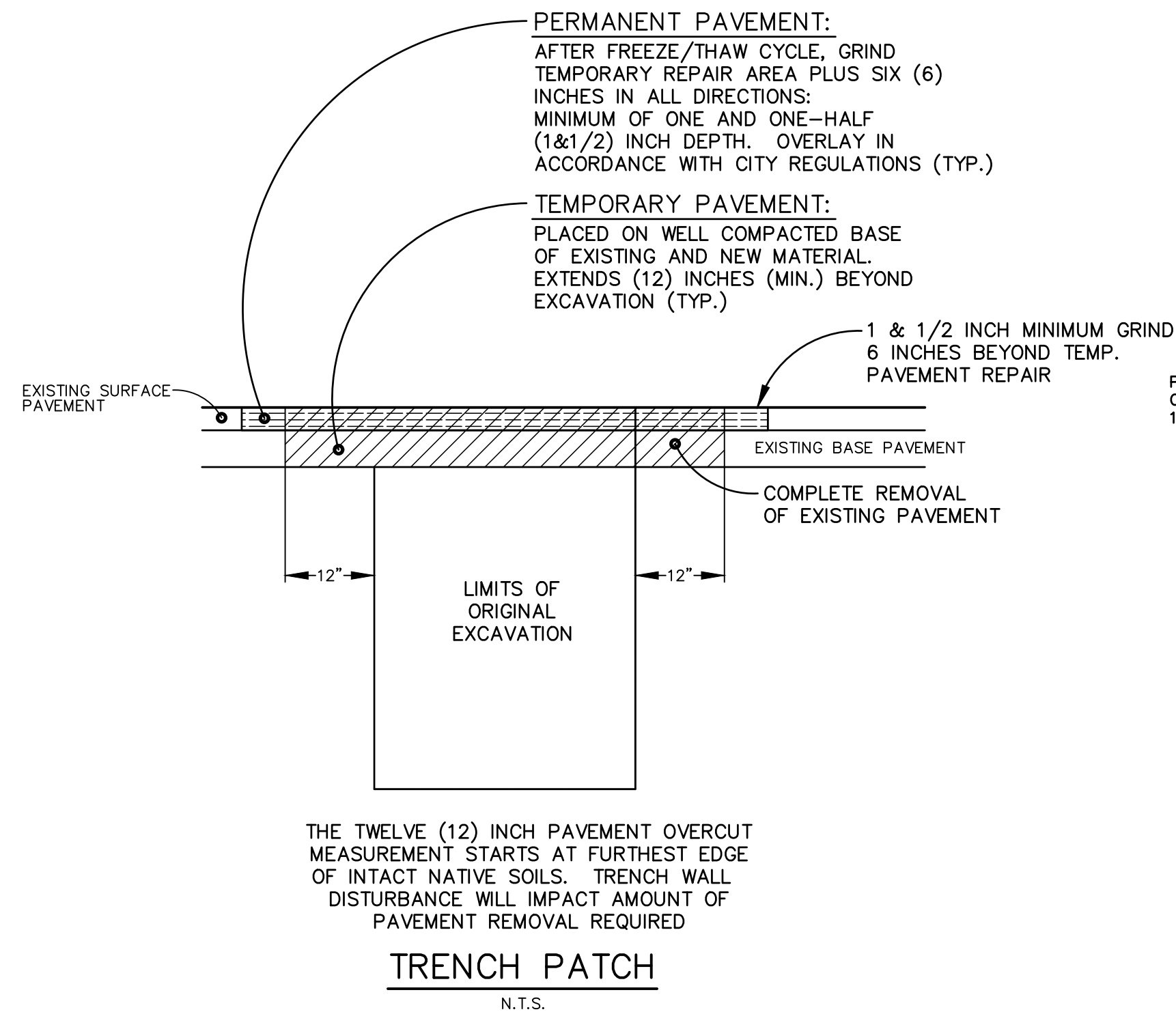
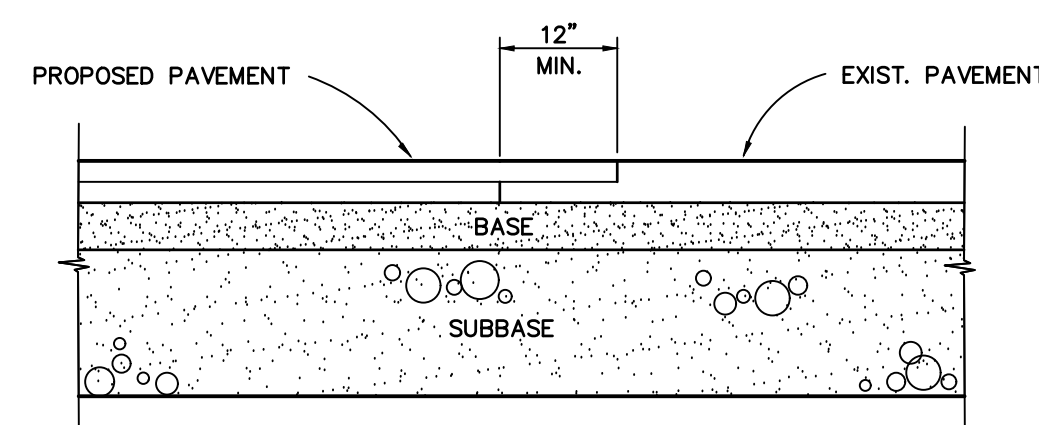
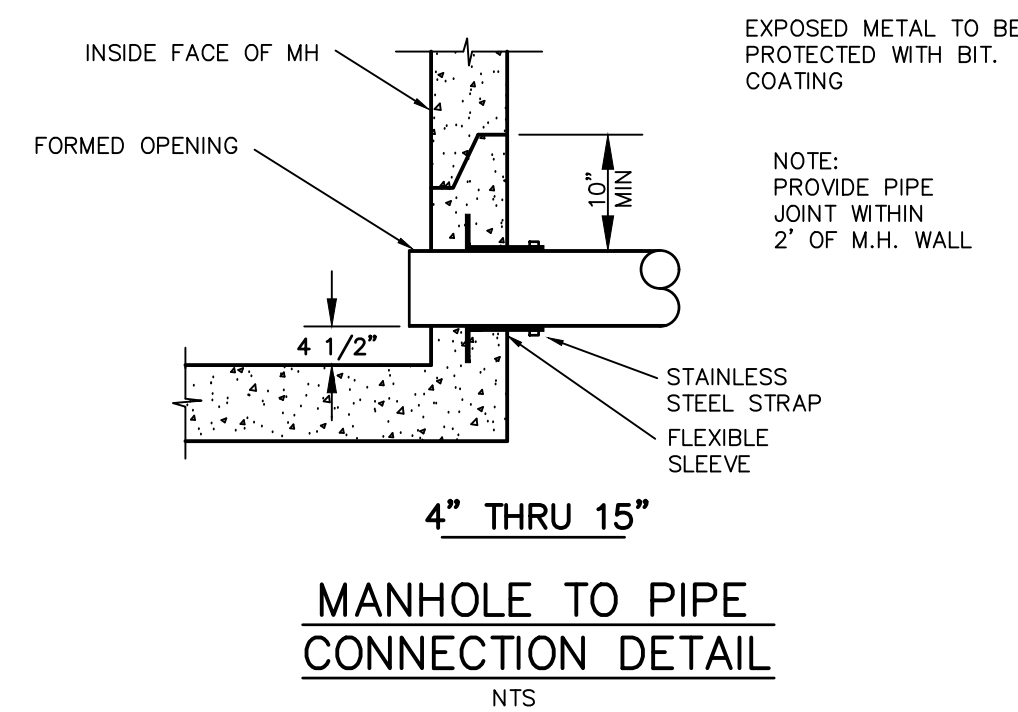
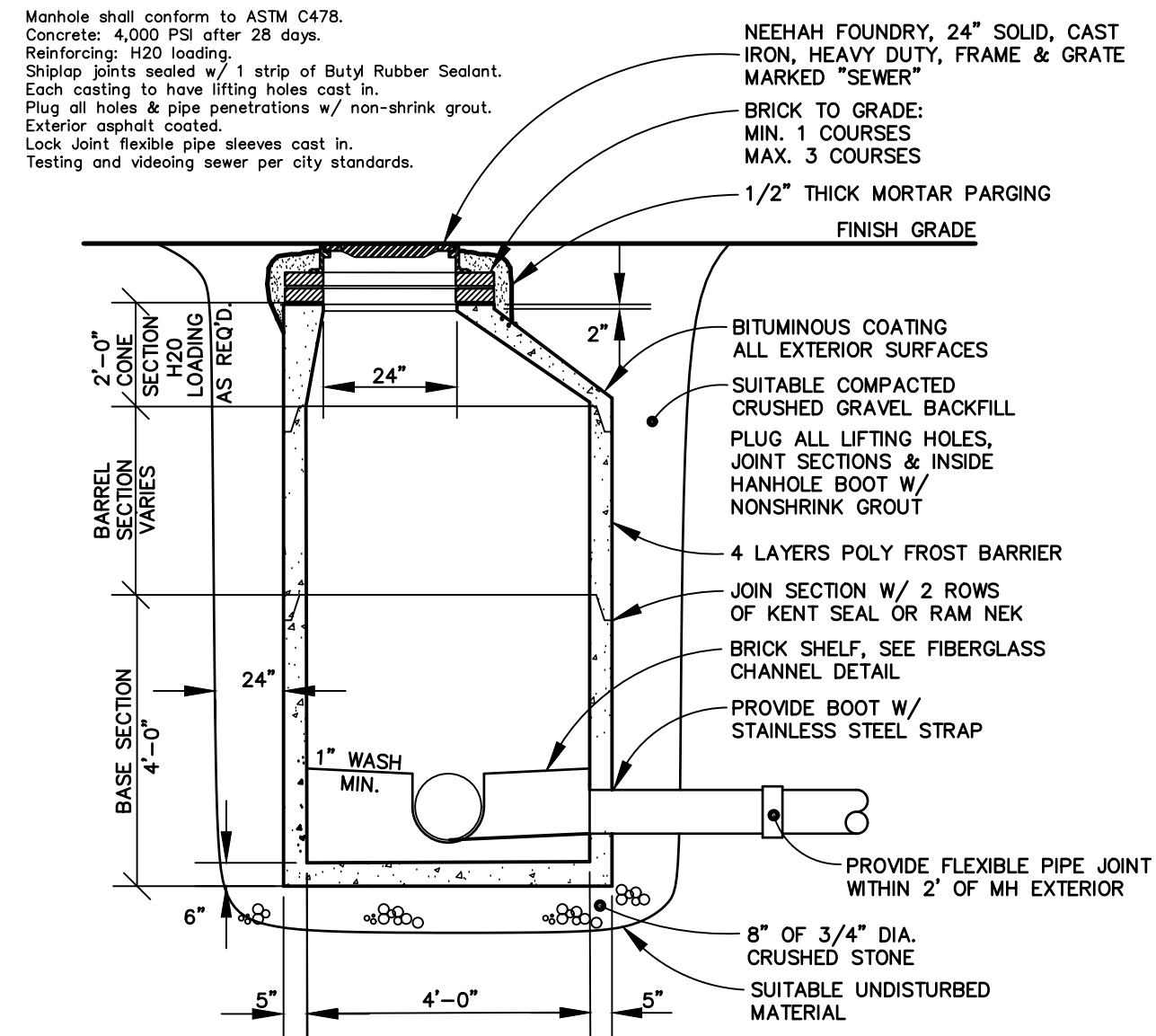
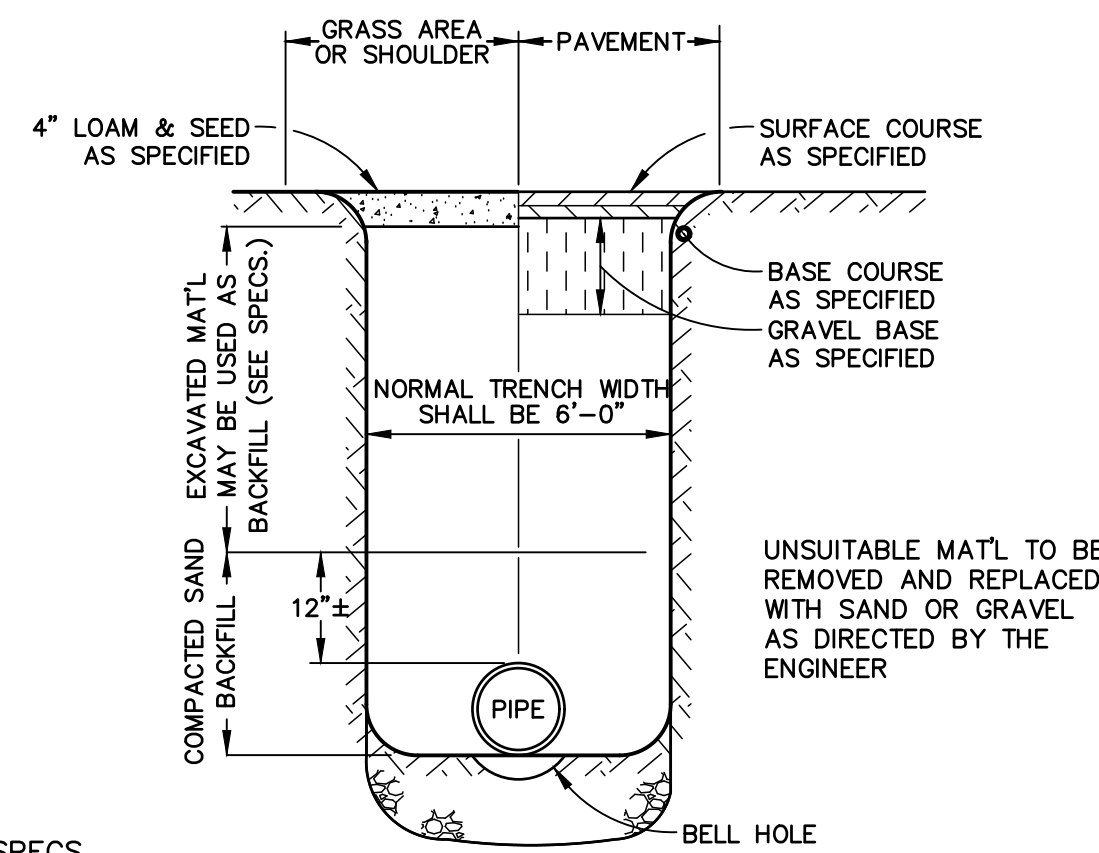
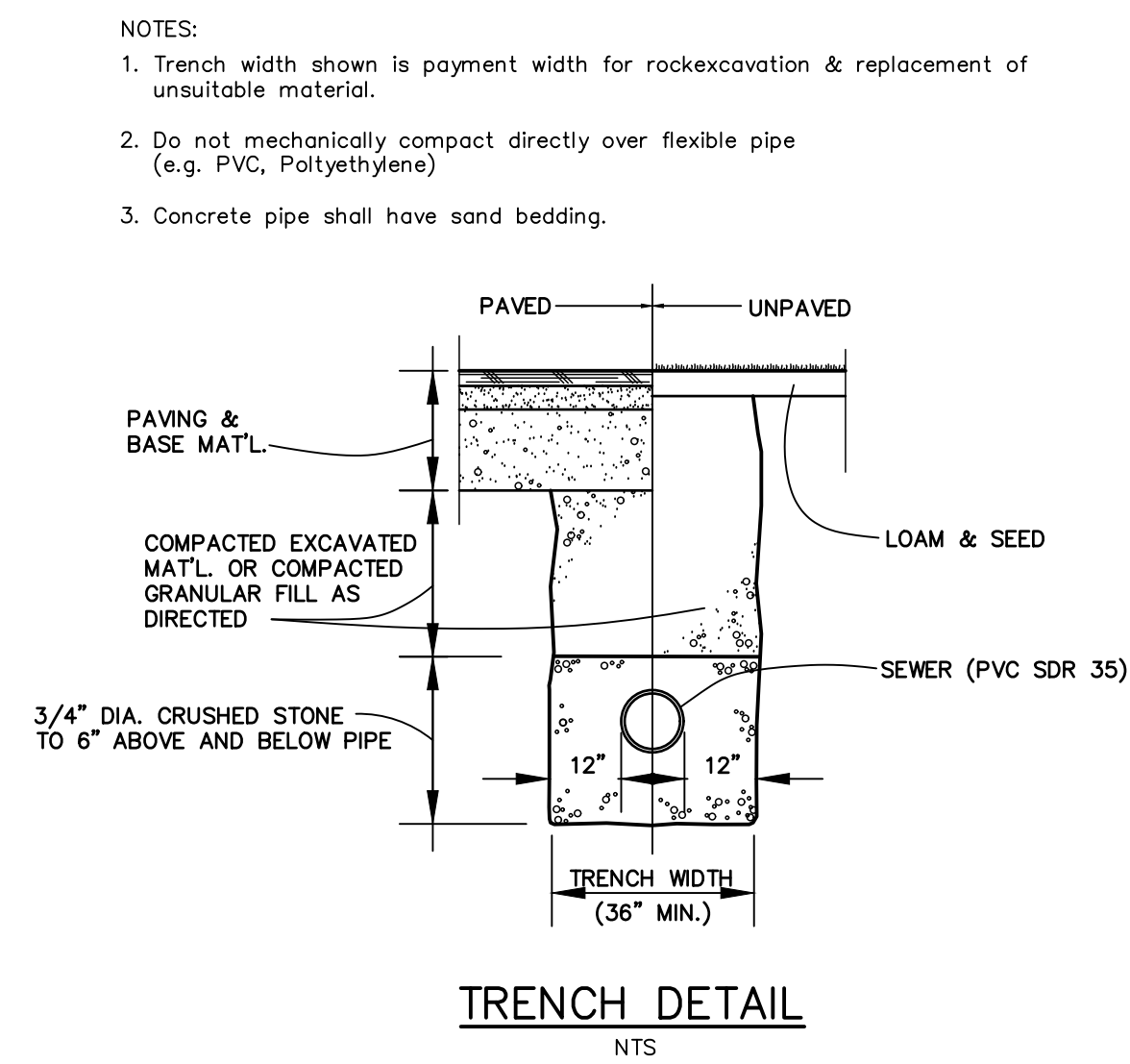
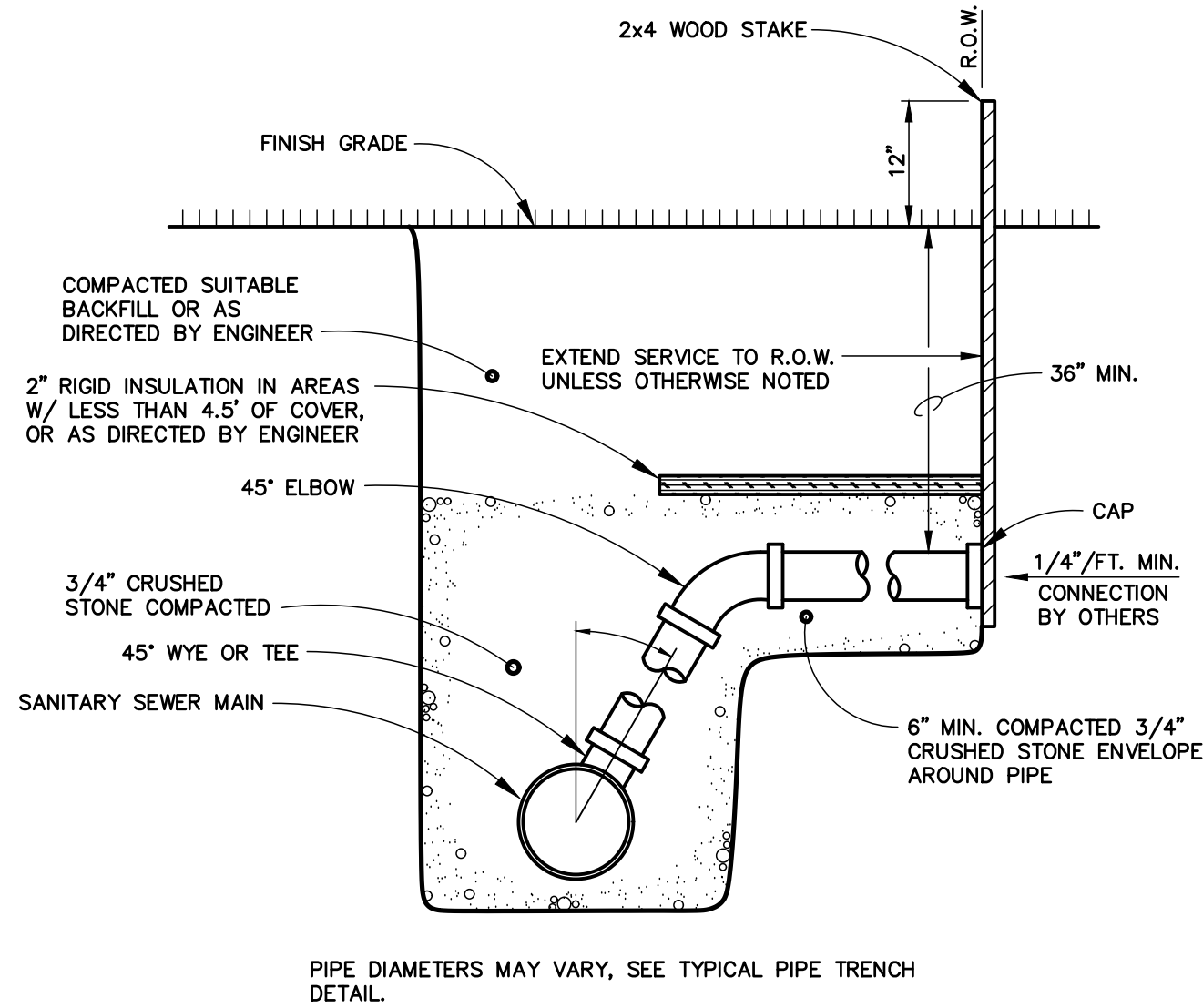
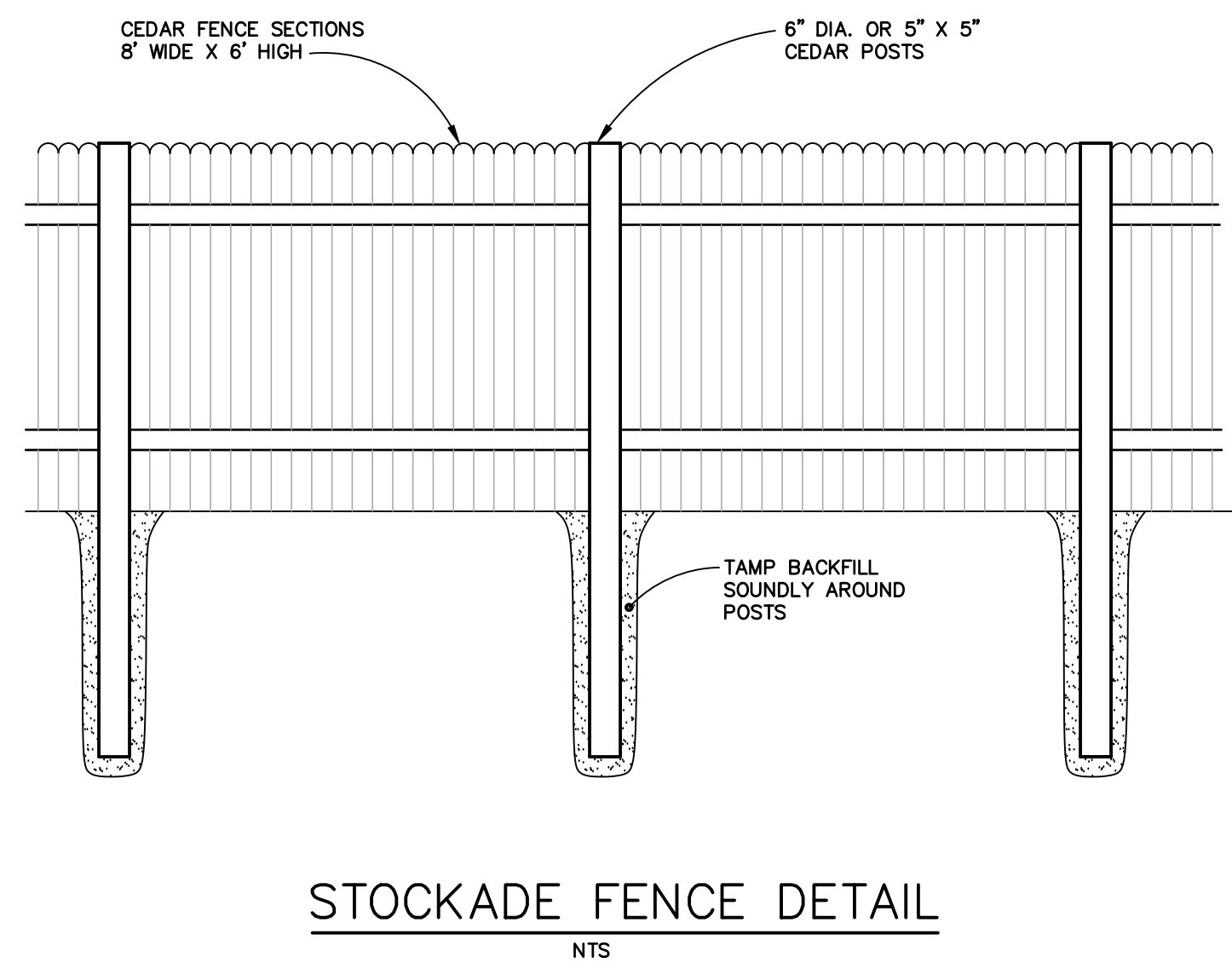
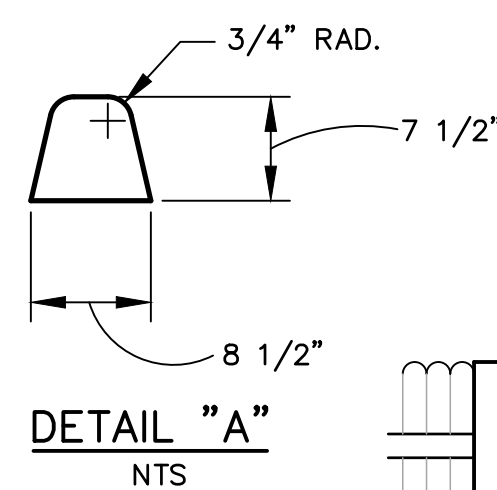
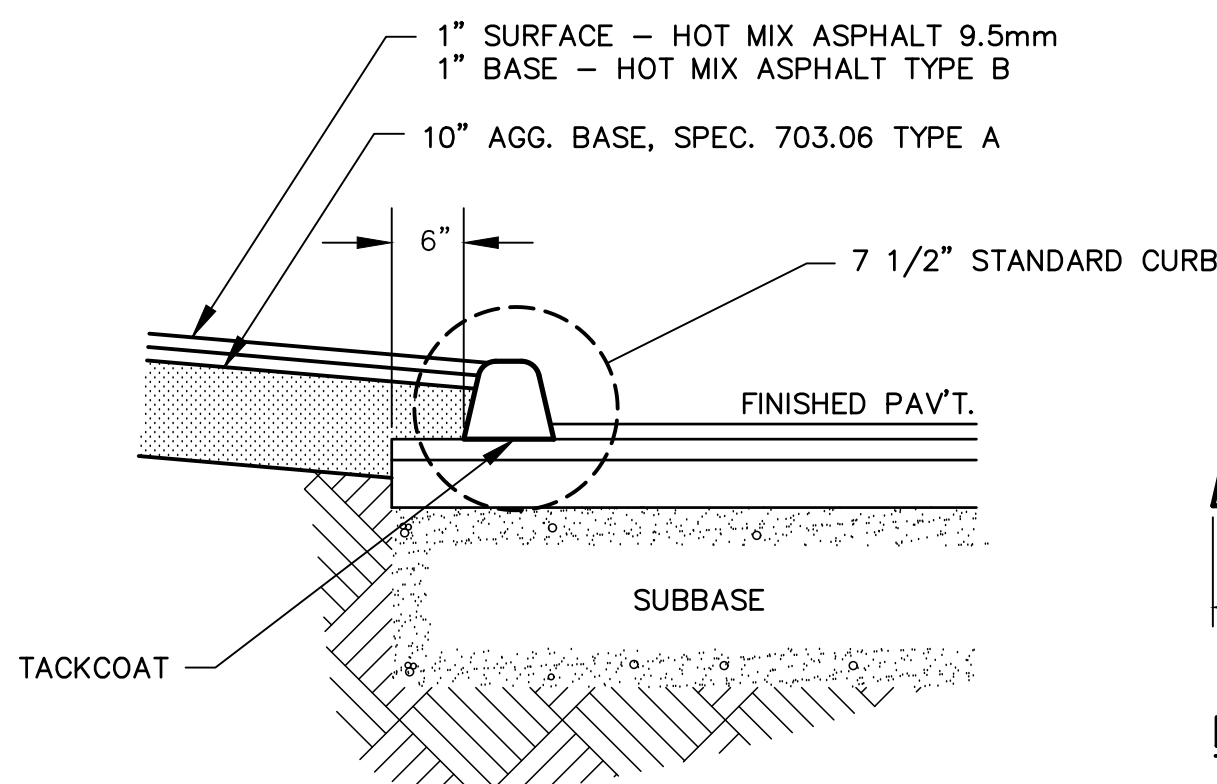
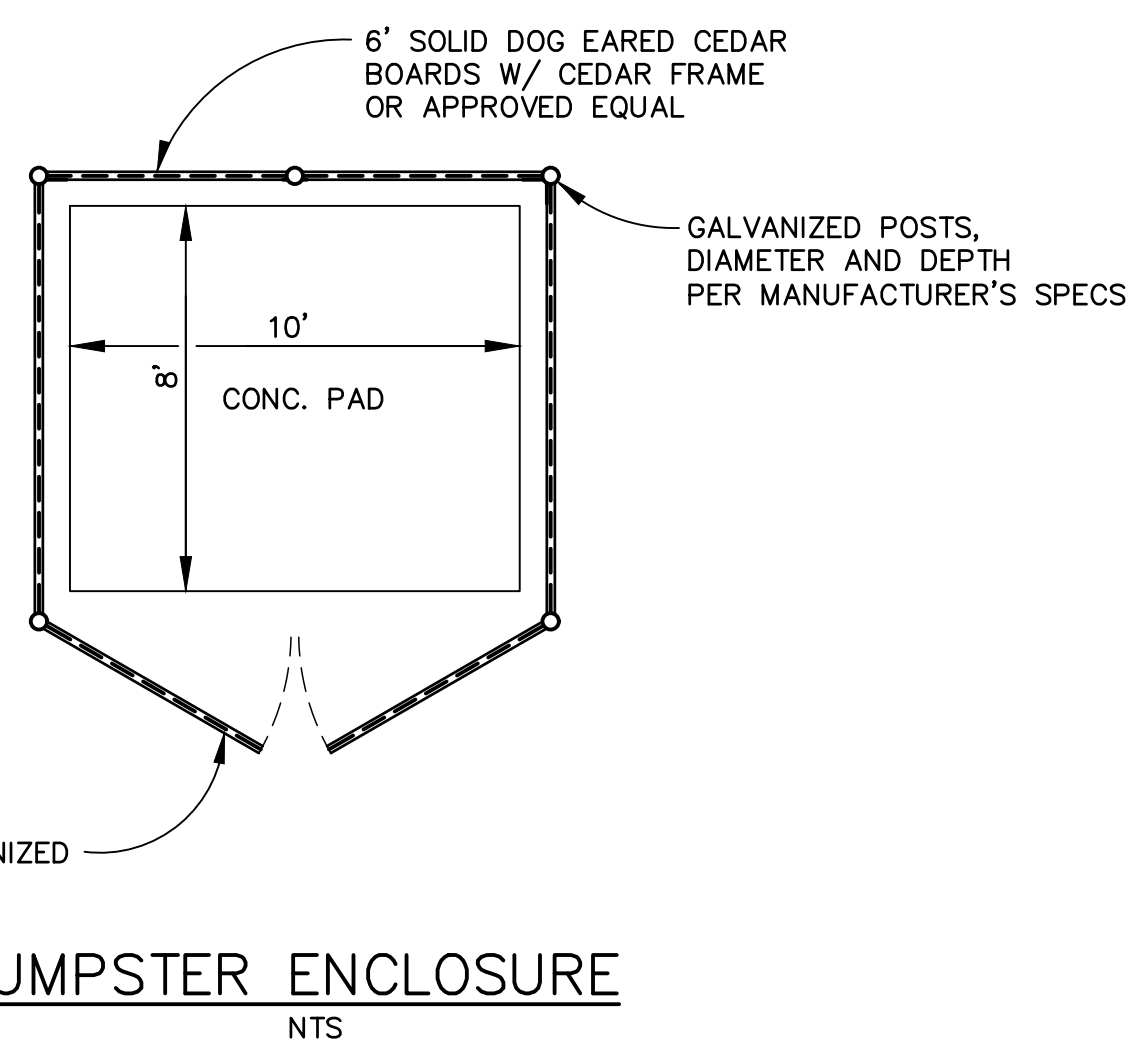
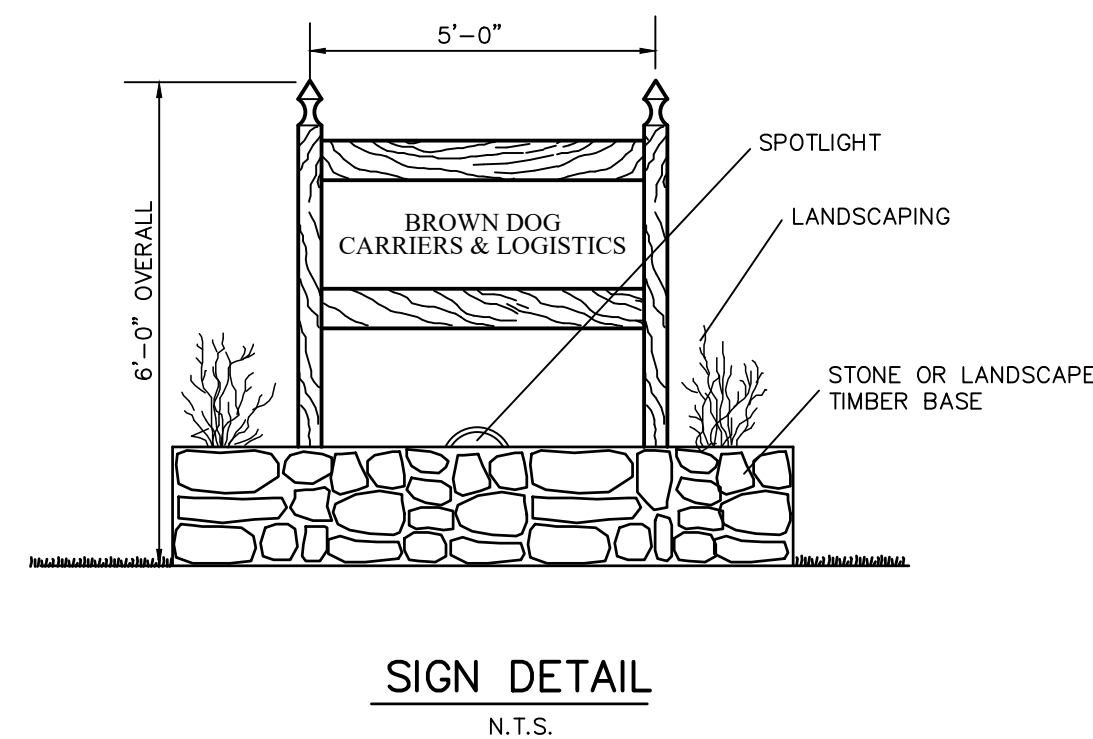
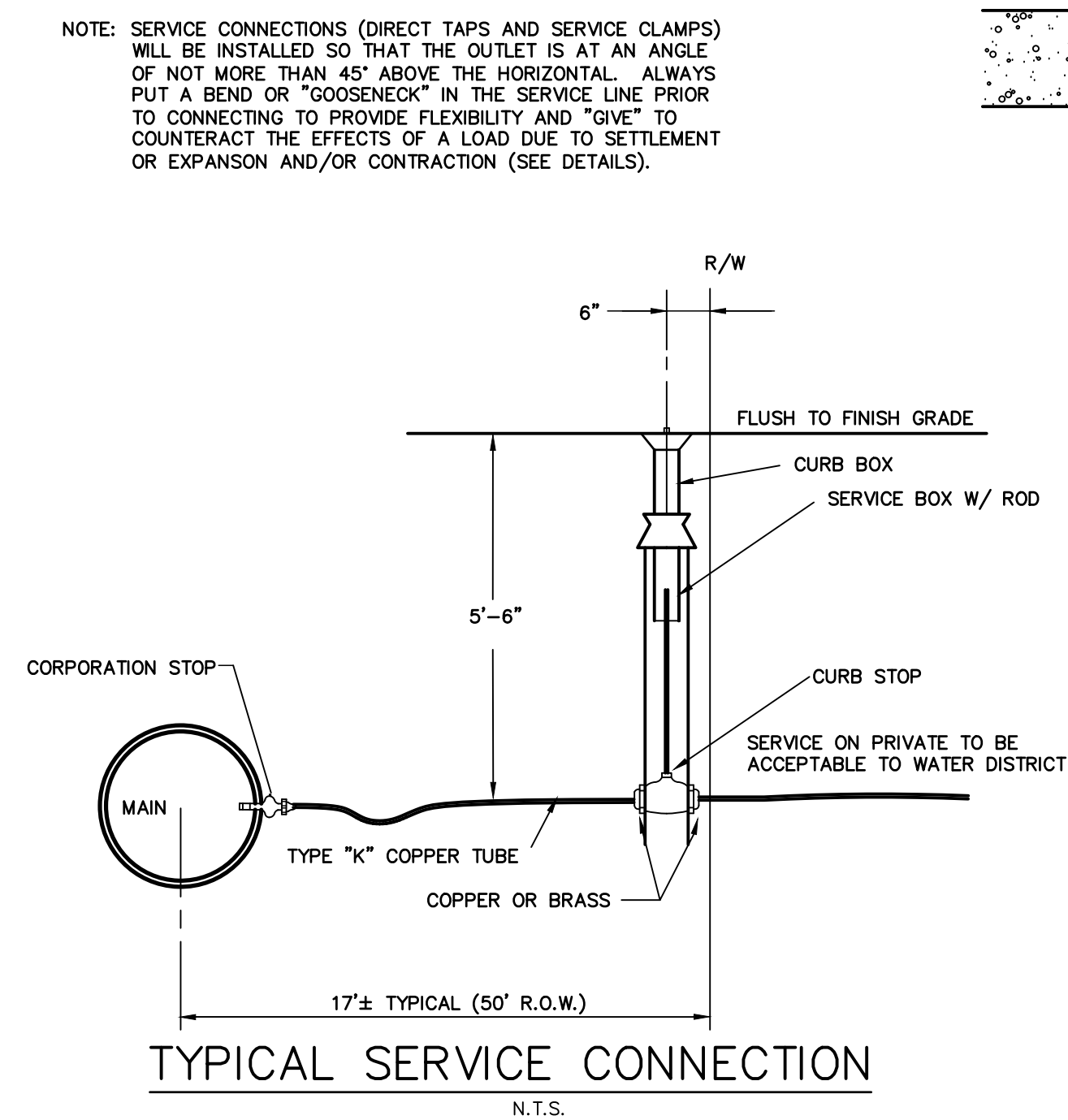
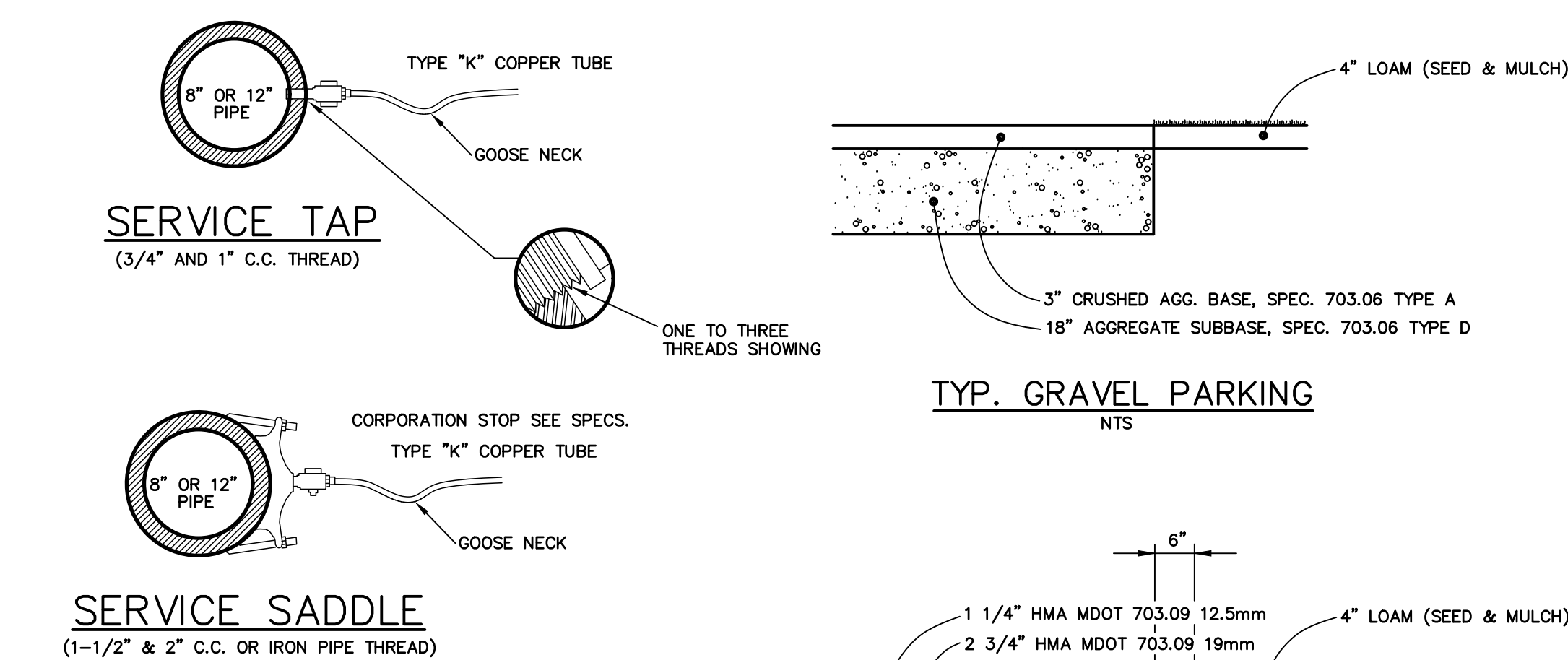
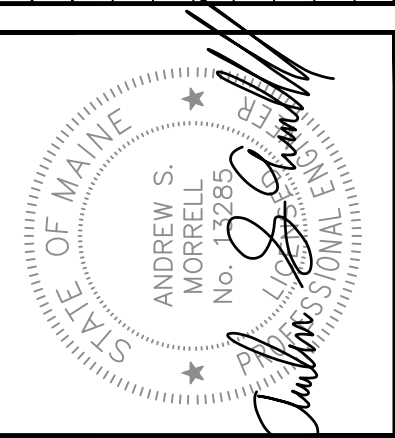
LAND OF
BROWN DOG CARRIERS & LOGISTICS
MARCEL AVE
BIDDEFORD, MAINE

DESIGNED	DATE
A. Morrell	Jan. 2022
DRAWN	SCALE
Dept.	1" = 40'
CHECKED	JOB. NO.
R. Libby Jr.	21270

SHEET

3

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BH2M



Berry, Huff, McDonald, Milligan Inc.
Engineers, Surveyors

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Fax: (207) 839-8250

FOR
Brown Dog Carriers & Logistics
432 Elm Street
Biddeford, ME 04005

STANDARD DETAILS

BROWN DOG CARRIERS
& LOGISTICS

MARCEL AVE
BIDDEFORD, MAINE

DESIGNED A. Fagan	DATE Aug.2022
DRAWN Dept.	SCALE 1" = 40'
CHECKED A. Morrell	JOB. NO. 21270

SHEET

4

EROSION AND SEDIMENT CONTROL PLAN

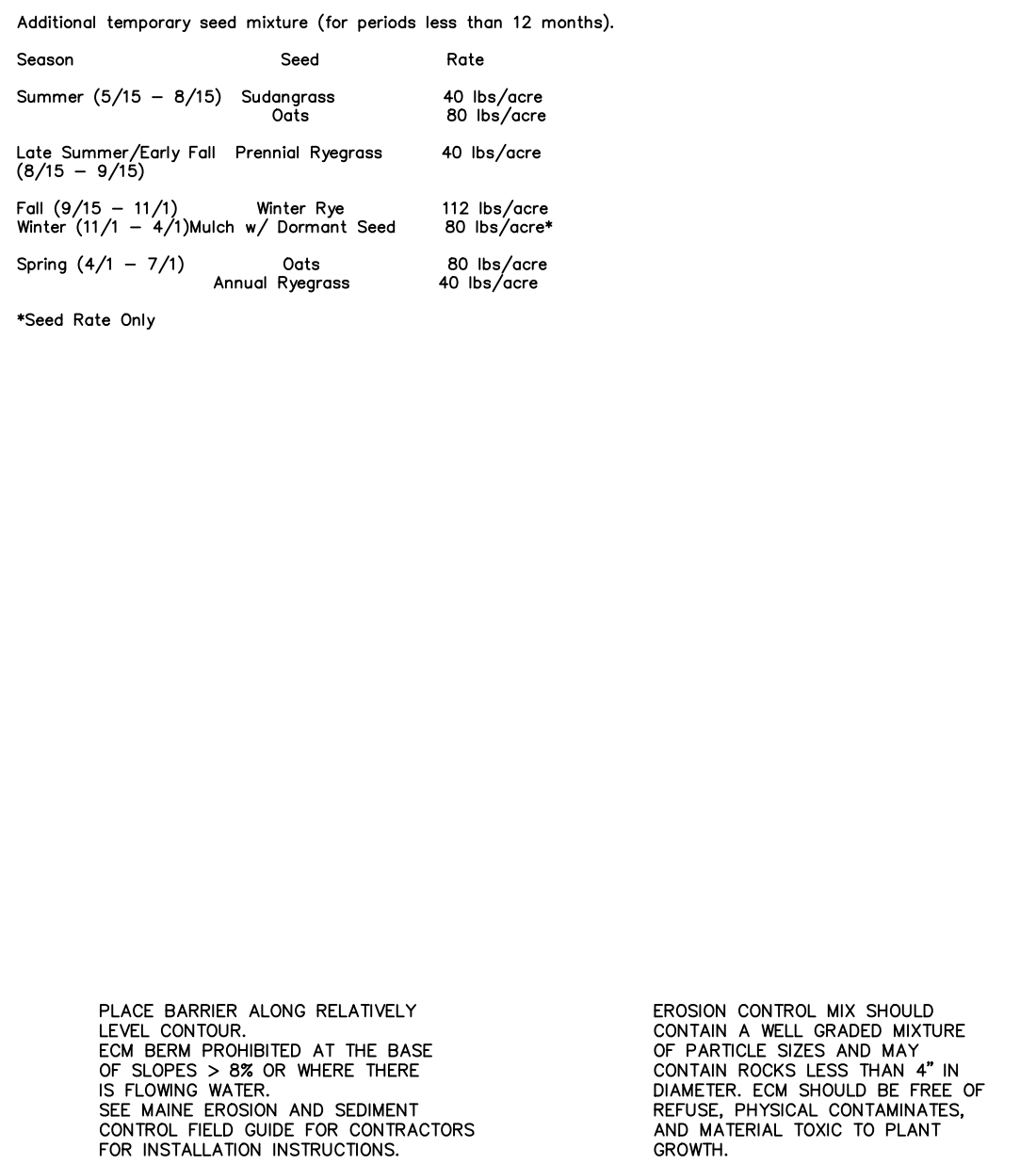
THIS PLAN HAS BEEN DEVELOPED AS A STRATEGY TO CONTROL SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION. THIS PLAN IS BASED ON THE STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION IN DEVELOPING AREAS AS CONTAINED IN THE LATEST REVISION OF THE 2003 MAINE EROSION AND SEDIMENT CONTROL BMPs MANUAL FOR DESIGNERS AND ENGINEERS, AND THE LATEST REVISION TO THE 2003 MAINE EROSION AND SEDIMENT CONTROL FIELD GUIDE FOR CONTRACTORS. SEE MANUALS FOR ADDITIONAL INFORMATION AND DETAILS.

THE PROPOSED LOCATIONS OF SILTATION AND EROSION CONTROL STRUCTURES ARE SHOWN ON THE SITE PLAN.

1. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMPs", DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST REVISION.
2. THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION WILL BE LEFT IN AN UNTREATED OR UNVEGETATED CONDITION FOR A MINIMUM TIME. AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 7 DAYS OF FINAL GRADING AND TEMPORARILY STABILIZED WITHIN 7 DAYS OF INITIAL DISTURBANCE OF THE SOIL. IF THE DISTURBANCE IS WITHIN 75 FEET OF A WETLAND OR WATERBODY, THE AREA SHALL BE STABILIZED WITHIN 2 DAYS OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.
3. EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
4. EXPOSED AREA SHOULD BE LIMITED TO THAT WHICH CAN BE MULCHED IN ONE DAY.
5. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED SUCH THAT NO MORE THAN ONE ACRE OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION.
6. SEDIMENT BARRIERS (EROSION CONTROL MIX, STONE CHOCK DAMS, STABILIZED CONSTRUCTION ENTRANCE, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM. THE CONTRACTOR SHALL MAINTAIN THE STABILIZED CONSTRUCTION ENTRANCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.
7. INSTALL EROSION CONTROL MIX AT TOE OF SLOPES TO FILTER SILT FROM RUNOFF. SEE E.C. MIX DETAIL FOR PROPER INSTALLATION. EROSION CONTROL MIX WILL REMAIN IN PLACE PER NOTE #6. THE USE OF AN EROSION CONTROL MIX BEAM IS PROHIBITED AT THE BASE OF SLOPES STEEPER THAN 8% OR WHERE THERE IS FLOWING WATER.
8. ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED, AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY BEFORE AND FOLLOWING ANY SIGNIFICANT RAINFALL (ONE INCH OR MORE IN A 24-HOUR PERIOD) OR SHOW MELT OR INCREASE DUE TO SEDIMENT ACCUMULATION OR COMPRESSION. IF AN INSPECTION DETERMINES THAT A CORRECTIVE ACTION IS REQUIRED, THE ACTION OR REPAIR SHALL BE STARTED BY THE CONTRACTOR BY THE END OF THE NEXT WORKDAY AND COMPLETED WITHIN SEVEN DAYS OR BEFORE THE NEXT STORM EVENT. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS BELOW ARE STABILIZED BY TURF EROSION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS OF PERMANENT STABILIZATION. PERMANENT STABILIZATION IS 80% GRASS CATCH IN VEGETATED AREAS.
9. NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN ONE AND ONE HALF TO ONE (1.5 TO 1). EROSION CONTROL MIX IS AN ACCEPTABLE STABILIZATION MEASURE FOR SLOPES UP TO 3:1, WITH LIMITS THAT ARE COVERED BY NOTES ON THIS SHEET. SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH EROSION CONTROL BLANKETS AND ALL SLOPES GREATER THAN 2:1 SHALL BE STABILIZED WITH RIPRAP.
10. IF FINAL SEEDING OF THE DISTURBED AREAS IS NOT COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST, USE TEMPORARY MULCHING (DOMINANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
11. TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINAL GRADED SHALL BE COMPLETED BY AUG. 15 OR 45 DAYS PRIOR TO THE FIRST KILLING FROST (OCT. 1) TO PROTECT FROM SPRING RUNOFF PROBLEMS.
12. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT WILL BE RETURNED TO THE SITE AND REGRADOED OUTTO OPEN AREAS. POST SEEDING SEEDING, IF ANY, WILL BE DISPOSED OF IN AN ACCEPTABLE MANNER.
13. REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED, AND PREPARED FOR FINAL SEEDING AS FOLLOWS:
 - a. FOUR INCHES OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.
 - b. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 800 POUNDS PER 1,000 SQUARE FEET USING 10-20-20 (P-20S-20S) OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB PER 1,000 SQ. FT.).
 - c. FOLLOWING SEED BED PREPARATION, DITCHES AND BACK SLOPES WILL BE SEED TO A MIXTURE OF 47% CREeping RED FESCUE, 5% REDTOP, AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEED TO A PERMANENT TURF MIXTURE OF 44% KENTUCKY BLUEGRASS, 44% CREeping RED FESCUE, AND 12% PERENNIAL RYEGRASS. SEEDING RATE IS 1.03 LBS PER 1,000 SQ. FT.. LAWN QUALITY SOO MAY BE SUBSTITUTED FOR SEED. SEED MIX SHALL CONTAIN 10% ANNUAL RYE GRASS.
 - d. HAY MULCH AT THE RATE OF 70-80 LBS PER 1,000 SQUARE FEET OR A HYDRO-APPLICATION OF ASPHALT, WOOD OR PAPER FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE UNDER SUCH AS CURASOL OR RMB PLUS WILL BE USED ON HAY MULCH FOR WIND CONTROL.
14. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS ONCE THE SITE IS STABILIZED WITH 80% GRASS CATCH IN VEGETATED AREAS. TEMPORARY EROSION AND SEDIMENT CONTROL BLANKET SHALL BE USED IN ALL DITCHES AND SWALES AS SHOWN IN DETAILS.
15. WETLANDS WILL BE PROTECTED WITH EROSION CONTROL MIX OR SILT FENCE INSTALLED AT THE EDGE FOR THE WETLAND OR THE BOUNDARY OF WETLAND DISTURBANCE. ALL AREAS WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS DURING WINTER CONSTRUCTION.
16. ALL STORMWATER WILL BE PREVENTED FROM RUNNING ONTO STOCKPILES. SEDIMENT BARRIERS WILL BE INSTALLED DOWNGRADIENT OF ALL STOCKPILES.
17. PERMANENT POST-CONSTRUCTION BMPs (VEGETATED SWALES, WET PONDS, ETC.) WILL NOT BE USED TO MANAGE FLOWS DURING CONSTRUCTION WITHOUT SPECIAL PROTECTION AND/OR RESTORATION.

MULCH AND MULCH ANCHORING			
MULCH			
LOCATION	MULCH	RATE (1000 S.F.)	
PROTECTED AREA	STRAW OR HAY *	100 POUNDS	
WINDY AREAS	SHREDDED OR CHOPPED CONISTAKS STRAW OR HAY (ANCHORED) *	185-275 POUNDS 100 POUNDS	
MODERATE TO HIGH VELOCITY AREAS OR STEEP SLOPES (GREATER THAN OR EQUAL TO 3:1)	JUTE MESH OR EXCELOR MAT	AS REQUIRED AS REQUIRED	
* A HYDRO-APPLICATION OF WOOD, OR PAPER FIBER MAY BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER SUCH AS CURASOL OR RMB PLUS SHALL BE USED ON HAY MULCH FOR WIND CONTROL.			

MULCH ANCHORING			
ANCHOR MULCH WITH PEG AND TWINE (1 SQ. YD./BLOCK); MULCH NETTING (AS PER MANUFACTURER); WOOD CELLULOSE FIBER (750 LBS./ACRE); USE OF A SERIATED STRAIGHT DISK. NETTING FOR SMALL AREAS AND ROAD DITCHES MAY BE PERMITTED.			
Additional temporary seed mixture (for periods less than 12 months).			
Season	Seed	Rate	
Summer (5/15 - 8/15)	Sudangrass Oats	40 lbs./acre 80 lbs./acre	
Late Summer/Early Fall (8/15 - 9/15)	Premial Ryegrass	40 lbs./acre	
Fall (9/15 - 11/1)	Winter Rye	112 lbs./acre	
Winter (11/1 - 4/1)	Mulch w/ Dormant Seed	80 lbs./acre*	
Spring (4/1 - 7/1)	Oats	80 lbs./acre	
	Annual Ryegrass	40 lbs./acre	
*Seed Rate Only			



EROSION CONTROL MIX BERM
NTS

EROSION CONTROL DURING CONSTRUCTION

1. WINTER CONSTRUCTION PERIOD: OCTOBER 1 THROUGH APRIL 15
2. OVERWINTER STABILIZATION OF DITCHES AND CHANNELS:

ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15. ALL GRASS LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY SEPTEMBER 1. IF A DITCH OR CHANNEL IS NOT GRASS-LINED BY SEPTEMBER 1, THEN ONE OF THE FOLLOWING ACTIONS MUST BE TAKEN TO STABILIZE THE DITCH FOR LATE FALL AND WINTER.

 - A. INSTALL A STONE LINING IN THE DITCH:

ALL STONE-LINED DITCHES MUST BE PROPERLY INSTALLED SOO BY OCTOBER 1. PROPER INSTALLATION INCLUDES: PINNING THE SOO ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOO TO GUARANTEE CONTACT BETWEEN THE SOO AND UNDERLYING SOIL, WATERING THE SOO TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL, AND ANCHORING SOO AT THE BACK OF THE DITCH WITH JUTE OR PLASTIC MESH TO PREVENT THE SOO FROM SLOUGHING DURING FLOW CONDITIONS. SEE THE PERMANENT VEGETATION BMP SECTION.
 - B. INSTALL A STONE LINING IN THE DITCH:

A DITCH MUST BE LINED WITH STONE RIPRAP BY NOVEMBER 15. A REGISTERED PROFESSIONAL ENGINEER MUST BE HIRED TO DETERMINE THE STONE SIZE AND LINING THICKNESS NEEDED TO WITHSTAND THE ANTICIPATED STABILIZATION AT ANY ONE TIME. THE DEPARTMENT WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 15% TO BE A SLOPE. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1, THEN ONE OF THE FOLLOWING ACTIONS MUST BE TAKEN TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER. STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS. BY OCTOBER 1 THE DISTURBED SLOPE MUST BE SEED WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET AND THEN INSTALL EROSION CONTROL MATS OR ANCHORED MULCH OVER THE SEEDING. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE SLOPE BY NOVEMBER 1, THEN THE CONTRACTOR WILL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX OR WITH STONE RIPRAP AS DESCRIBED IN THE FOLLOWING STANDARDS.
3. OVERWINTER STABILIZATION OF DISTURBED SLOPES:

ALL STONE-COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15. ALL SLOPES TO BE VEGETATED MUST BE SEEDING AND MULCHED BY SEPTEMBER 1. THE DEPARTMENT WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 15% TO BE A SLOPE. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1, THEN ONE OF THE FOLLOWING ACTIONS MUST BE TAKEN TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER. STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS. BY OCTOBER 1 THE DISTURBED SLOPE MUST BE SEED WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET AND THEN INSTALL EROSION CONTROL MATS OR ANCHORED MULCH OVER THE SEEDING. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE SLOPE BY NOVEMBER 1, THEN THE CONTRACTOR WILL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX OR WITH STONE RIPRAP AS DESCRIBED IN THE FOLLOWING STANDARDS.

 - A. STABILIZE THE SOIL WITH SOO:

THE DISTURBED SLOPE MUST BE STABILIZED WITH PROPERLY INSTALLED SOO BY OCTOBER 1. PROPER INSTALLATION INCLUDES PINNING THE SOO ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOO TO GUARANTEE CONTACT BETWEEN THE SOO AND UNDERLYING SOIL, AND WATERING THE SOO TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.
 - B. STABILIZE THE SOIL WITH STONE RIPRAP:

ALL SLOPES MUST BE STABILIZED WITH STONE RIPRAP BY NOVEMBER 15. THE CONTRACTOR WILL NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GREATER THAN 15% (3H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE. SEE THE RIPRAP SLOPE STABILIZATION BMP SECTION.
 - C. STABILIZE THE SOIL WITH STONE RIPRAP:

PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE DEVELOPER'S OWNER WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY ON THE SLOPE AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP. SEE THE RIPRAP SLOPE STABILIZATION BMP SECTION.
4. OVERWINTER STABILIZATION OF DISTURBED SLOPES:

BY SEPTEMBER 15, ALL DISTURBED SLOPES ON AREAS HAVING A SLOPE LESS THAN 15% MUST BE SEEDING AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN ONE OF THE FOLLOWING ACTIONS MUST BE TAKEN TO STABILIZE THE SOIL FOR LATE FALL AND WINTER.

 - A. STABILIZE THE SOIL WITH TEMPORARY VEGETATION:

BY OCTOBER 1, SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET. LIGHTLY MULCH THE SEEDING SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. MONITOR GROWTH. BY THE NEXT 30 DAYS, IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE DISTURBED SOIL, BEFORE NOVEMBER 1, THEN MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED BELOW.
 - B. STABILIZE THE SOIL WITH SOO:

THE DISTURBED SLOPE MUST BE STABILIZED WITH PROPERLY INSTALLED SOO BY OCTOBER 1. PROPER INSTALLATION INCLUDES PINNING THE SOO ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOO TO GUARANTEE CONTACT BETWEEN THE SOO AND UNDERLYING SOIL, AND WATERING THE SOO TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.
 - C. STABILIZE THE SOIL WITH MULCH:

BY NOVEMBER 15, SEED THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. IMMEDIATELY AFTER SEEDING THE MULCH, ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.
5. STABILIZATION SCHEDULE BEFORE WINTER:

SEPTEMBER 15 ALL DISTURBED AREAS MUST BE SEEDING AND MULCHED.
OCTOBER 1 IF THE SLOPE IS STABILIZED WITH AN EROSION CONTROL BLANKET AND SEEDING, ALL DISTURBED AREAS TO BE PROTECTED WITH AN ANNUAL GRASS MUST BE SEEDING AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET AND MULCHED.
NOVEMBER 15 ALL STONE LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED.
6. DURING WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.
7. AREAS WITHIN 100 FEET OF STREAMS THAT ARE NOT STABILIZED WITH VEGETATION BY DEC. 1 SHALL BE MULCHED AND ANCHORED WITH NETTING. IF WORK CONTINUES IN THIS AREA DURING THE WINTER, A DOUBLE LINE OF SEDIMENT BARRIERS MUST BE USED.

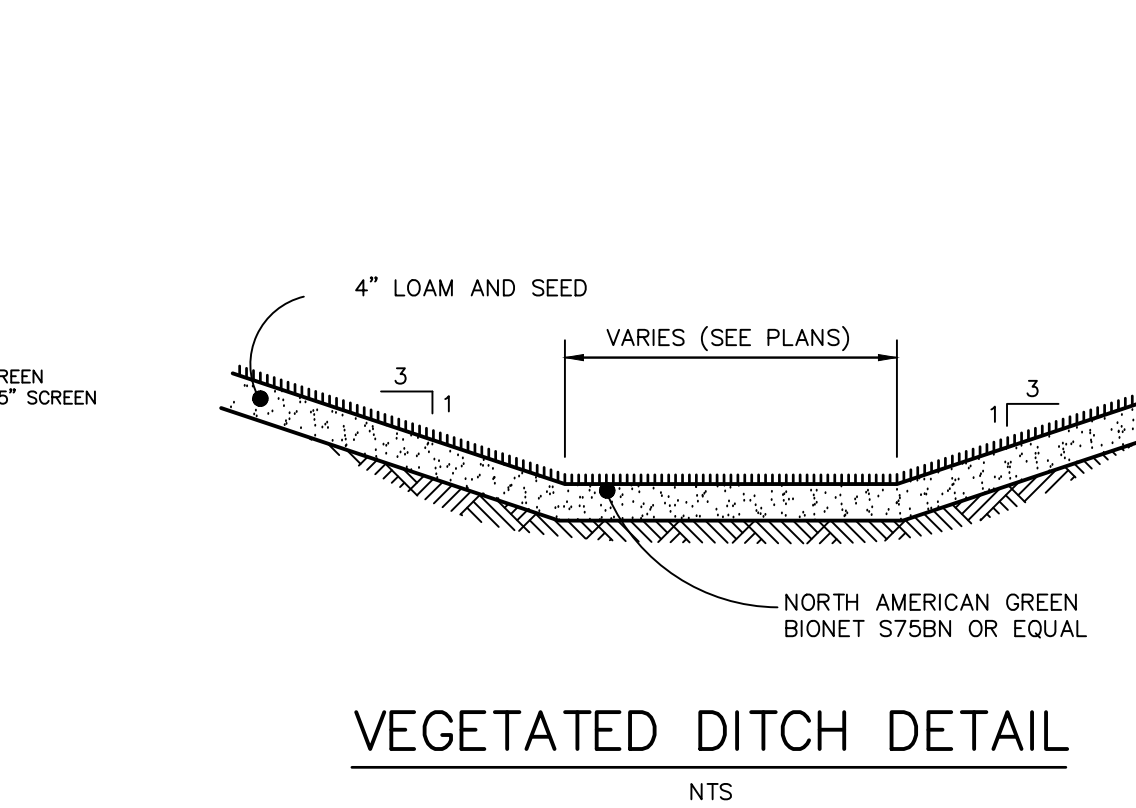
CONSTRUCTION INSPECTION AND MAINTENANCE

IF AN INSPECTION DETERMINES THAT A CORRECTIVE ACTION IS REQUIRED, THE ACTION OR REPAIR SHALL BE STARTED BY THE END OF THE NEXT WORKDAY AND COMPLETED WITHIN SEVEN DAYS OR BEFORE THE NEXT STORM EVENT. MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. ONCE A WEEK AND BEFORE AND AFTER EACH SIGNIFICANT RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, THE SITE INSPECTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES, IMPROVED AREAS, MATERIAL STORAGE AREAS AND VEHICLE ACCESS POINTS AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION. FOLLOWING THE TEMPORARY AND/OR FINAL INSPECTION, THE CONTRACTOR SHALL, IN THE SPRING, INSPECT AND REPAIR ANY DAMAGES AND/OR BARE SPOTS. AN ESTABLISHED VEGETATIVE COVER MEANS A MINIMUM OF 85 TO 90% OF AREAS VEGETATED WITH VIGOROUS GROWTH.

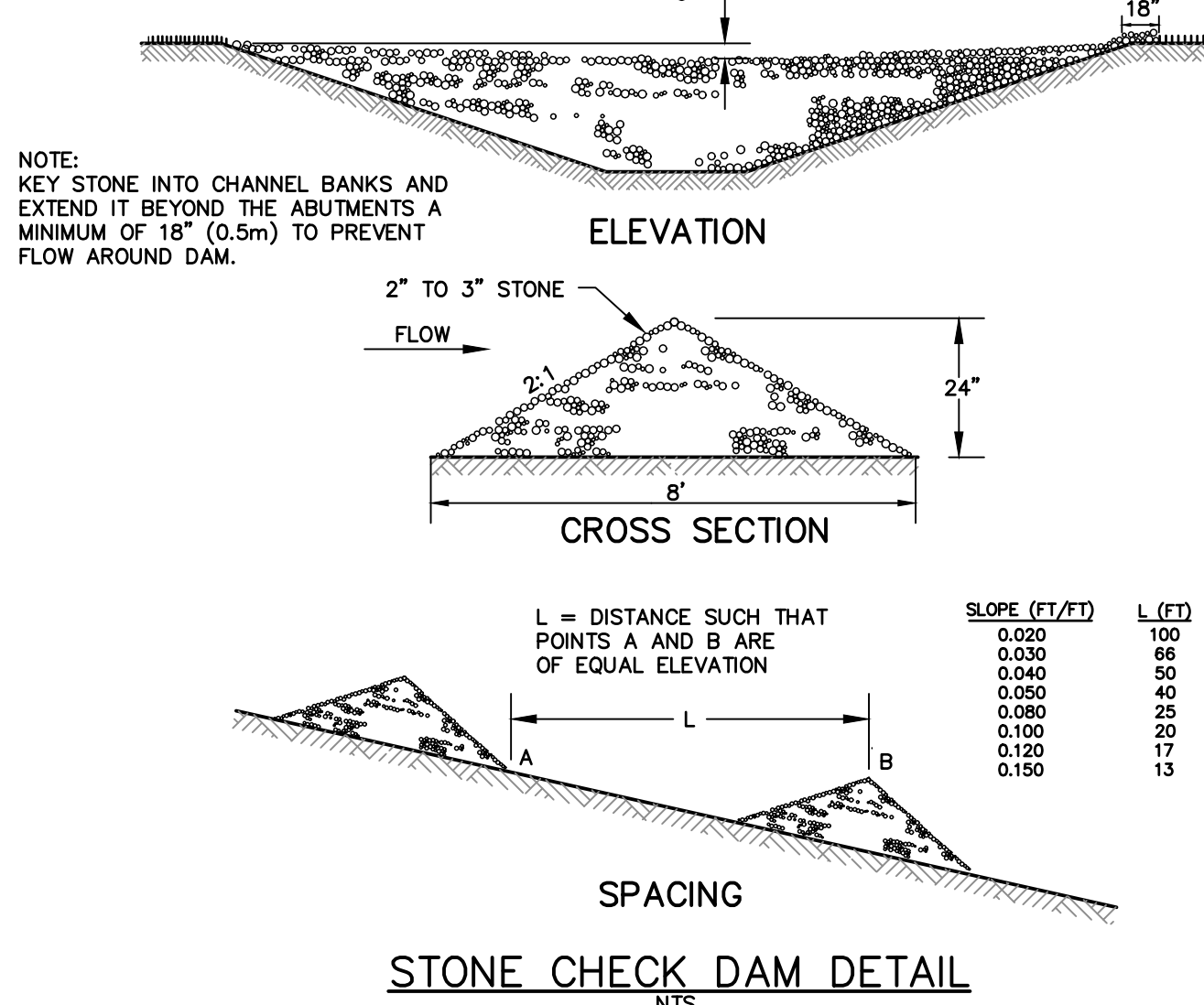
INSPECTION FORMS AND DOCUMENTATION OF CORRECTIVE ACTIONS SHALL BE MAINTAINED FOR A MINIMUM OF THREE YEARS.

ALL CONSTRUCTION INSPECTIONS SHALL BE CONDUCTED BY SOMEONE WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE STORMWATER PERMIT.

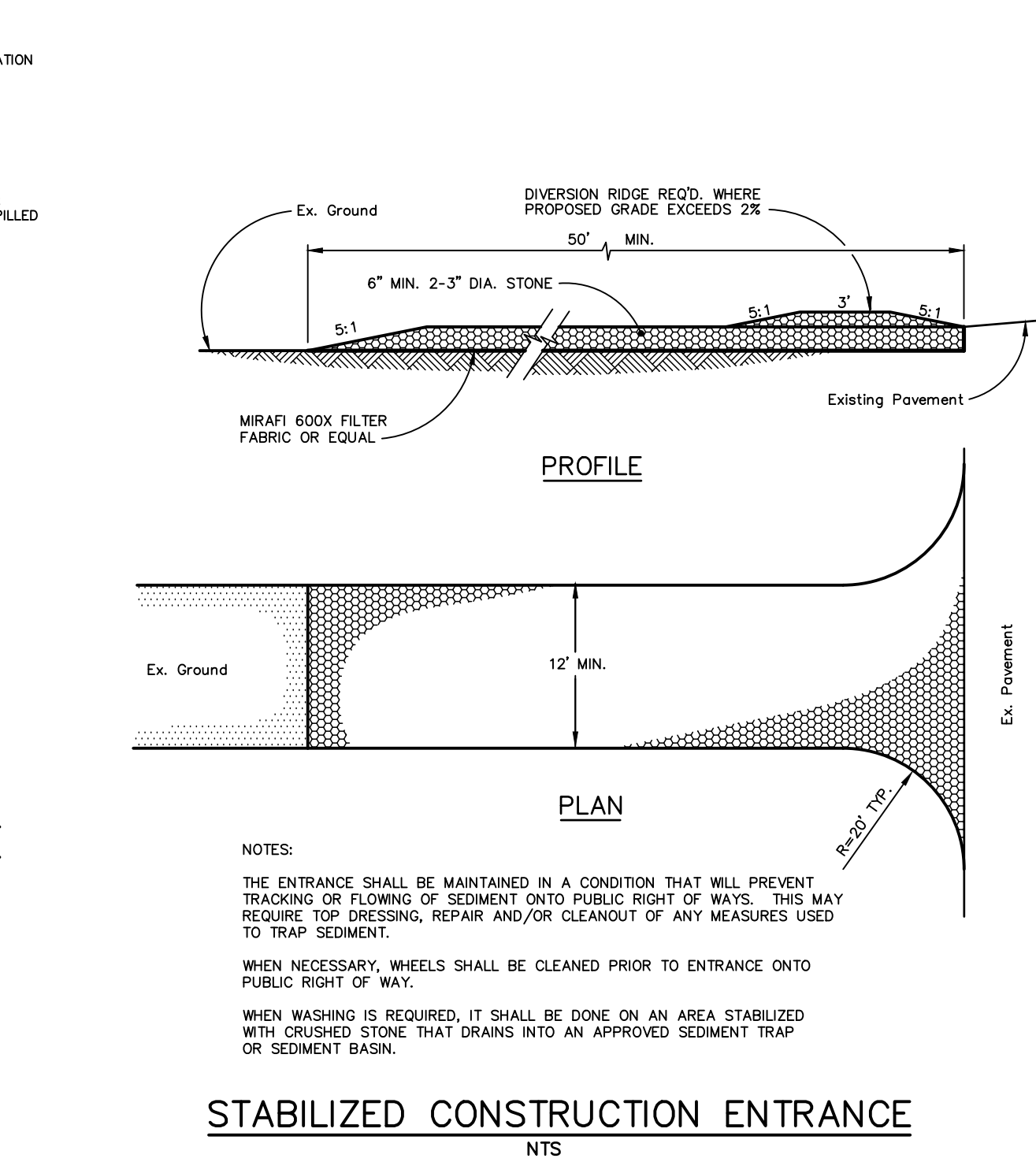
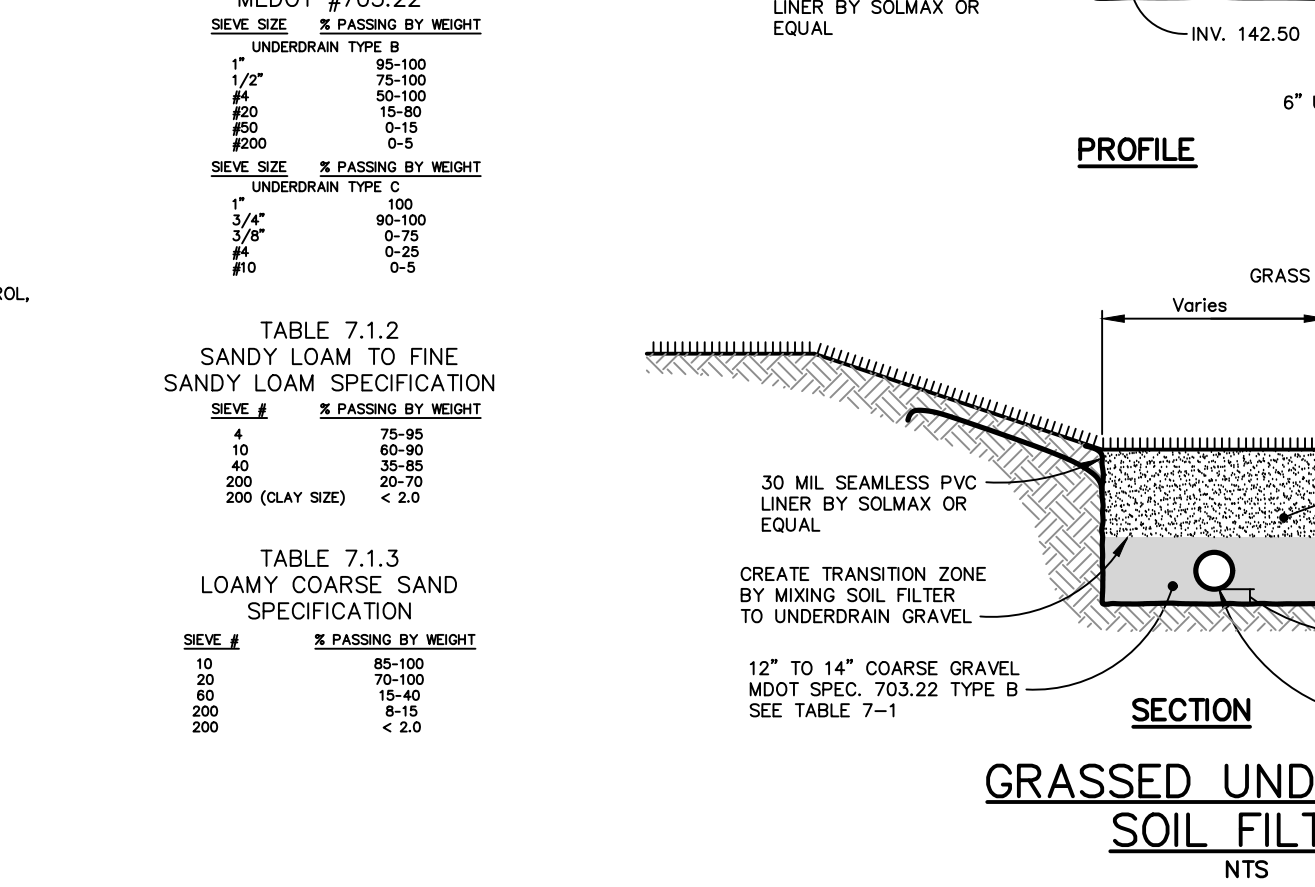
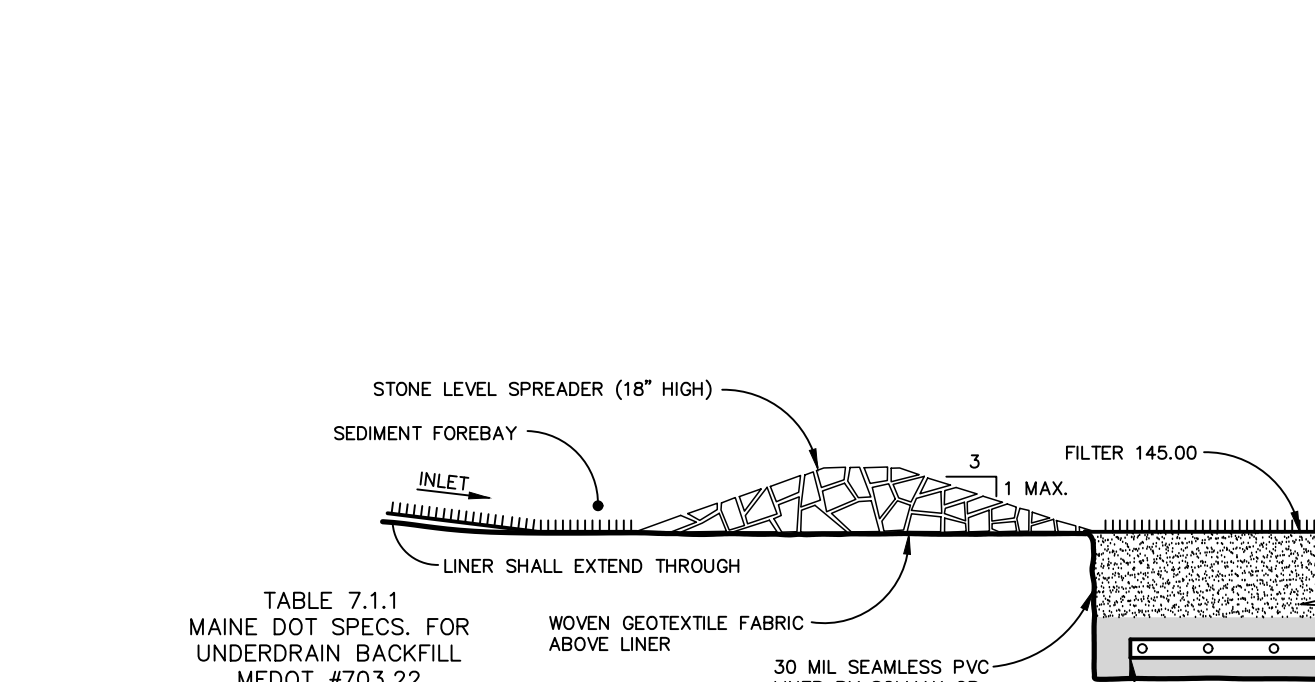
- HOUSEKEEPING
1. SPILL PREVENTION, CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION.
 2. GROUNDWATER PROTECTION, DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. IF 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, DITCHES, BERM, SWALES, AND OTHER FORMS OF SEDIMENT CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PROHIBITED STORAGE AND HANDLING OF THESE MATERIALS.
 3. FUGITIVE SEDIMENT AND DUST, ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. DUST MAY NOT BE USED FOR DUST CONTROL. ANY OFFSITE TRACKING OF MUD OR SEDIMENT SHALL BE VACUUMED IMMEDIATELY AND PRIOR TO THE NEXT SIGNIFICANT STORM EVENT.
 4. DEBRIS AND OTHER MATERIALS, LITTER, CONSTRUCTION DEBRIS, AND CHEMICALS EXPOSED TO STORMWATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.
 5. TRENCH OR FOUNDATION DE-WATERING, TRENCH DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT SITE CONSTRUCTION PRACTICES. THE COLLECTED WATER MUST BE REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, AND MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE. USE A COFFERDAM SEDIMENTATION BASIN AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.
 6. NON-STORMWATER DISCHARGES, IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES, WHERE ALLOWED APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:
 - DISCHARGES FROM PREFIGHTING ACTIVITY;
 - FIRE HYDRANT FLUSHINGS;
 - VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
 - DUST CONTROL RUNOFF IN TREATMENT TRENCHES AND APPENDIX (C)(3);
 - ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL THAT DOES NOT INVOLVE DETERGENTS;
 - PAVEMENT WASHWATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED, UNLESS ALL SPILLED MATERIAL HAS BEEN REMOVED) IF DETERGENTS ARE NOT USED;
 - UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
 - UNCONTAMINATED GROUNDWATER OR SPRING WATER;
 - FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED;
 - UNCONTAMINATED EXCAVATION DEWATERING (SEE REQUIREMENTS IN APPENDIX (C)(3));
 - POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS; AND
 - LANDSCAPE IRRIGATION.
 7. UNAUTHORIZED NON-STORMWATER DISCHARGES, THE DEPARTMENT'S APPROVAL UNDER THIS CHAPTER DOES NOT AUTHORIZE A DISCHARGE THAT IS MIXED WITH A SOURCE OF NON STORMWATER, OTHER THAN THOSE DISCHARGES IN COMPLIANCE WITH APPENDIX C (6). SPECIFICALLY, THE DEPARTMENTS APPROVAL DOES NOT AUTHORIZE DISCHARGES OF THE FOLLOWING:
 - WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
 - FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
 - SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
 - TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.
 8. ADDITIONAL REQUIREMENTS, ADDITIONAL REQUIREMENTS MAY BE APPLIED ON A SITE-SPECIFIC BASIS.



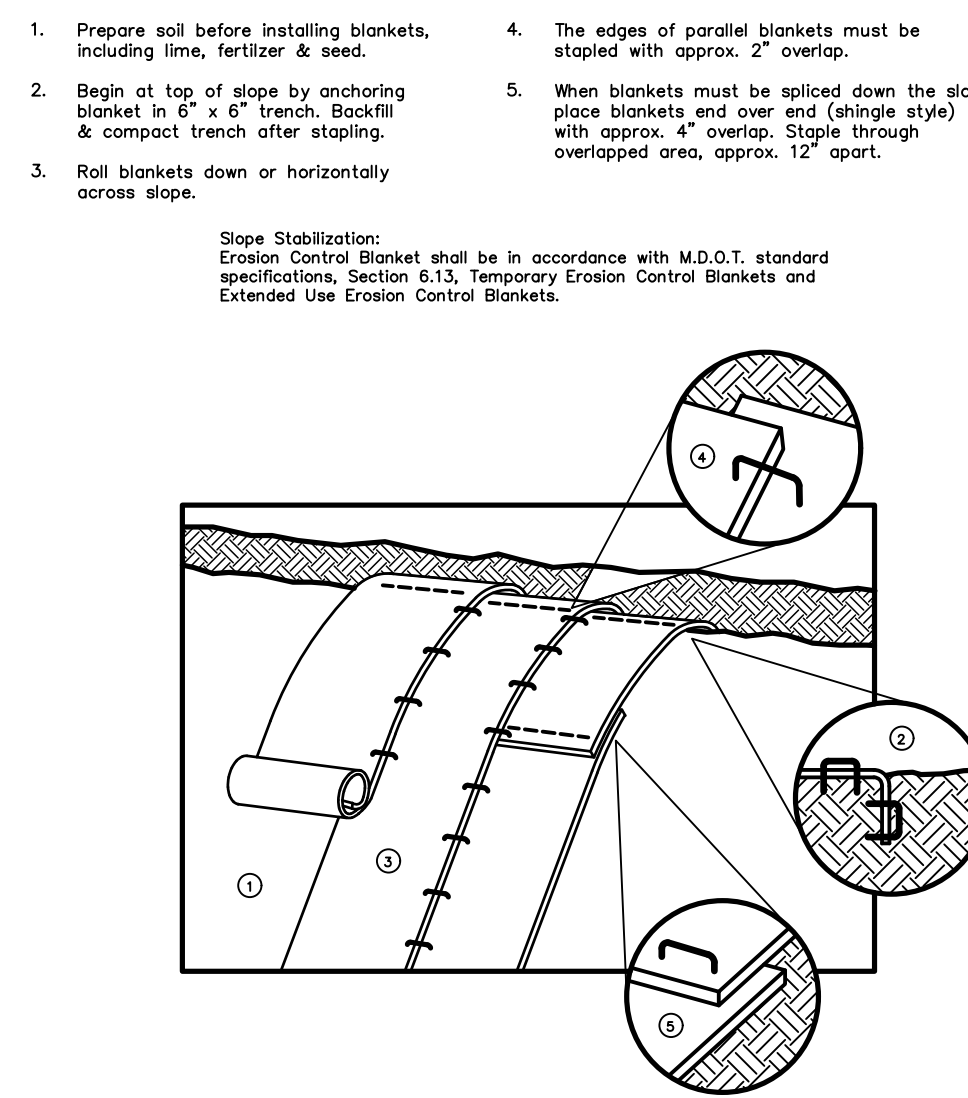
VEGETATED DITCH DETAIL
NTS



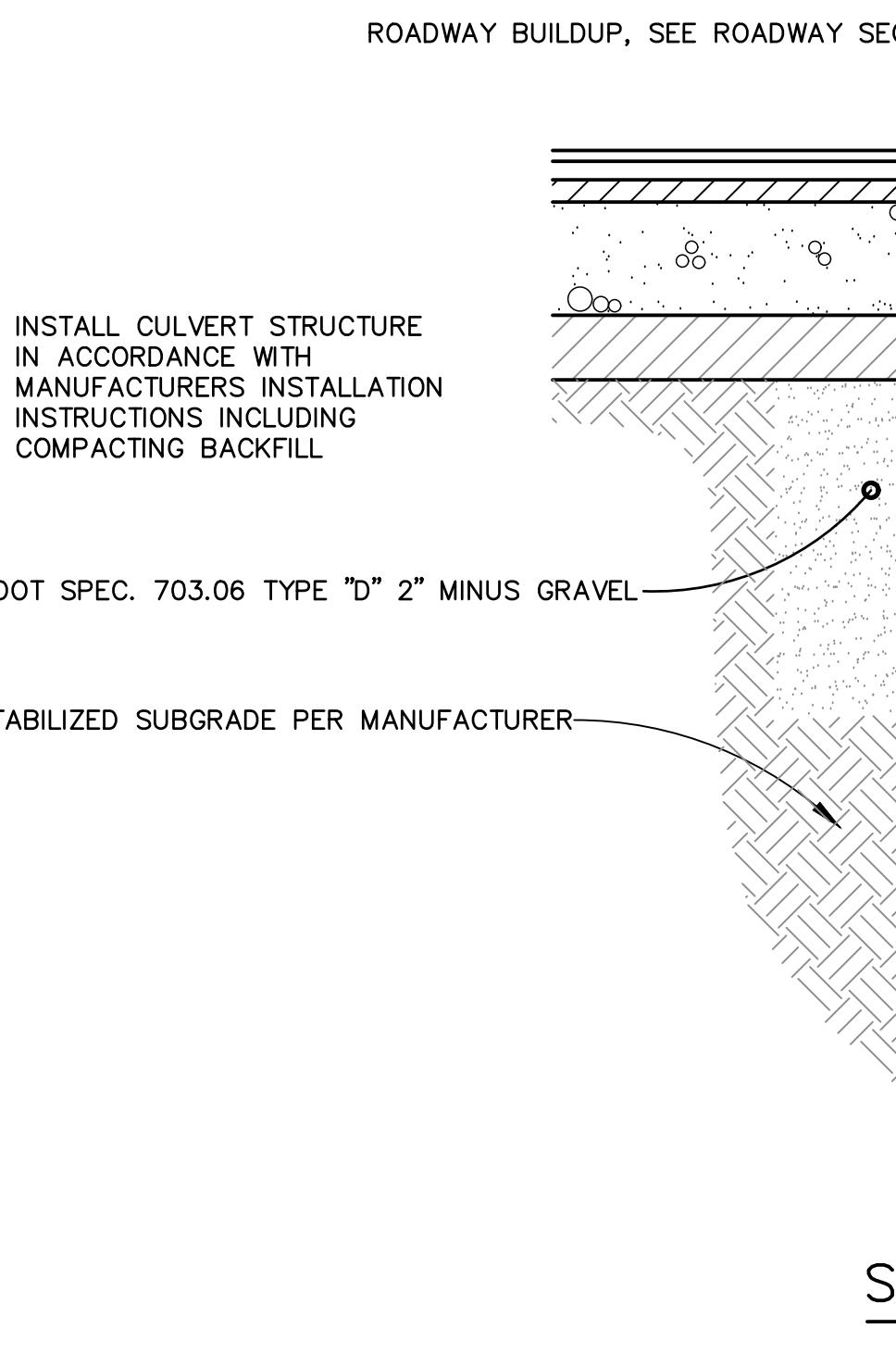
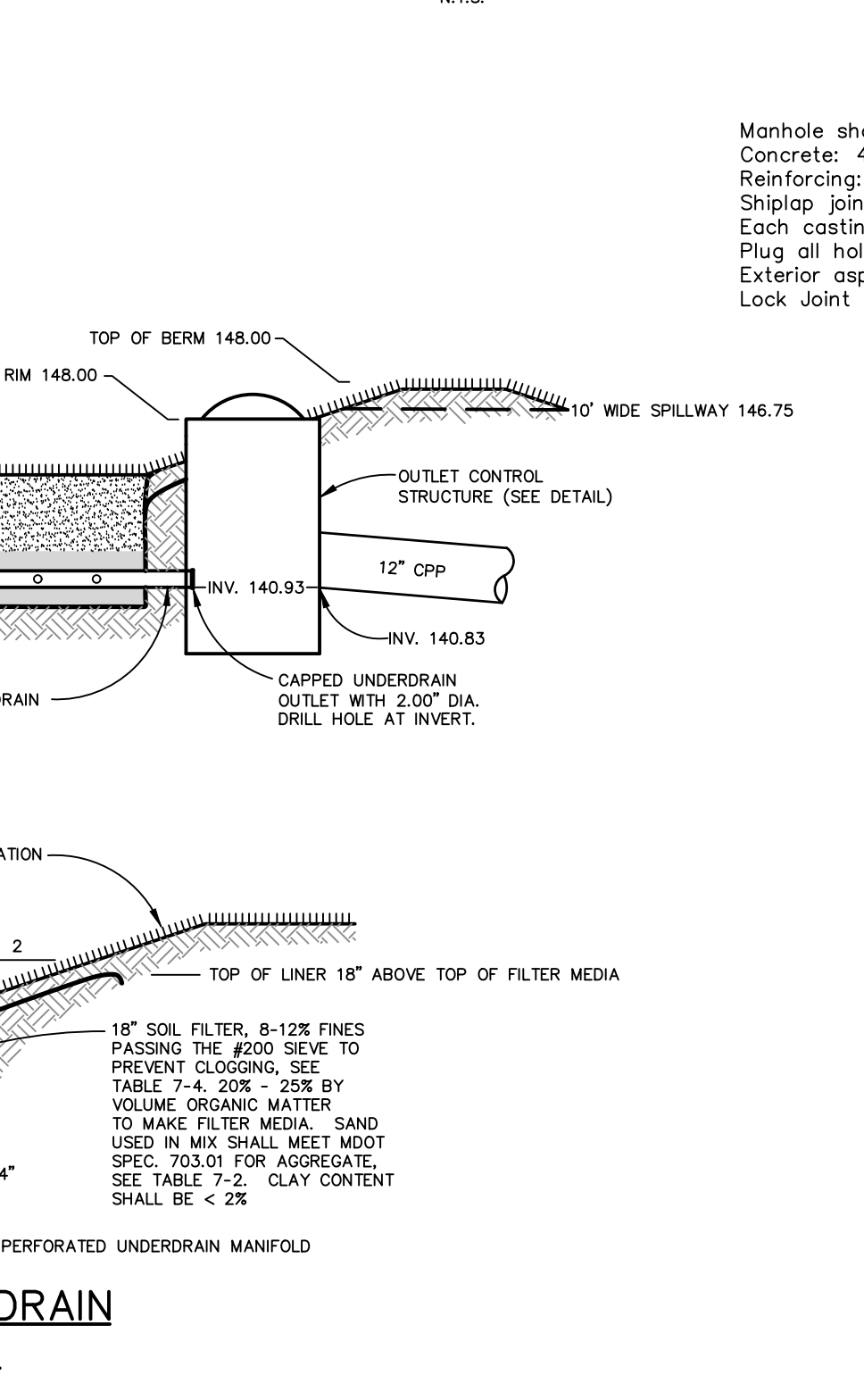
STONE CHECK DAM DETAIL
NTS



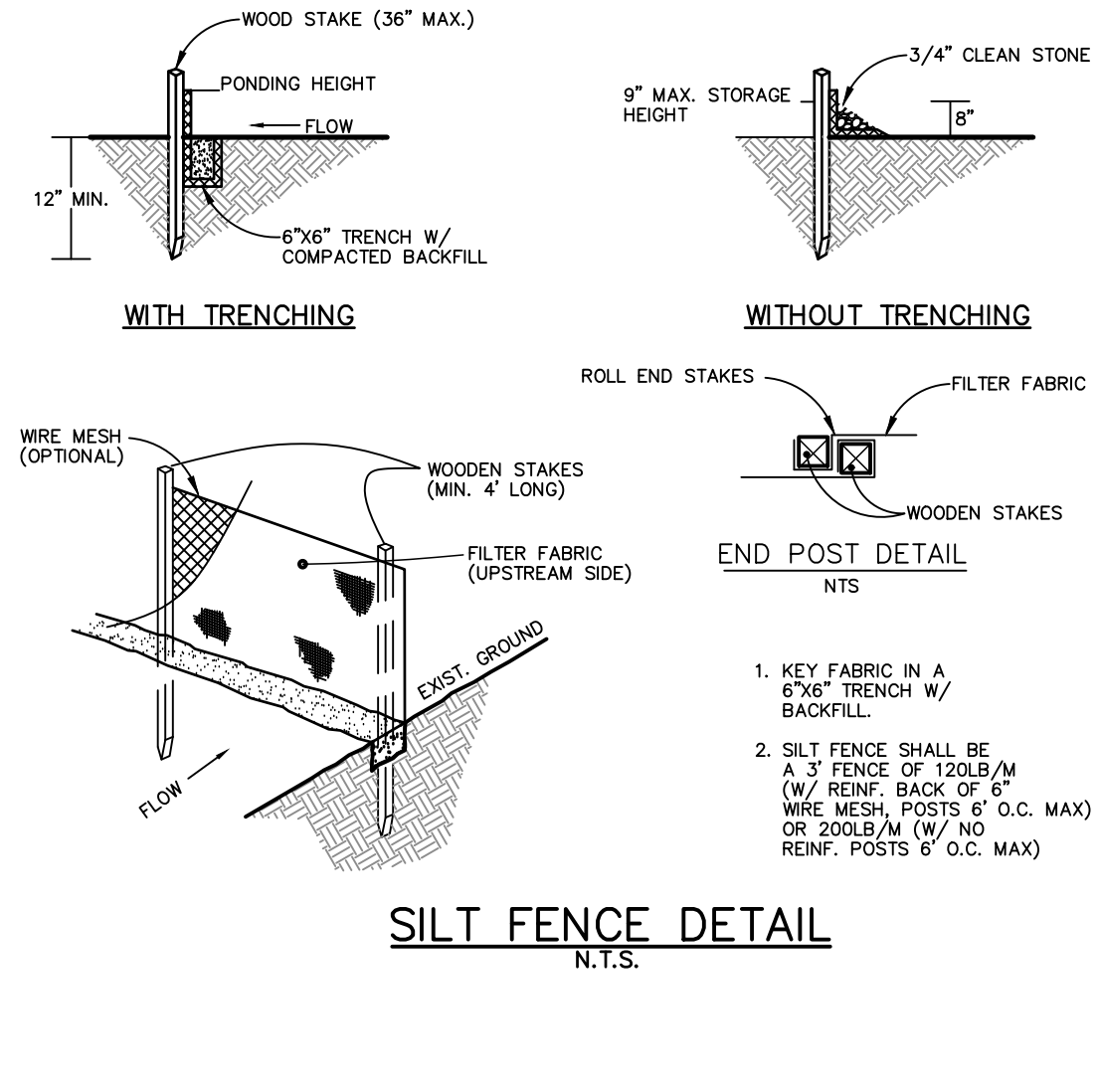
STABILIZED CONSTRUCTION ENTRANCE
NTS



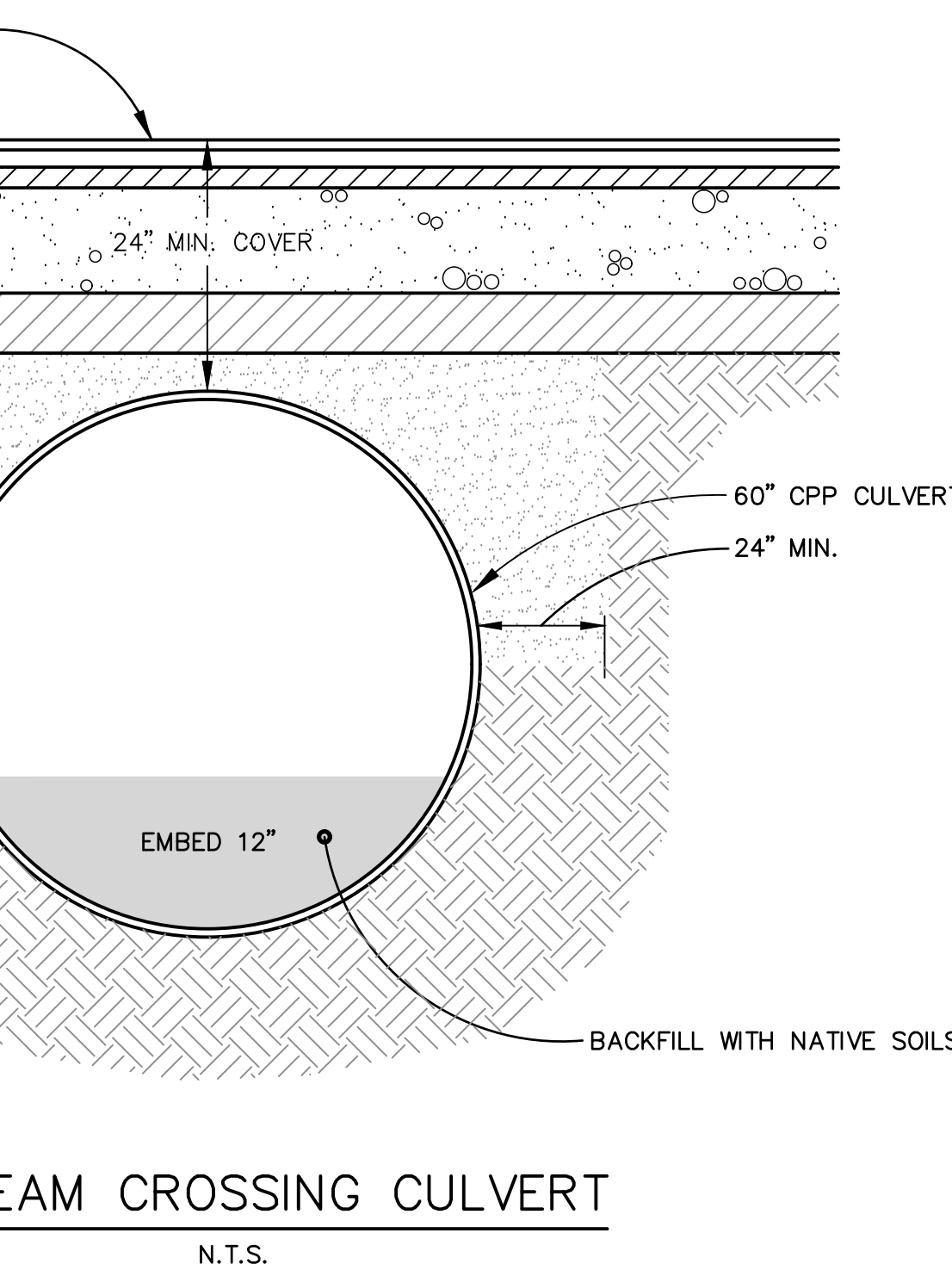
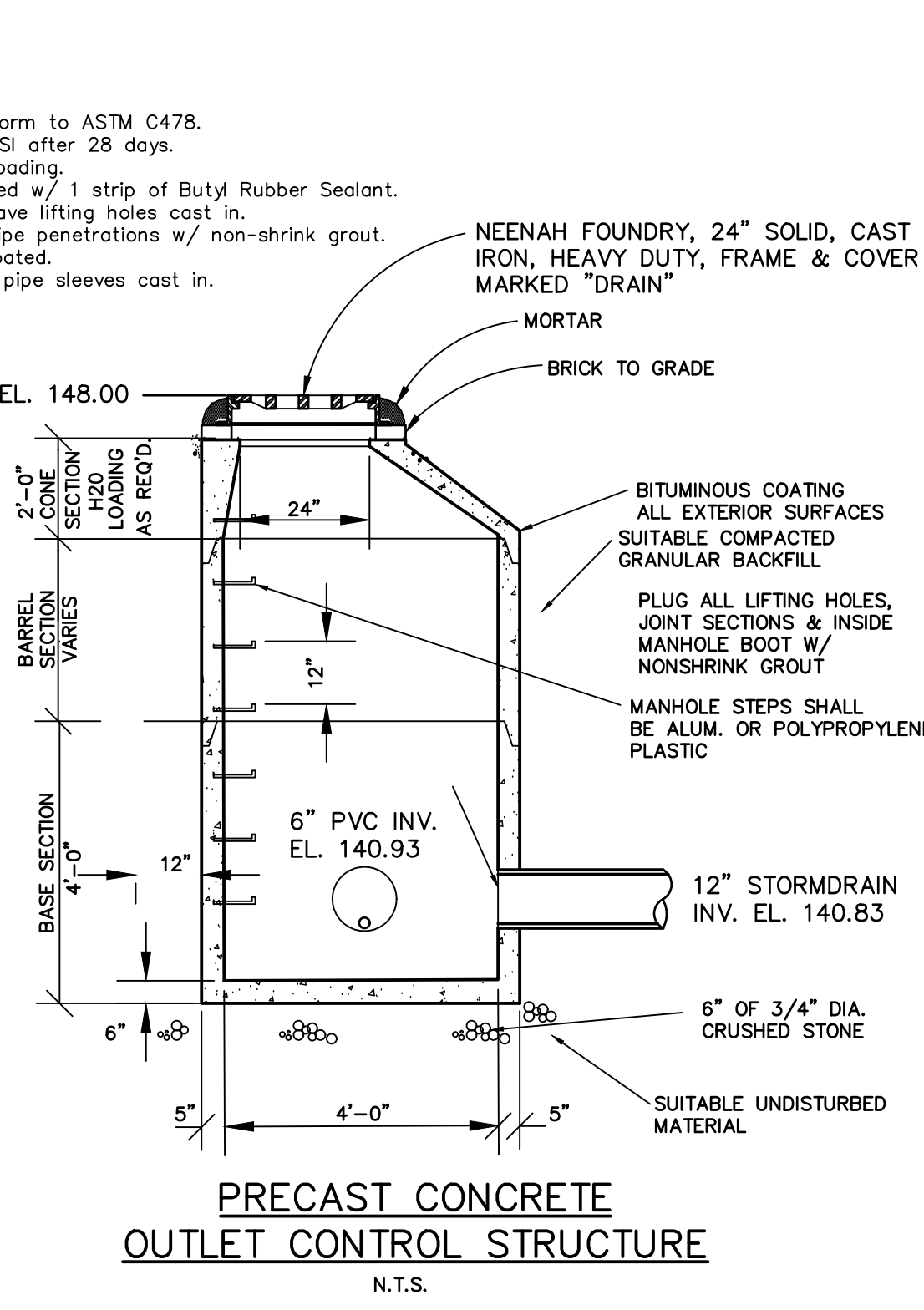
2:1 SLOPE STABILIZATION
DETAIL
NTS



STREAM CROSSING CULVERT
NTS

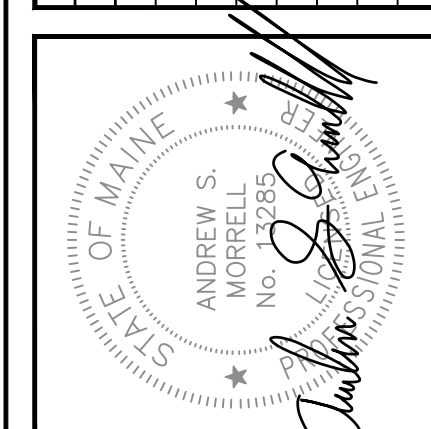


SILT FENCE DETAIL
NTS



STREAM CROSSING CULVERT
NTS

REVISION	DESCRIPTION	DATE	NO.
1	Preliminary Submission to City of Biddeford	3/15/23	1



BH2M

Berry, Huff, McDonald, Milligan Inc.
Engineers, Surveyors

380B Main Street
Biddeford, Maine 04005

Tel. (207) 839-2771
Fax (207) 839-8250

FOR
Brown Dog Carriers & Logistics
432 Elm Street
Biddeford, ME 04005

EROSION CONTROL DETAILS

BROWN DOG CARRIERS & LOGISTICS

PRECAST CONC. COVER OR H2O LOADING

DESIGNED	DATE
A. Fagan	Aug. 2022
DRAWN	SCALE
Dept.	1" = 40'
CHECKED	JOB. NO.
A. Morrell	21270

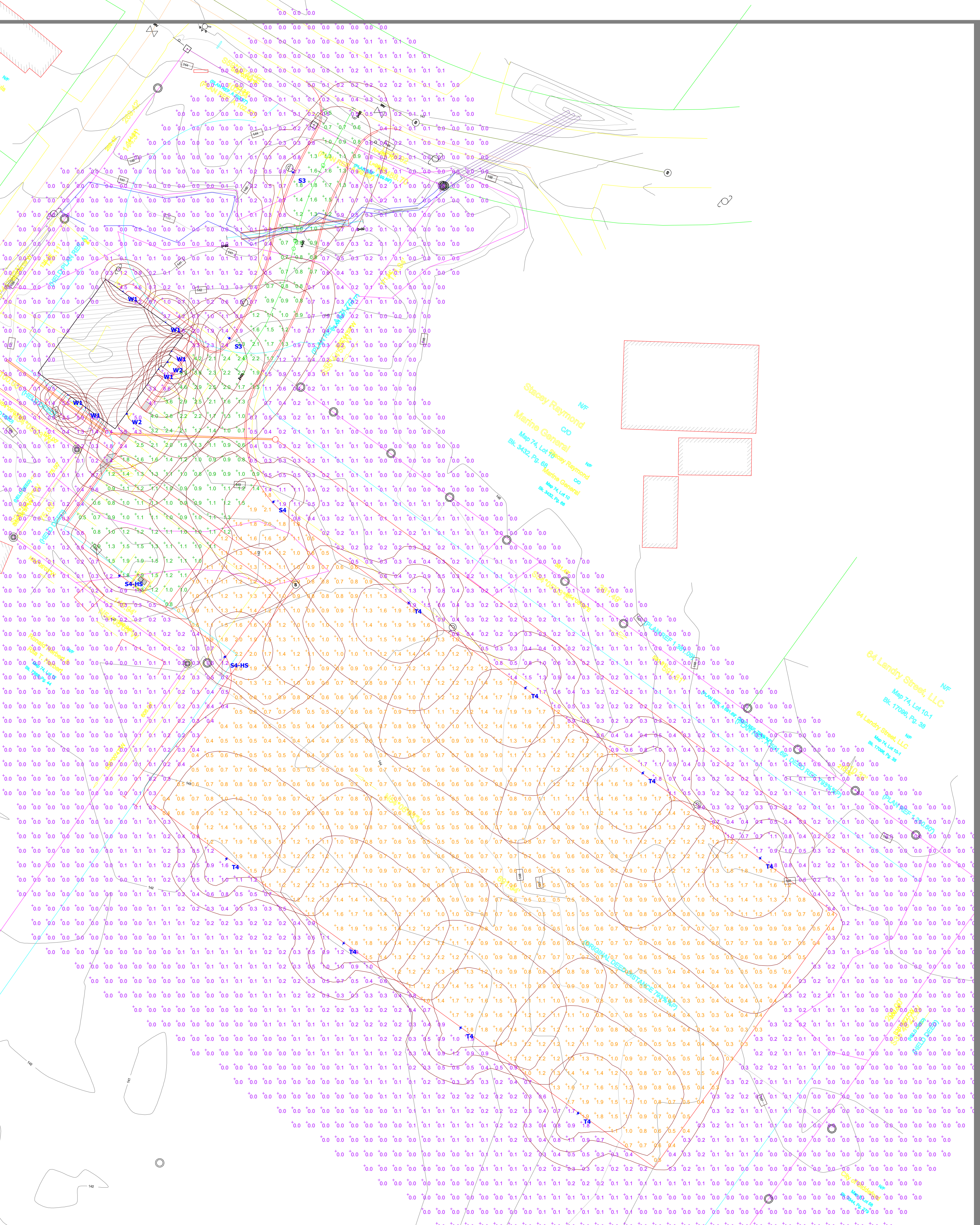
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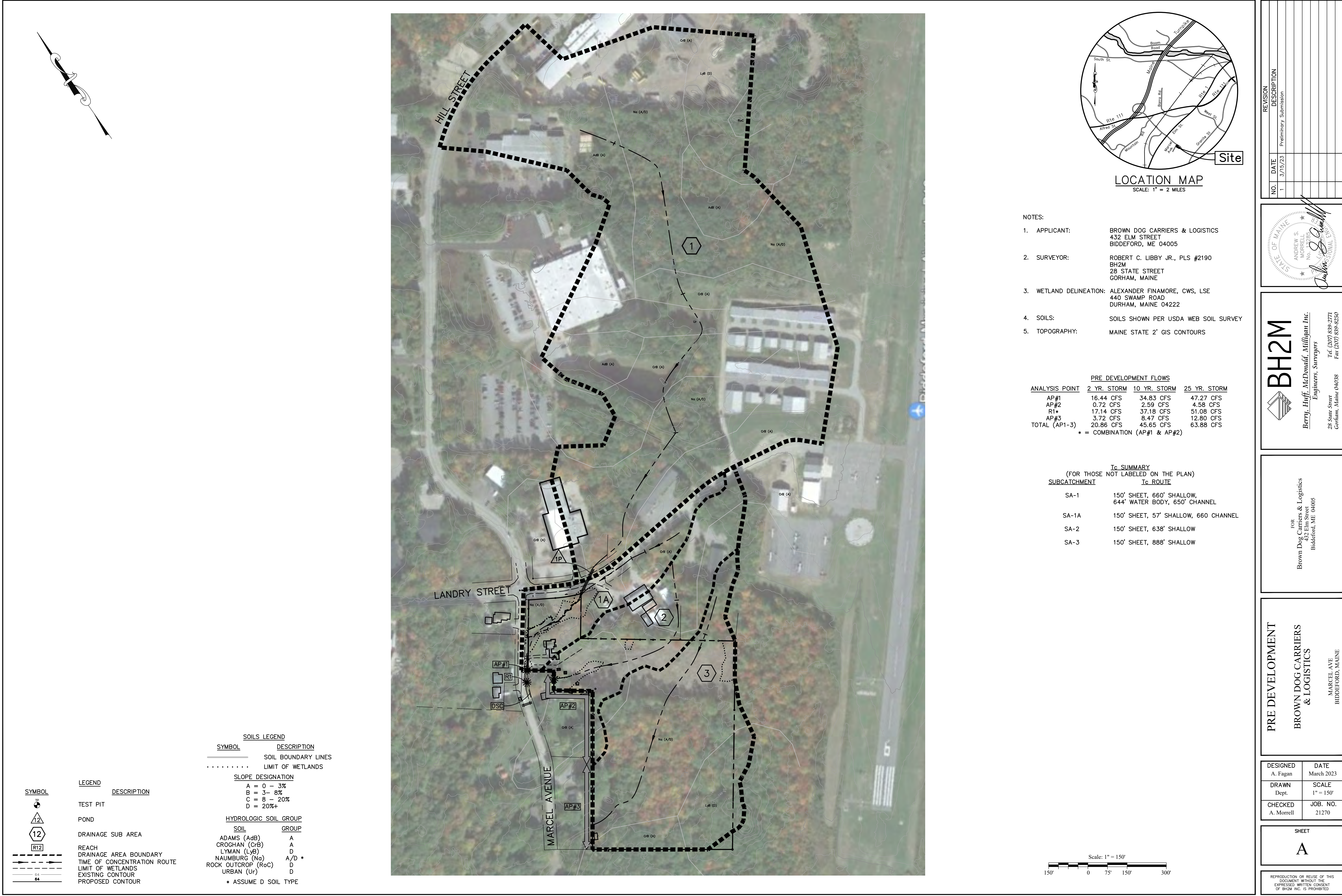
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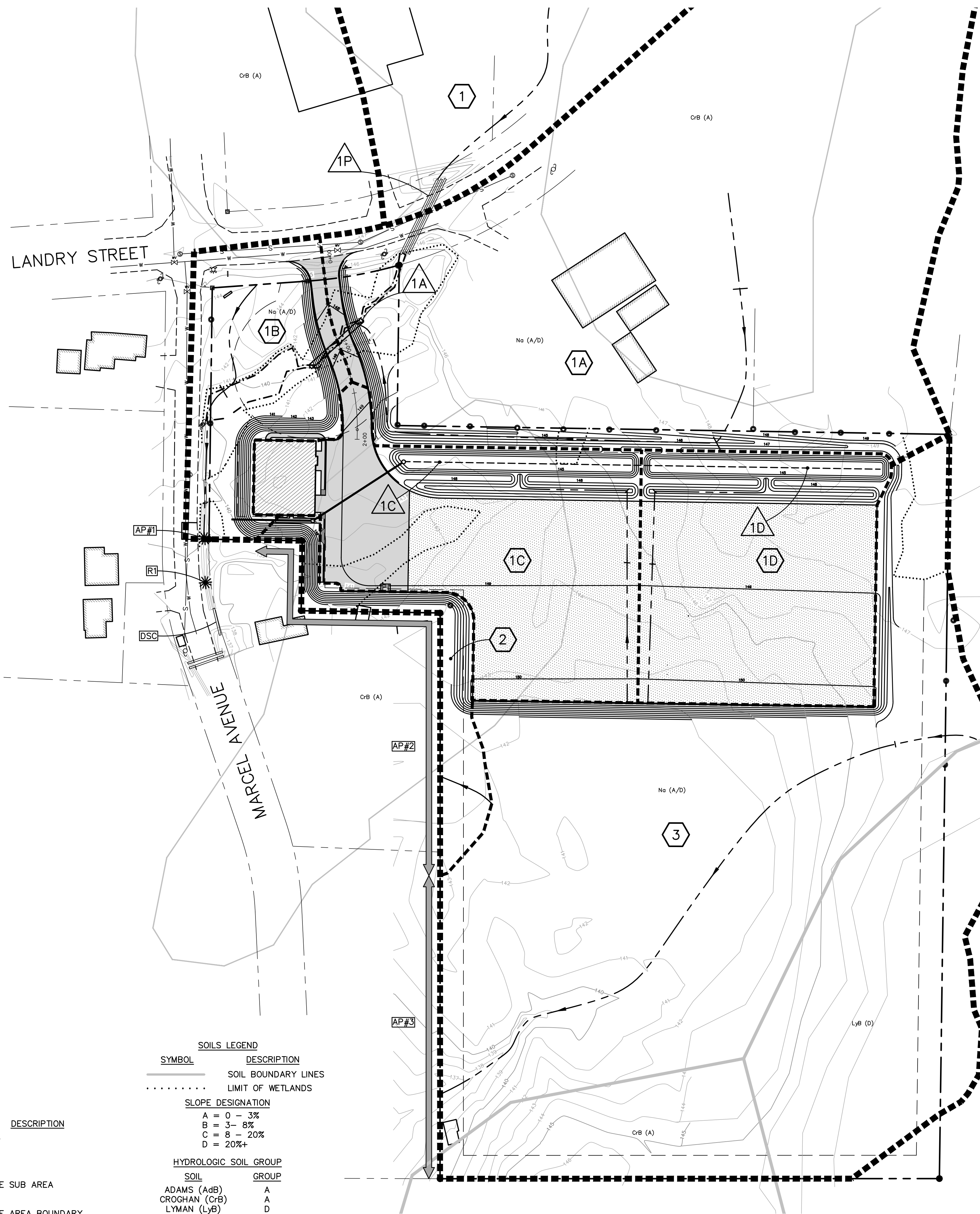
Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Driveway/Parking Lot	+	1.4 fc	8.3 fc	0.5 fc	16.6:1	2.8:1
Gravel Parking	+	1.0 fc	2.2 fc	0.3 fc	7.3:1	3.3:1
Outside of Parking Lot	+	0.2 fc	11.0 fc	0.0 fc	N/A	N/A

Schedule												
Symbol	Label	Image	QTY	Manufacturer	Catalog Number	Description	Lamp	Filename	Lumens per Lamp	LLF	Wattage	Distribut ion
	S3		2	Lithonia Lighting	DSX0 LED P4 30K 80CRI T3M MVOLT SPA DBBXD with SSS 20 4C DM19AS DBBXD	D-Series Size 0 Area Fixture; mounted at 22ft (20ft pole on 2ft base)	LED	DSX0_LED_P4_30K_80CRI_T3M.ies	9695	0.9	93.04	TYPE IV, MEDIUM, BUG RATING: B2 - U0 - G3
	S4		1	Lithonia Lighting	DSX0 LED P4 30K 80CRI TFTM MVOLT SPA DBBXD with SSS 20 4C DM19AS DBBXD	D-Series Size 0 Area Fixture; mounted at 22ft (20ft pole on 2ft base)	LED	DSX0_LED_P4_30K_80CRI_TFTM.ies	9908	0.9	93.04	TYPE IV, SHORT, BUG RATING: B2 - U0 - G3
	S4-HS		2	Lithonia Lighting	DSX0 LED P4 30K 80CRI TFTM HS MVOLT SPA DBBXD with SSS 20 4C DM19AS DBBXD	D-Series Size 0 Area Fixture with Houseside Shield; mounted at 22ft (20ft pole on 2ft base)	LED	DSX0_LED_P4_30K_80CRI_TFTM_HS.ies	8309	0.9	93.04	TYPE IV, SHORT, BUG RATING: B1 - U0 - G2
	T4		8	Lithonia Lighting	DSX0 LED P6 30K 80CRI TFTM MVOLT SPA DBBXD with SSS 25 4C DM19AS DBBXD	D-Series Size 0 Area Fixture; mounted at 28ft (25ft pole on 3ft base)	LED	DSX0_LED_P6_30K_80CRI_TFTM.ies	15253	0.9	137	TYPE IV, SHORT, BUG RATING: B2 - U0 - G4
	W1		6	Lithonia Lighting	WDGE1 LED P2 30K 80CRI VF MVOLT SRM DBBXD	WDGE1 LED WITH P2 - PERFORMANCE PACKAGE, 3000K, 80CRI, VISUAL COMFORT FORWARD OPTIC; mounted at 10ft	LED	WDGE1_LED_P2_30K_80CRI_VF.ies	1872	0.9	15.0178	TYPE II, VERY SHORT, BUG RATING: B1 - U0 - G0
	W2		2	Lithonia Lighting	WDGE3 LED P3 30K 80CRI R4 MVOLT SRM DBBXD	WDGE3 LED WITH P3 - PERFORMANCE PACKAGE, 3000K, 70CRI, TYPE 4 OPTIC; mounted at 20ft	LED	WDGE3_LED_P3_70CRI_R4_30K.ies	9548	0.9	71.6952	TYPE IV, SHORT, BUG RATING: B2 - U0 - G2

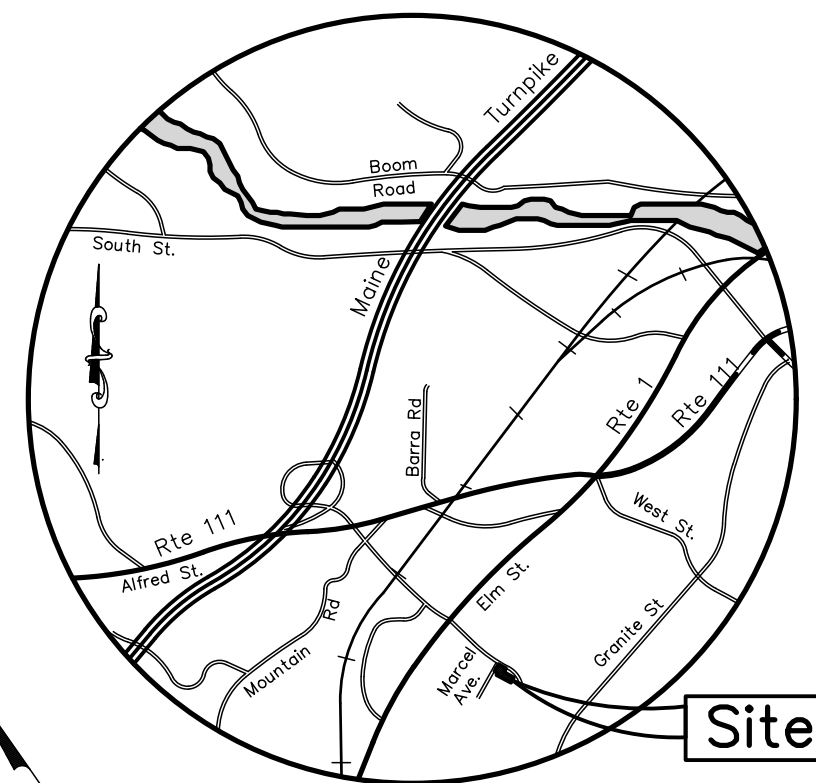






SOILS LEGEND	
SYMBOL	DESCRIPTION
---	SOIL BOUNDARY LINES
.....	LIMIT OF WETLANDS
SLOPE DESIGNATION	
A	= 0 - 3%
B	= 3 - 8%
C	= 8 - 20%
D	= 20%+
HYDROLOGIC SOIL GROUP	
SOIL	GROUP
ADAMS (AdB)	A
CROGHAN (CrB)	A
LYMAN (LyB)	D
NAUMBURG (Na)	A/D *
ROCK OUTCROP (RoC)	D
URBAN (Ur)	D
* ASSUME 'D' SOIL TYPE	

SYMBOL	DESCRIPTION
TP	TEST PIT
12	POND
12	DRAINAGE SUB AREA
R12	REACH
---	DRAINAGE AREA BOUNDARY
---	TIME OF CONCENTRATION ROUTE
---	LIMIT OF WETLANDS
---	EXISTING CONTOUR
---	PROPOSED CONTOUR



NOTES:

1. APPLICANT: BROWN DOG CARRIERS & LOGISTICS
432 ELM STREET
BIDDEFORD, ME 04005
2. SURVEYOR: ROBERT C. LIBBY JR., PLS #2190
BH2M
28 STATE STREET
GORHAM, MAINE
3. WETLAND DELINEATION: ALEXANDER FINAMORE, CWS, LSE
440 SWAMP ROAD
DURHAM, MAINE 04222
4. SOILS: SOILS SHOWN PER USDA WEB SOIL SURVEY
5. TOPOGRAPHY: MAINE STATE 2' GIS CONTOURS

ANALYSIS POINT	POST DEVELOPMENT FLOWS FLOW RATE = POST (PRE)		
	2 YR. STORM	10 YR. STORM	25 YR. STORM
AP#1	17.81 (16.44) CFS*	38.67 (34.83) CFS*	52.49 (47.27) CFS*
AP#2	0.02 (0.72) CFS	0.17 (2.59) CFS	0.38 (4.58) CFS
R1**	17.82 (17.14) CFS*	38.72 (37.18) CFS*	52.58 (51.08) CFS*
AP#3	2.88 (3.72) CFS	6.55 (8.47) CFS	9.88 (12.80) CFS
TOTAL (AP1-3)	20.70 (20.86) CFS	45.27 (45.65) CFS	62.46 (63.88) CFS

* = INCREASE IN POST DEVELOPMENT FLOW RATE
(SEE SUMMARY IN STORMWATER REPORT - SECTION 1.9)
** = COMBINATION (AP#1 & AP#2)

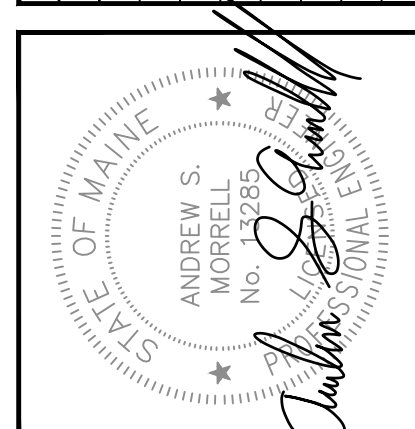
Tc SUMMARY (FOR THOSE NOT LABELED ON THE PLAN)	
SUBCATCHMENT	Tc ROUTE
SA-1	150' SHEET, 660' SHALLOW, 644' WATER BODY, 650' CHANNEL
SA-1A	150' SHEET, 125' SHALLOW, 476' CHANNEL
SA-1B	127' SHEET, 164' CHANNEL
SA-1C	150' SHEET, 73' SHALLOW, 128' CHANNEL
SA-1D	150' SHEET, 74' SHALLOW, 132' CHANNEL
SA-2	64' SHEET
SA-3	150' SHEET, 644' SHALLOW

Subcatchment ID	Proposed Impervious Area (sf)	Proposed Landscaped Area (sf)	Proposed Developed Area (sf)	Existing Impervious Area (sf)	Existing Landscaped Area (sf)	Treated Impervious Area (sf)	Treated Developed Area (sf)	BMP ID
1	0	0	0	762,223	916,617	0	0	None
1A	2,360	3,586	5,966	110,030	172,030	0	0	None
1B	2,736	6,847	9,583	9,954	24,916	0	0	None
1C	67,097	14,852	81,749	0	0	67,097	81,749	Filter A
1D	54,637	14,477	69,114	0	0	54,637	69,114	Filter B
2	265	7,060	7,325	0	10,267	0	0	None
3	0	11,524	11,524	0	294,949	0	0	None
Total	127,115	68,146	185,261	878,207	1,418,779	121,734	150,863	

New Development Treatment Summary	
Total Proposed Impervious Area (sq. ft.) =	127,115
Total Proposed Developed Area (sq. ft.) =	185,261
* Total Treated Impervious Area (sq. ft.) =	123,548
* Total Treated Developed Area (sq. ft.) =	153,971
Impervious Area Treatment % =	97.19%
Developed Area Treatment % =	83.11%

* A treatment credit of 1,814 sf of impervious area and 3,108 sf of developed area has been considered for the entrance road wetland impacts per section 4 (5)(e) of Chapter 500

NO.	DATE	REVISION	DESCRIPTION
1	3/15/23		Preliminary Submission



BH2M
Berry, Huff, McDonald, Milfigan Inc.
Engineers, Surveyors
28 State Street
Gorham, Maine 04038
Tel. (207) 839-2771
Fax (207) 839-8250

FOR
Brown Dog Carriers & Logistics
432 Elm Street
Biddeford, ME 04005

POST DEVELOPMENT
BROWN DOG CARRIERS
& LOGISTICS
MARCEL AVE
BIDDEFORD, MAINE

DESIGNED A. Fagan	DATE March 2023
DRAWN Dept.	SCALE 1" = 60'
CHECKED A. Morrell	JOB. NO. 21270

SHEET
B
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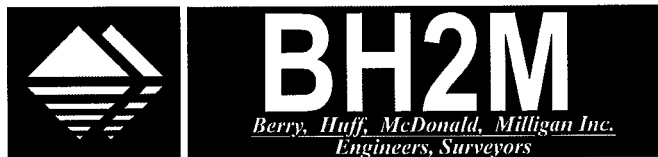
STORMWATER MANAGEMENT REPORT

Brown Dog Carriers & Logistics
Landry Street
Biddeford, Maine

Submitted by:

Brown Dog Carriers & Logistics
432 Elm Street
Biddeford, Maine 04005

Prepared by:



Date:
March 2023

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APPENDIX B	SOILS REPORT
APPENDIX C	PRE DEVELOPMENT CALCULATIONS
APPENDIX D	POST DEVELOPMENT CALCULATIONS
APPENDIX E	WATER QUALITY CALCULATIONS
APPENDIX F	ANALYSIS OF DOWNSTREAM DITCH (REACH 1)
APPENDIX G	TEST PIT INFORMATION
APPENDIX H	INSPECTION AND MAINTENANCE MANUAL

1.0 **INTRODUCTION**

Brown Dog Carriers & Logistics is proposing to construct an office building and gravel parking and storage area on an 11.62 acre parcel located at the corner of Landry Street and Marcel Avenue in Biddeford (Map 74, Lots 10-2, 11, & 14).

The scope of work includes but is not limited to:

- Construction of a paved access drive and employee parking area
- Construction of a gravel parking and storage area
- Construction of an office building
- Extension of municipal utilities for water, sewer, electrical and communications
- Construction of stormwater management facilities

The proposed infrastructure improvements will create approximately 127,115 sf (2.91 acres) of impervious area and 58,146 sf (1.33 acres) of landscaped area totaling 185,261sf (4.25 acres) of developed area for the project.

In accordance with the City of Biddeford code requirements, the Stormwater Management Plan has been prepared to satisfy the requirements of the Maine Department of Environmental Protections “Stormwater Management Rules” Chapters 500, 501 and 502 as well as the most recent version of the “Maine Stormwater Best Management Practices Manual”. Per the post construction stormwater discharge management standards of the City code, the proposed project will need to meet quality and quantity standards of Chapter 500, requiring meeting the Basic, General, and Flooding Standards.

1.1 **OVERVIEW OF MODELING METHODOGY AND SOURCE INFORMATION**

Hydrologic Analysis: The pre and post development conditions have been modeled using modeling software (Hydrocad Version 10) which is based upon the methodology contained within the USDA Soil Conservation Service Technical Release 55. Type III 24-hour storm distributions for York County were used for the analysis. The following frequencies and 24-hour rainfall depths were used for the analysis:

Return Period	24-Hour Rainfall Depth
2-Year Storm	3.30 inches
10-Year Storm	4.90 inches
25-Year Storm	6.20 inches

Soils: The soils boundaries used for the stormwater analysis were digitized from the Natural Resource Conservation Service (NRCS), web soil survey website. The source of the data is the York County Soil Survey (Class D). Refer to the following for additional documentation regarding the soils used for modeling:

- Appendix B of this Report
- Pre and Post Development Watershed Plans (Sheets A and B)

Soil Map Unit	Unit Description	Hydrologic Soil Group*
AdB	Adams loamy sand, 0-8% slopes	A
CrB	Croghan loamy fine sand, 0-8% slopes	A
LyB, LyC	Lyman-Rock outcrop complex, 3-15% slopes	D
Na	Naumburg sand	A/D*
RoE	Rock outcrop-Lyman complex, 15-80% slopes	D*
Ur	Urban Land	D

*Assumed as D

Boundary Survey: Field survey by BH2M

Topography: Onsite: On Ground Topography by BH2M
Offsite: LIDAR data from the Maine Office of GIS

Natural Resources: Wetland delineations performed by Mainely Soils

1.2 **DESCRIPTION OF POINTS OF ANALYSIS**

The watershed model analyzes the discharge of runoff at four Analysis Points as described below:

Analysis Point #1

Description: Ditch along Marcel Ave. at the property boundary.

Pre-Development Tributary Drainage Area: 41.997 acres

Post Development Tributary Drainage Area: 49.545 acres

Analysis Point #2

Description: Flow to the westerly downstream abutter flowing to Marcel Ave.

Pre-Development Tributary Drainage Areas: 5.303 acres

Post Development Tributary Drainage Areas: 0.404 acres

Reach #1

Reach 1 is a combination of flows from analysis point 1 and 2. This reach shows what flow rates will be at the 24" RCP driveway culvert of the abutting property since analysis points 1 and 2 meet just upstream of this location.

Analysis Point #3

Description: Flow to the south-westerly downstream abutter.

Pre-Development Tributary Drainage Areas: 9.685 acres

Post Development Tributary Drainage Areas: 7.036 acres

1.3 PRE DEVELOPMENT CONDITIONS

The Existing Conditions are shown on sheet 2 and sheet A of the accompanying plans. The project located at the corner of Landry Street and Marcel Avenue in Biddeford and is bounded by industrial properties to the north and east, undeveloped wooded areas to the south, and residential land to the west. The parcel lies within the watershed of an unnamed stream that is tributary to Thatcher Brook which is an urban impaired stream.

The watershed that was analyzed for this project is approximately 57 acres. The analysis points are located along the western boundary of the parcel and are described in Section 1.2 of this report.

The Pre Development Stormwater plans are included as Sheet A of the accompanying plans and the Calculations are attached as Appendix B.

The Pre Development Watershed Model predicts the following peak flow rates:

Pre-Development Peak Flows (cu. ft./sec)			
Analysis Point	2-Year	10-Year	25-Year
AP-1	16.44	34.83	47.27
AP-2	0.72	2.59	4.58
Reach 1 – Combination (AP1 & 2)	17.14	37.18	51.08
AP-3	3.72	8.47	12.80
Total (AP1-3)	20.86	45.65	63.88

1.4 POST DEVELOPMENT CONDITIONS

The proposed project will include development of a paved access road, employee parking, an office building, a gravel parking and storage area, and stormwater treatment facilities. Below is a summary of the proposed impervious area for full build-out of the project.

Proposed Impervious Area	=	127,115 sf
Proposed Lawn Area	=	58,146 sf
Proposed Developed Area	=	185,261 sf

The proposed project will include two Grassed Underdrain Soil Filters to provide water quality treatment and attenuation of peak flows for portions of the project.

The Post Development Drainage Plan is included as Sheet B of the accompanying plan set and the Calculations are attached as Appendix D.

The Post-Development Watershed Model predicts the following peak flow rates:

Post Development Peak Flows (cu. ft./sec)			
Analysis Point	2-Year	10-Year	25-Year
AP-1	17.81	38.67	52.49
AP-2	0.02	0.17	0.38
Reach 1 – Combination (AP1 & 2)	17.82	38.72	52.58
AP-3	2.88	6.55	9.88
Total (AP1-3)	20.70	45.27	62.46

1.5 **BASIC STANDARDS**

The proposed project is required to meet the Basic Standards. To meet the Basic Standards the project design must demonstrate that the erosion and sedimentation control, inspection and maintenance, and housekeeping standards specified in Appendices A, B, and C of 06-096 Chapter 500 are met, and that the grading or other construction activity will not impede or otherwise alter drainageways so as to have an unreasonable adverse impact on a wetland or waterbody, or an adjacent downslope parcel.

The proposed project will provide temporary (during construction) BMP's and post-construction BMP's. Refer to Sheet 5 of the project plans for erosion and sedimentation control narratives and details. The project requirements for inspection and maintenance during construction and post-construction are described in the Erosion and Sedimentation Control - Inspection and Maintenance Plan found in Appendix h of this Report. The housekeeping standards can also be found in the Inspection and Maintenance Plan.

1.6 **GENERAL STANDARDS**

The proposed project is required to meet the General Standards. To meet the general standards, the project design must demonstrate that the stormwater management system includes treatment measures that will provide pollutant removal or treatment and mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms and potential temperature impacts. This must be achieved by providing treatment of no less than 95% of the impervious area and no less than 80% of the developed area.

The stormwater management system includes two grassed underdrained soil filters. The proposed BMP's have been designed in accordance with the design requirements outlined in the Maine Stormwater Best Management Practices Manual, Volume III.

Below is a summary of the treatment areas associated with the proposed infrastructure. Refer to Appendix F for detailed calculations.

Treatment Summary	
Total Proposed Impervious Area	127,115 sf
Total Proposed Developed Area	185,261 sf
Total Treated Impervious Area	123,548 sf
Total Treated Developed Area	153,971 sf
Impervious Area Treatment %	97.19% (95% required)
Developed Area Treatment %	83.11% (80% required)

Please note that a treatment exemption credit of 1,814 sf of impervious area and 3,108 sf of developed area has been considered for the access road wetland impacts per section 4 (5)(e) of Chapter 500.

1.7 **PHOSPHORUS STANDARD**

The proposed project is located in the Thatcher Brook watershed. The proposed project is not located within the direct watershed of a lake or lake most-at-risk listed in 06-096 Chapter 502. The Phosphorus Standard does not apply to this project.

1.8 **URBAN IMPAIRED STREAM STANDARD**

The proposed project is located within the Thatcher Brook Watershed, which is classified as an Urban Impaired Stream. However, because the project will not create over 3 acres of impervious area or 20 acres of disturbed area, the project is not required to meet the Urban Impaired Stream Standard.

1.9 **FLOODING STANDARD**

The proposed project is required to meet the Flooding Standards. To meet the Flooding Standard, the project design must demonstrate that the stormwater management systems will accomplish the following:

- a) The system must detain, retain, or result in the infiltration of stormwater from 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.
- b) The design of piped or open channel systems must be based on a 10-year, 24-hour storm without overloading or flooding beyond channel limits.
- c) The areas expected to be flooded by runoff from a 10-year or 25-year, 24-hour storm must be defined, and no buildings or other similar facilities may be planned within such areas.
- d) Runoff from the project may not flood the primary access road to the project and any public roads bordering the project as a result of a 25-year, 24-hour storm.

The following Table compares the Pre and Post Development peak flow rates for the 2-year, 10-year, and 25-year return periods. Refer to Appendix B for the Pre Development model and Appendix C for Post Development model.

Peak Flow Comparison (cu. ft./sec)						
Analysis Point	2-Year		10-Year		25-Year	
	Pre	Post	Pre	Post	Pre	Post
AP-1	16.44	17.81	34.83	38.67	47.27	52.49
AP-2	0.72	0.02	2.59	0.17	4.58	0.38
Reach 1 – Combination (AP1 & 2)	17.14	17.82	37.18	38.72	51.08	52.58
AP-3	3.72	2.88	8.47	6.55	12.80	9.88
Total (AP1-3)	20.86	20.70	45.65	45.27	63.88	62.46

As illustrated in the table above, development of the proposed project will create a condition where peak flows of stormwater from the project site exceed the peak flows of stormwater prior to undertaking the project at Analysis Point 1 and Reach 1 in the 2, 10, and 25-year storm events. These increases are minor and will not create any adverse impacts as summarized below:

Analysis Point 1

The predicted increased flow rate at Analysis Point 1 (increase of 8.33%, 11.02% & 11.04%) is due to redirecting 7.548 acres of offsite area to this area as a result of placing fill to create the gravel parking area.

The predicted impact of this increase has been analyzed in HydroCAD and the results can be found in Appendix F of this report and is further analyzed in the following section.

Reach 1

Since the development of this project will create an increase in peak flow rate at Analysis Point 1, and a decrease at Analysis Point 2, an analysis of the combined flow rates is necessary to determine the overall impact to the downstream condition.

Reach 1 models the Marcel Avenue roadway swale downstream of Analysis Points 1 & 2 where stormwater runoff converges prior to flowing through a single 24" reinforced concrete driveway culvert.

The predicted increased flow rate at Reach 1 (increase of 3.97%, 4.14% & 2.94%) will result in minor changes within the existing roadway ditch along Marcel Avenue

The following tables compare the average water storage depth and maximum velocities that are predicted in this roadway ditch in the pre and post development conditions.

Water Surface Comparison Reach 1 (ft)			
Storm Event	2-Year	10-Year	25-Year
Pre Development Elevation	1.26	1.83	2.13
Post Development Elevation	1.29	1.87	2.16
Change	+0.03	+0.04	+0.03

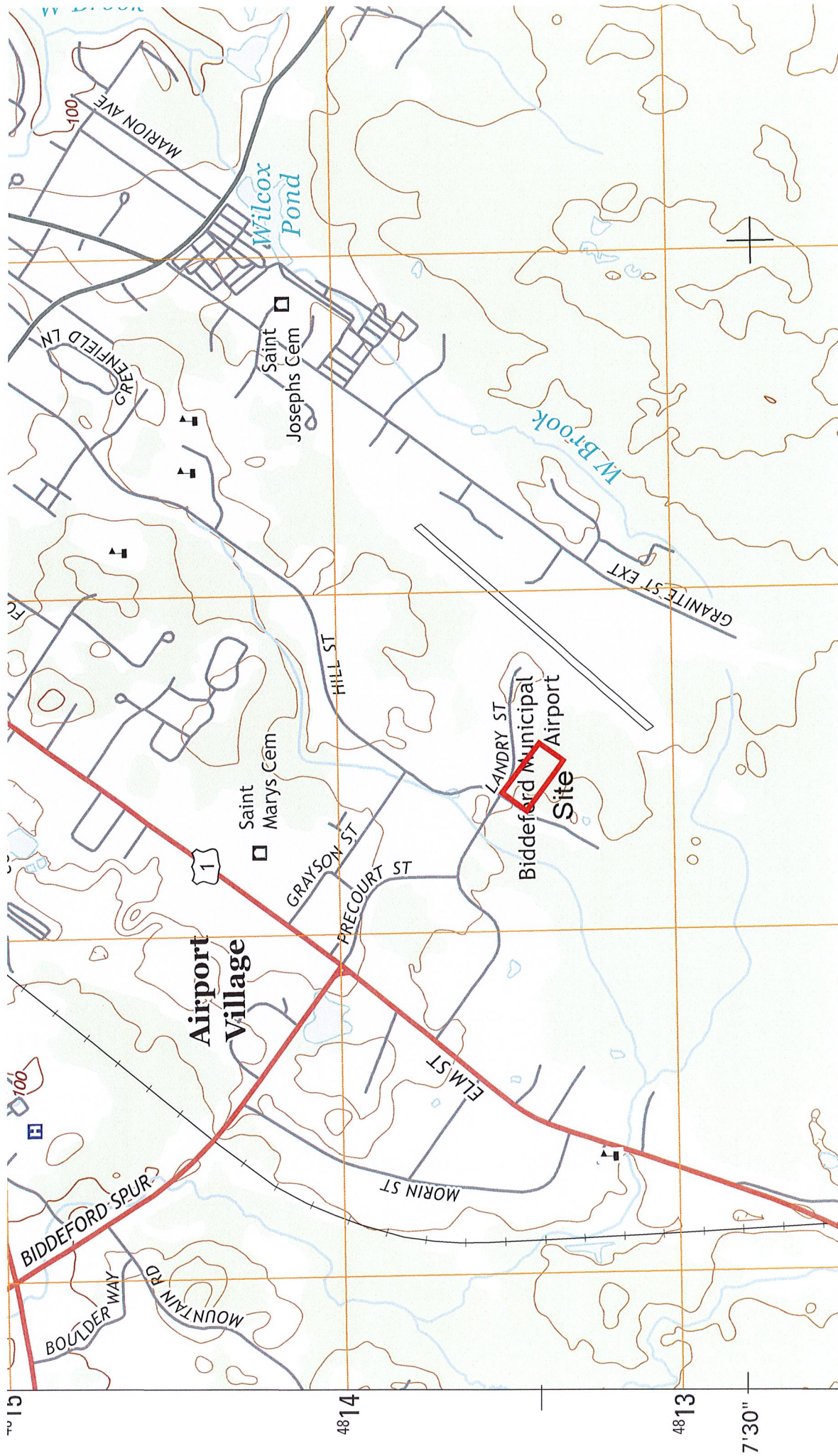
Max. Velocity Comparison Reach 1 (fps)			
Storm Event	2-Year	10-Year	25-Year
Pre Development Elevation	3.50	4.28	4.63
Post Development Elevation	3.54	4.32	4.66
Change	+0.04	+0.04	+0.03

As seen in the tables above, these increases are minor and will not affect the abutting properties or create adverse impacts to the downstream conditions. See Appendix F for additional information.

A review of the total impacts of the project by adding all three analysis points demonstrates a reduction in peak flow rates for all storm events (see total (AP1-3)).

1.10 CLOSURE

The proposed stormwater management facilities have been designed to mitigate stormwater impacts associated with development of the proposed project. In accordance with City of Biddeford code requirements of meeting “quality and quantity standards of Chapter 500”, the proposed stormwater management facilities have been designed to meet the Basic, General and Flooding Standards.





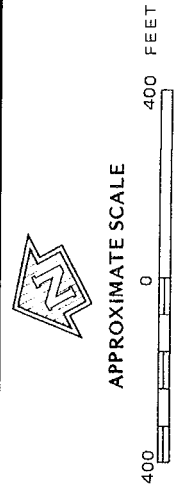
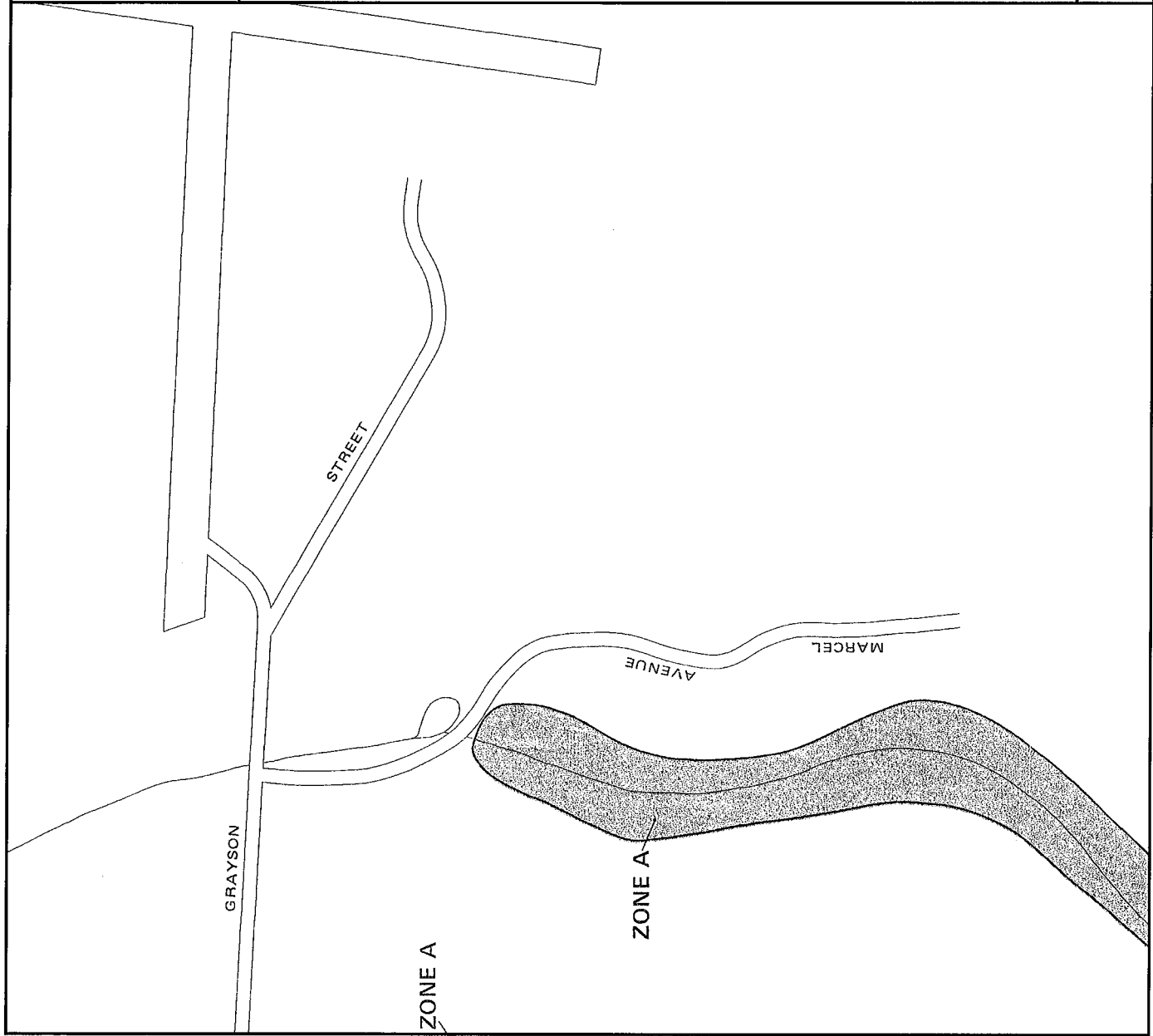
North is based on the
Maine State
Coordinate System
Maine State
North Datum is 1947

UPDATED THROUGH APRIL 1, 2018
FOR ASSESSMENT PURPOSES ONLY
NOT TO BE USED FOR CONVEYANCES

The City of Biddeford, Maine
Office of the Tax Assessor
Nicholas Desjardins, CMA
Assessor

74
Tax Map





NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
BIDDEFORD,
MAINE
YORK COUNTY

PANEL 9 OF 11
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230145 0009 B

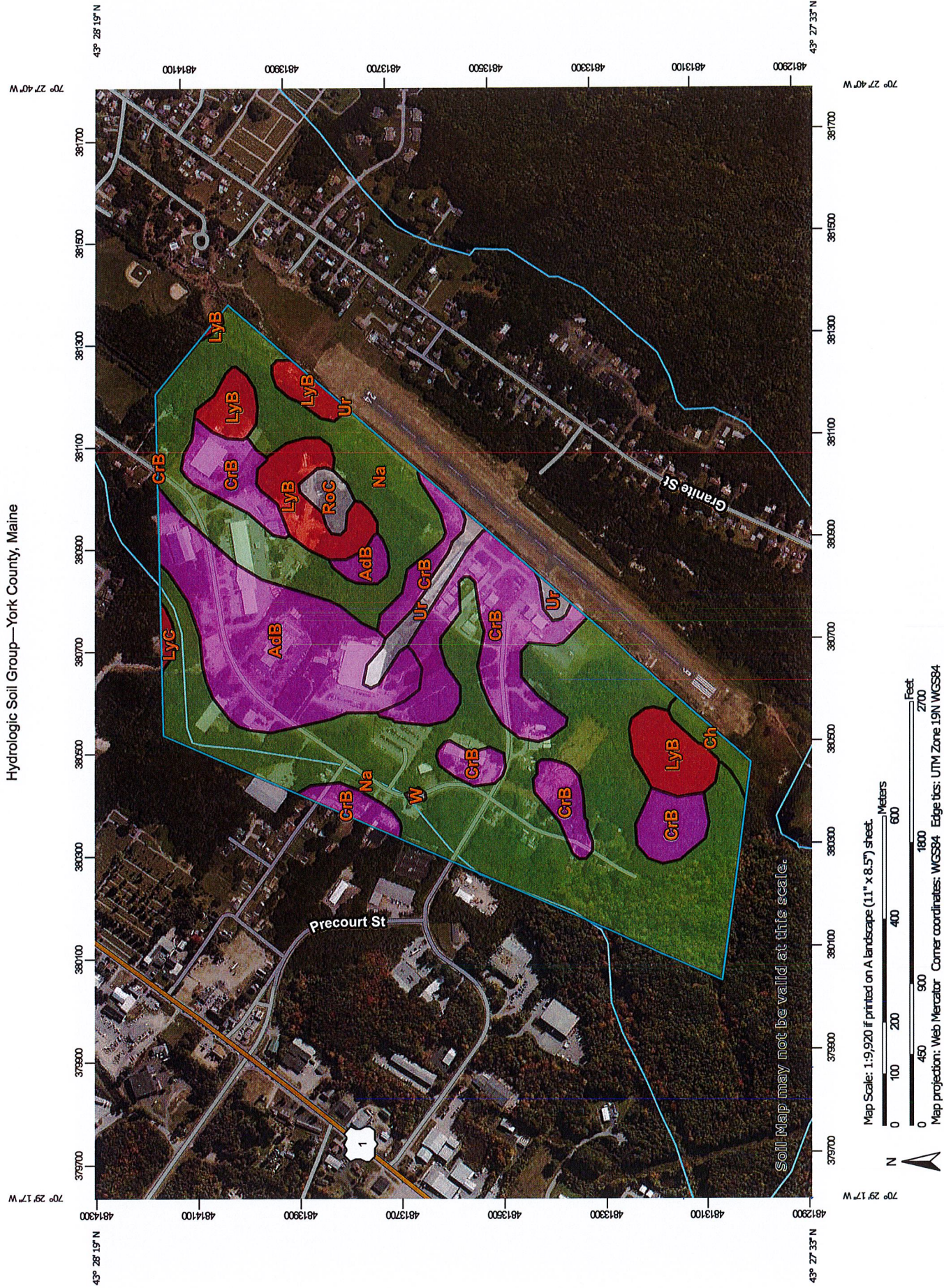
EFFECTIVE DATE:
MAY 15, 1984

 Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Maine DEP Urban Impaired Stream Watershed Map





MAP LEGEND

MAP INFORMATION

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

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

C

C/D

D

Not rated or not available

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: [Web Soil Survey](#)

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: York County, Maine

Survey Area Data: Version 20, Aug 31, 2021

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
AdB	Adams loamy sand, 0 to 8 percent slopes	A	28.6	14.7%
Ch	Chocorua peat	A/D	2.1	1.1%
CrB	Croghan loamy fine sand, 0 to 8 percent slopes, wooded	A	36.3	18.6%
LyB	Lyman-Rock outcrop complex, 3 to 8 percent slopes	D	16.4	8.4%
LyC	Lyman-Rock outcrop complex, 8 to 15 percent slopes	D	0.6	0.3%
Na	Naumburg sand	A/D	104.8	53.7%
RoC	Rock outcrop-Lyman complex, 3 to 15 percent slopes		2.1	1.1%
Ur	Urban land		3.9	2.0%
W	Water bodies		0.2	0.1%
Totals for Area of Interest			195.1	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.

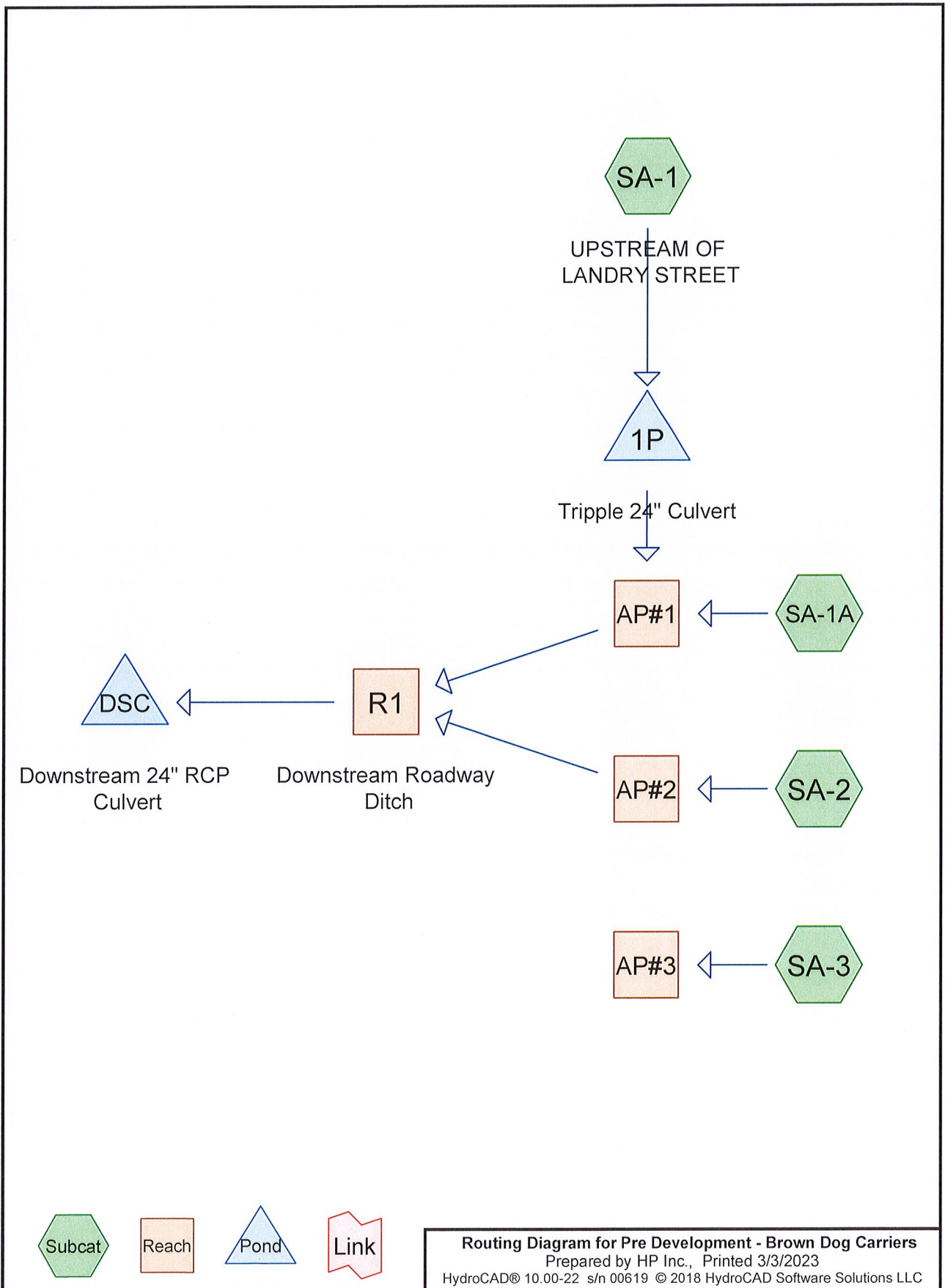
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



Pre Development - Brown Dog Carriers

Prepared by HP Inc.

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Printed 3/3/2023

Page 2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.349	39	>75% Grass cover, Good, HSG A (SA-2)
0.339	80	>75% Grass cover, Good, HSG D (SA-1A, SA-2)
0.082	98	Existing House & Driveway (SA-1A, SA-2)
1.237	98	Existing Roadway (SA-1, SA-1A, SA-2)
12.647	89	Urban commercial, 85% imp, HSG A (SA-1, SA-1A, SA-2)
9.617	95	Urban commercial, 85% imp, HSG D (SA-1, SA-1A, SA-2)
12.229	30	Woods, Good, HSG A (SA-1, SA-1A, SA-2, SA-3)
20.484	77	Woods, Good, HSG D (SA-1, SA-1A, SA-2, SA-3)
56.985	73	TOTAL AREA

Summary for Reach AP#1:

Inflow Area = 41.997 ac, 45.04% Impervious, Inflow Depth > 0.97" for 2-Year Storm Event event
 Inflow = 16.44 cfs @ 13.20 hrs, Volume= 3.406 af
 Outflow = 16.44 cfs @ 13.20 hrs, Volume= 3.406 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach AP#2:

Inflow Area = 5.303 ac, 25.06% Impervious, Inflow Depth > 0.38" for 2-Year Storm Event event
 Inflow = 0.72 cfs @ 13.08 hrs, Volume= 0.166 af
 Outflow = 0.72 cfs @ 13.08 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach AP#3:

Inflow Area = 9.685 ac, 0.00% Impervious, Inflow Depth > 0.87" for 2-Year Storm Event event
 Inflow = 3.72 cfs @ 13.02 hrs, Volume= 0.705 af
 Outflow = 3.72 cfs @ 13.02 hrs, Volume= 0.705 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach R1: Downstream Roadway Ditch

Inflow Area = 47.300 ac, 42.80% Impervious, Inflow Depth > 0.91" for 2-Year Storm Event event
 Inflow = 17.14 cfs @ 13.20 hrs, Volume= 3.572 af
 Outflow = 17.13 cfs @ 13.20 hrs, Volume= 3.570 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Max. Velocity= 3.50 fps, Min. Travel Time= 0.2 min

Avg. Velocity = 2.04 fps, Avg. Travel Time= 0.4 min

Peak Storage= 245 cf @ 13.20 hrs

Average Depth at Peak Storage= 1.26'

Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 44.85 cfs

2.00' x 2.00' deep channel, n= 0.035

Side Slope Z-value= 1.5 '/' Top Width= 8.00'

Length= 50.0' Slope= 0.0100 '/'

Inlet Invert= 137.00', Outlet Invert= 136.50'



Summary for Reach AP#1:

Inflow Area = 41.997 ac, 45.04% Impervious, Inflow Depth > 2.06" for 10-Year Storm Event event
 Inflow = 34.83 cfs @ 13.19 hrs, Volume= 7.195 af
 Outflow = 34.83 cfs @ 13.19 hrs, Volume= 7.195 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach AP#2:

Inflow Area = 5.303 ac, 25.06% Impervious, Inflow Depth > 1.09" for 10-Year Storm Event event
 Inflow = 2.59 cfs @ 12.95 hrs, Volume= 0.481 af
 Outflow = 2.59 cfs @ 12.95 hrs, Volume= 0.481 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach AP#3:

Inflow Area = 9.685 ac, 0.00% Impervious, Inflow Depth > 1.91" for 10-Year Storm Event event
 Inflow = 8.47 cfs @ 12.96 hrs, Volume= 1.540 af
 Outflow = 8.47 cfs @ 12.96 hrs, Volume= 1.540 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach R1: Downstream Roadway Ditch

Inflow Area = 47.300 ac, 42.80% Impervious, Inflow Depth > 1.95" for 10-Year Storm Event event
 Inflow = 37.18 cfs @ 13.17 hrs, Volume= 7.676 af
 Outflow = 37.17 cfs @ 13.17 hrs, Volume= 7.674 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 4.28 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.35 fps, Avg. Travel Time= 0.4 min

Peak Storage= 435 cf @ 13.17 hrs
 Average Depth at Peak Storage= 1.83'
 Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 44.85 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 1.5 '/' Top Width= 8.00'
 Length= 50.0' Slope= 0.0100 '/'
 Inlet Invert= 137.00', Outlet Invert= 136.50'



Summary for Pond 1P: Tripple 24" Culvert

Inflow Area = 38.541 ac, 45.40% Impervious, Inflow Depth > 3.05" for 25-Year Storm Event event
 Inflow = 52.15 cfs @ 13.00 hrs, Volume= 9.785 af
 Outflow = 44.69 cfs @ 13.33 hrs, Volume= 9.709 af, Atten= 14%, Lag= 19.6 min
 Primary = 44.69 cfs @ 13.33 hrs, Volume= 9.709 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 145.18' @ 13.33 hrs Surf.Area= 30,714 sf Storage= 42,157 cf
 Flood Elev= 146.50' Surf.Area= 40,810 sf Storage= 71,614 cf

Plug-Flow detention time= 13.8 min calculated for 9.677 af (99% of inflow)
 Center-of-Mass det. time= 11.1 min (856.2 - 845.0)

Volume	Invert	Avail.Storage	Storage Description
#1	142.50'	71,614 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
142.50	3,050	0	0
144.00	16,295	14,509	14,509
146.00	40,810	57,105	71,614

Device	Routing	Invert	Outlet Devices
#1	Primary	142.62'	24.0" Round Culvert X 3.00 L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 142.62' / 142.17' S= 0.0050 ' / Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=44.67 cfs @ 13.33 hrs HW=145.17' (Free Discharge)
 ↑1=Culvert (Inlet Controls 44.67 cfs @ 4.74 fps)

Summary for Reach AP#1:

Inflow Area = 41.997 ac, 45.04% Impervious, Inflow Depth > 3.04" for 25-Year Storm Event event
 Inflow = 47.27 cfs @ 13.26 hrs, Volume= 10.653 af
 Outflow = 47.27 cfs @ 13.26 hrs, Volume= 10.653 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach AP#2:

Inflow Area = 5.303 ac, 25.06% Impervious, Inflow Depth > 1.83" for 25-Year Storm Event event
 Inflow = 4.58 cfs @ 12.91 hrs, Volume= 0.807 af
 Outflow = 4.58 cfs @ 12.91 hrs, Volume= 0.807 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach AP#3:

Inflow Area = 9.685 ac, 0.00% Impervious, Inflow Depth > 2.86" for 25-Year Storm Event event
 Inflow = 12.80 cfs @ 12.93 hrs, Volume= 2.312 af
 Outflow = 12.80 cfs @ 12.93 hrs, Volume= 2.312 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond DSC: Downstream 24" RCP Culvert

Inflow Area = 47.300 ac, 42.80% Impervious, Inflow Depth > 2.91" for 25-Year Storm Event event
 Inflow = 51.08 cfs @ 13.20 hrs, Volume= 11.457 af
 Outflow = 52.42 cfs @ 13.20 hrs, Volume= 11.456 af, Atten= 0%, Lag= 0.3 min
 Primary = 52.42 cfs @ 13.20 hrs, Volume= 11.456 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.35' @ 13.20 hrs Surf.Area= 1,730 sf Storage= 1,470 cf
 Flood Elev= 139.00' Surf.Area= 1,730 sf Storage= 1,470 cf

Plug-Flow detention time= 0.5 min calculated for 11.417 af (100% of inflow)
 Center-of-Mass det. time= 0.5 min (854.1 - 853.6)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	1,470 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	10	0	0
136.00	25	18	18
137.00	75	50	68
138.00	500	288	355
139.00	1,730	1,115	1,470

Device	Routing	Invert	Outlet Devices
#1	Primary	135.66'	24.0" Round Culvert L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 135.66' / 135.65' S= 0.0003 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=52.41 cfs @ 13.20 hrs HW=144.34' (Free Discharge)
 1=Culvert (Inlet Controls 52.41 cfs @ 16.68 fps)

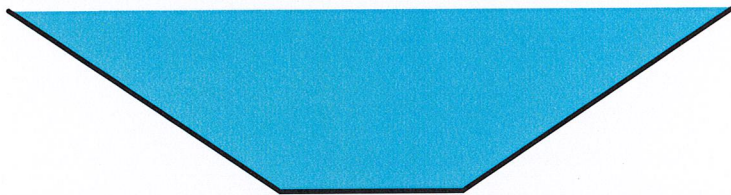
Summary for Reach R1: Downstream Roadway Ditch

Inflow Area = 47.300 ac, 42.80% Impervious, Inflow Depth > 2.91" for 25-Year Storm Event event
 Inflow = 51.08 cfs @ 13.19 hrs, Volume= 11.459 af
 Outflow = 51.08 cfs @ 13.20 hrs, Volume= 11.457 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 4.63 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.53 fps, Avg. Travel Time= 0.3 min

Peak Storage= 552 cf @ 13.19 hrs
 Average Depth at Peak Storage= 2.13'
 Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 44.85 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 1.5 '/' Top Width= 8.00'
 Length= 50.0' Slope= 0.0100 '/'
 Inlet Invert= 137.00', Outlet Invert= 136.50'



Summary for Subcatchment SA-1: UPSTREAM OF LANDRY STREET

Runoff = 52.15 cfs @ 13.00 hrs, Volume= 9.785 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Storm Event Rainfall=6.20"

Area (sf)	CN	Description
* 30,520	98	Existing Roadway
495,370	89	Urban commercial, 85% imp, HSG A
365,457	95	Urban commercial, 85% imp, HSG D
369,981	30	Woods, Good, HSG A
417,512	77	Woods, Good, HSG D
1,678,840	74	Weighted Average
916,617		54.60% Pervious Area
762,223		45.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.9	150	0.0065	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
25.2	660	0.0076	0.44		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.1	644		9.83		Lake or Reservoir, Mean Depth= 3.00'
2.2	650	0.0120	4.93	78.92	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.035
74.4	2,104	Total			

Summary for Subcatchment SA-1A:

Runoff = 6.82 cfs @ 12.60 hrs, Volume= 0.943 af, Depth> 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Storm Event Rainfall=6.20"

Area (sf)	CN	Description
* 22,466	98	Existing Roadway
* 3,273	98	Existing House & Driveway
20,262	89	Urban commercial, 85% imp, HSG A
22,036	95	Urban commercial, 85% imp, HSG D
12,147	80	>75% Grass cover, Good, HSG D
27,588	30	Woods, Good, HSG A
42,758	77	Woods, Good, HSG D
150,530	76	Weighted Average
88,838		59.02% Pervious Area
61,692		40.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.6	150	0.0100	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
1.9	57	0.0100	0.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.6	660	0.0180	4.25	25.47	Trap/Vee/Rect Channel Flow, Bot.W=3.00' D=1.00' Z= 3.0 ' Top.W=9.00' n= 0.035
43.1	867	Total			

Summary for Subcatchment SA-2:

Runoff = 4.58 cfs @ 12.91 hrs, Volume= 0.807 af, Depth> 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Storm Event Rainfall=6.20"

Area (sf)	CN	Description
* 881	98	Existing Roadway
* 308	98	Existing House & Driveway
35,288	89	Urban commercial, 85% imp, HSG A
31,427	95	Urban commercial, 85% imp, HSG D
15,190	39	>75% Grass cover, Good, HSG A
2,623	80	>75% Grass cover, Good, HSG D
93,395	30	Woods, Good, HSG A
51,898	77	Woods, Good, HSG D
231,010	60	Weighted Average
173,113		74.94% Pervious Area
57,897		25.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.3	150	0.0067	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
18.0	638	0.0140	0.59		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
63.3	788	Total			

Summary for Subcatchment SA-3:

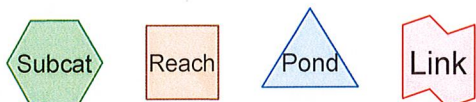
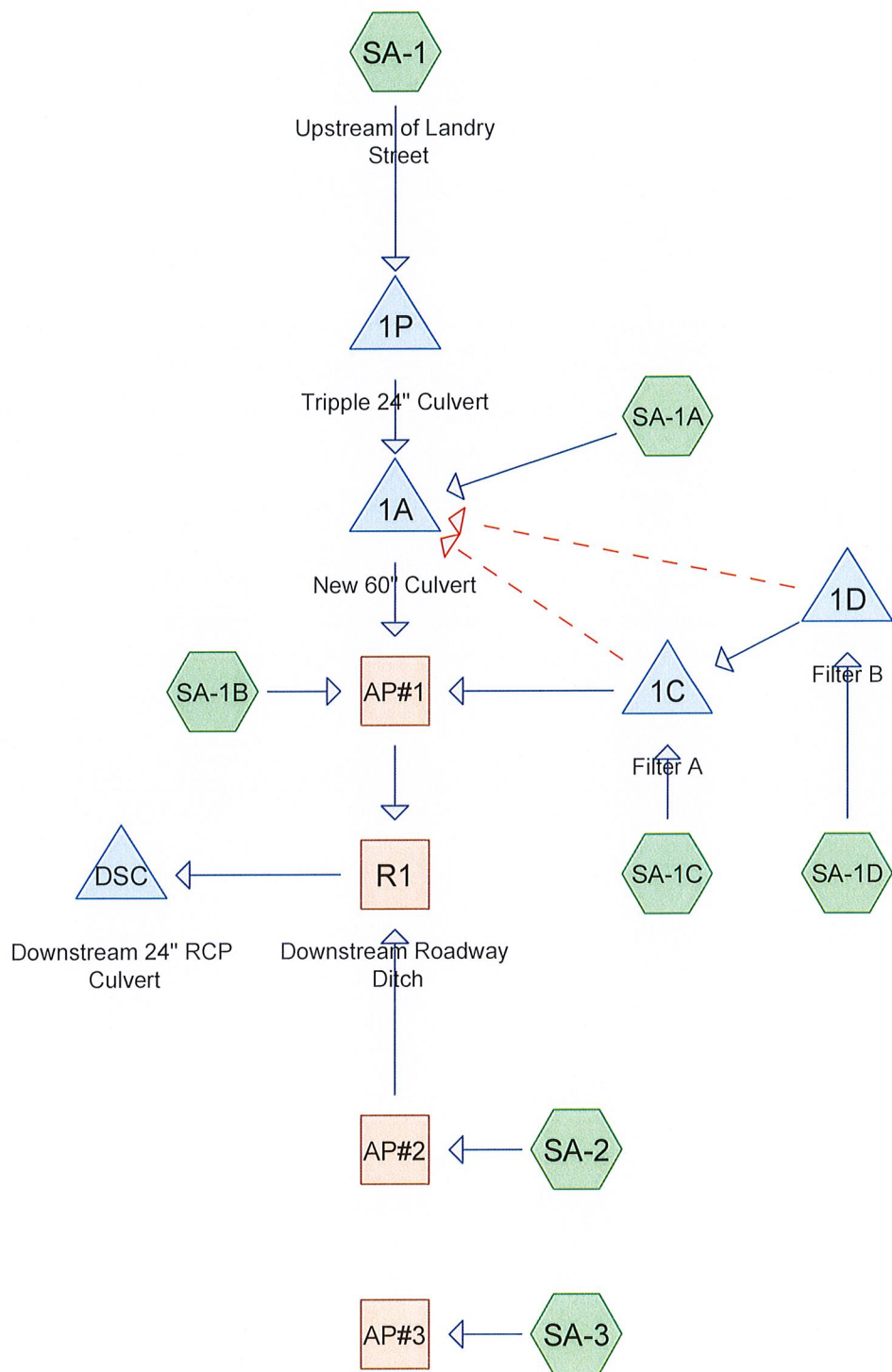
Runoff = 12.80 cfs @ 12.93 hrs, Volume= 2.312 af, Depth> 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Storm Event Rainfall=6.20"

Area (sf)	CN	Description
41,734	30	Woods, Good, HSG A
380,133	77	Woods, Good, HSG D
421,867	72	Weighted Average
421,867		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.3	150	0.0067	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
24.2	888	0.0150	0.61		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
69.5	1,038	Total			

Appendix D
Post Development Calculations



Routing Diagram for Post Development - Brown Dog Carriers
 Prepared by HP Inc., Printed 3/6/2023
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Post Development - Brown Dog Carriers

Prepared by HP Inc.

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.290	39	>75% Grass cover, Good, HSG A (SA-1A, SA-1C)
0.319	80	>75% Grass cover, Good, HSG D (SA-1A, SA-1B, SA-1C)
1.237	98	Existing Roadway (SA-1, SA-1A, SA-1B)
0.150	39	Proposed Grass (A) (SA-2, SA-3)
0.923	80	Proposed Grass (D) (SA-1A, SA-1B, SA-1D, SA-2, SA-3)
2.918	98	Proposed Impervious (SA-1A, SA-1B, SA-1C, SA-1D, SA-2)
12.647	89	Urban commercial, 85% imp, HSG A (SA-1, SA-1A)
9.617	95	Urban commercial, 85% imp, HSG D (SA-1, SA-1A)
11.151	30	Woods, Good, HSG A (SA-1, SA-1A, SA-2, SA-3)
17.733	77	Woods, Good, HSG D (SA-1, SA-1A, SA-1B, SA-2, SA-3)
56.985	75	TOTAL AREA

Summary for Reach AP#1:

Inflow Area = 49.545 ac, 46.57% Impervious, Inflow Depth > 0.97" for 2-Year Storm Event event
 Inflow = 17.81 cfs @ 13.22 hrs, Volume= 3.986 af
 Outflow = 17.81 cfs @ 13.22 hrs, Volume= 3.986 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach AP#2:

Inflow Area = 0.404 ac, 1.51% Impervious, Inflow Depth > 0.16" for 2-Year Storm Event event
 Inflow = 0.02 cfs @ 12.59 hrs, Volume= 0.005 af
 Outflow = 0.02 cfs @ 12.59 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach AP#3:

Inflow Area = 7.036 ac, 0.00% Impervious, Inflow Depth > 0.88" for 2-Year Storm Event event
 Inflow = 2.88 cfs @ 12.92 hrs, Volume= 0.514 af
 Outflow = 2.88 cfs @ 12.92 hrs, Volume= 0.514 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach R1: Downstream Roadway Ditch

Inflow Area = 49.949 ac, 46.21% Impervious, Inflow Depth > 0.96" for 2-Year Storm Event event
 Inflow = 17.82 cfs @ 13.22 hrs, Volume= 3.991 af
 Outflow = 17.82 cfs @ 13.23 hrs, Volume= 3.989 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.54 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.65 fps, Avg. Travel Time= 0.5 min

Peak Storage= 252 cf @ 13.23 hrs
 Average Depth at Peak Storage= 1.28'
 Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 44.85 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 1.5 ' Top Width= 8.00'
 Length= 50.0' Slope= 0.0100 ' '
 Inlet Invert= 137.00', Outlet Invert= 136.50'



Summary for Reach AP#1:

Inflow Area = 49.545 ac, 46.57% Impervious, Inflow Depth > 2.05" for 10-Year Storm Event event
 Inflow = 38.67 cfs @ 13.18 hrs, Volume= 8.444 af
 Outflow = 38.67 cfs @ 13.18 hrs, Volume= 8.444 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach AP#2:

Inflow Area = 0.404 ac, 1.51% Impervious, Inflow Depth > 0.66" for 10-Year Storm Event event
 Inflow = 0.17 cfs @ 12.37 hrs, Volume= 0.022 af
 Outflow = 0.17 cfs @ 12.37 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach AP#3:

Inflow Area = 7.036 ac, 0.00% Impervious, Inflow Depth > 1.91" for 10-Year Storm Event event
 Inflow = 6.55 cfs @ 12.89 hrs, Volume= 1.121 af
 Outflow = 6.55 cfs @ 12.89 hrs, Volume= 1.121 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach R1: Downstream Roadway Ditch

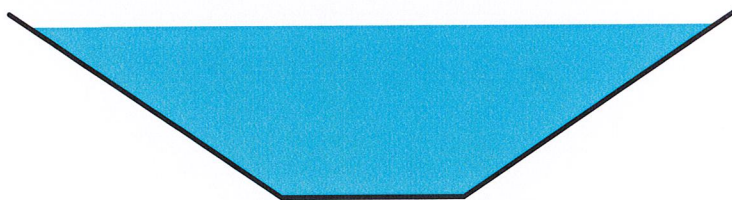
Inflow Area = 49.949 ac, 46.21% Impervious, Inflow Depth > 2.03" for 10-Year Storm Event event
 Inflow = 38.72 cfs @ 13.18 hrs, Volume= 8.466 af
 Outflow = 38.71 cfs @ 13.19 hrs, Volume= 8.464 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Max. Velocity= 4.32 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.07 fps, Avg. Travel Time= 0.4 min

Peak Storage= 448 cf @ 13.18 hrs
 Average Depth at Peak Storage= 1.87'
 Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 44.85 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 1.5 '/' Top Width= 8.00'
 Length= 50.0' Slope= 0.0100 '/'
 Inlet Invert= 137.00', Outlet Invert= 136.50'



Summary for Pond 1A: New 60" Culvert

Inflow Area = 45.153 ac, 44.47% Impervious, Inflow Depth > 3.18" for 25-Year Storm Event event
 Inflow = 51.86 cfs @ 13.17 hrs, Volume= 11.963 af
 Outflow = 51.76 cfs @ 13.23 hrs, Volume= 11.962 af, Atten= 0%, Lag= 3.8 min
 Primary = 51.76 cfs @ 13.23 hrs, Volume= 11.962 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 143.66' @ 13.23 hrs Surf.Area= 6,758 sf Storage= 5,700 cf
 Flood Elev= 147.00' Surf.Area= 8,463 sf Storage= 8,308 cf

Plug-Flow detention time= 1.1 min calculated for 11.922 af (100% of inflow)
 Center-of-Mass det. time= 1.1 min (851.2 - 850.2)

Volume	Invert	Avail.Storage	Storage Description
#1	141.00'	8,308 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
141.00	18	0	0
142.00	579	299	299
143.00	3,488	2,034	2,332
144.00	8,463	5,976	8,308

Device	Routing	Invert	Outlet Devices
#1	Primary	141.00'	60.0" Round Culvert w/ 12.0" inside fill L= 75.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 140.00' / 138.50' S= 0.0200 ' / Cc= 0.900 n= 0.012, Flow Area= 16.84 sf

Primary OutFlow Max=51.74 cfs @ 13.23 hrs HW=143.66' (Free Discharge)
 ↑1=Culvert (Inlet Controls 51.74 cfs @ 4.11 fps)

Summary for Pond 1C: Filter A

Inflow Area = 3.463 ac, 80.69% Impervious, Inflow Depth > 3.49" for 25-Year Storm Event event
 Inflow = 10.56 cfs @ 12.09 hrs, Volume= 1.009 af
 Outflow = 8.79 cfs @ 12.15 hrs, Volume= 0.780 af, Atten= 17%, Lag= 3.8 min
 Primary = 0.26 cfs @ 12.15 hrs, Volume= 0.280 af
 Secondary = 8.53 cfs @ 12.15 hrs, Volume= 0.500 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 147.06' @ 12.15 hrs Surf.Area= 8,489 sf Storage= 12,265 cf
 Flood Elev= 148.00' Surf.Area= 11,008 sf Storage= 21,476 cf

Plug-Flow detention time= 111.0 min calculated for 0.777 af (77% of inflow)
 Center-of-Mass det. time= 38.1 min (807.8 - 769.6)

Volume	Invert	Avail.Storage	Storage Description
#1	145.00'	21,476 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
145.00	3,707	0	0
146.00	5,776	4,742	4,742
147.00	8,342	7,059	11,801
148.00	11,008	9,675	21,476

Device	Routing	Invert	Outlet Devices
#1	Primary	140.83'	12.0" Round Culvert L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 140.83' / 139.75' S= 0.0055 ' / Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	140.93'	2.0" Vert. Orifice/Grate C= 0.600
#3	Secondary	146.75'	20.0' long x 10.0' 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) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.26 cfs @ 12.15 hrs HW=147.05' (Free Discharge)

↑1=Culvert (Passes 0.26 cfs of 6.09 cfs potential flow)

↑2=Orifice/Grate (Orifice Controls 0.26 cfs @ 11.83 fps)

Secondary OutFlow Max=8.50 cfs @ 12.15 hrs HW=147.05' (Free Discharge)

↑3=Broad-Crested Rectangular Weir (Weir Controls 8.50 cfs @ 1.39 fps)

Summary for Pond 1D: Filter B

Inflow Area = 1.587 ac, 79.05% Impervious, Inflow Depth > 5.17" for 25-Year Storm Event event
 Inflow = 9.15 cfs @ 12.09 hrs, Volume= 0.684 af
 Outflow = 4.59 cfs @ 12.25 hrs, Volume= 0.480 af, Atten= 50%, Lag= 9.5 min
 Primary = 0.26 cfs @ 12.25 hrs, Volume= 0.264 af
 Secondary = 4.33 cfs @ 12.25 hrs, Volume= 0.216 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.95' @ 12.25 hrs Surf.Area= 8,342 sf Storage= 11,526 cf
 Flood Elev= 148.00' Surf.Area= 11,104 sf Storage= 21,772 cf

Plug-Flow detention time= 114.9 min calculated for 0.478 af (70% of inflow)
 Center-of-Mass det. time= 48.8 min (793.3 - 744.6)

Volume	Invert	Avail.Storage	Storage Description
#1	145.00'	21,772 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
145.00	3,742	0	0
146.00	5,866	4,804	4,804
147.00	8,483	7,175	11,979
148.00	11,104	9,794	21,772

Device	Routing	Invert	Outlet Devices
#1	Primary	140.83'	12.0" Round Culvert L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 140.83' / 139.75' S= 0.0055 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	140.93'	2.0" Vert. Orifice/Grate C= 0.600
#3	Secondary	146.75'	20.0' long x 10.0' 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) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.26 cfs @ 12.25 hrs HW=146.95' (Free Discharge)

↑ **1=Culvert** (Passes 0.26 cfs of 6.04 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.26 cfs @ 11.73 fps)

Secondary OutFlow Max=4.31 cfs @ 12.25 hrs HW=146.95' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 4.31 cfs @ 1.10 fps)

Summary for Pond 1P: Tripple 24" Culvert

Inflow Area = 38.541 ac, 45.40% Impervious, Inflow Depth > 3.05" for 25-Year Storm Event event
 Inflow = 52.15 cfs @ 13.00 hrs, Volume= 9.785 af
 Outflow = 44.69 cfs @ 13.33 hrs, Volume= 9.709 af, Atten= 14%, Lag= 19.6 min
 Primary = 44.69 cfs @ 13.33 hrs, Volume= 9.709 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 145.18' @ 13.33 hrs Surf.Area= 30,714 sf Storage= 42,157 cf
 Flood Elev= 146.50' Surf.Area= 40,810 sf Storage= 71,614 cf

Plug-Flow detention time= 13.8 min calculated for 9.677 af (99% of inflow)
 Center-of-Mass det. time= 11.1 min (856.2 - 845.0)

Volume	Invert	Avail.Storage	Storage Description
#1	142.50'	71,614 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
142.50	3,050	0	0
144.00	16,295	14,509	14,509
146.00	40,810	57,105	71,614

Device	Routing	Invert	Outlet Devices
#1	Primary	142.62'	24.0" Round Culvert X 3.00 L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 142.62' / 142.17' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=44.67 cfs @ 13.33 hrs HW=145.17' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 44.67 cfs @ 4.74 fps)

Summary for Reach AP#1:

Inflow Area = 49.545 ac, 46.57% Impervious, Inflow Depth > 3.04" for 25-Year Storm Event event
 Inflow = 52.49 cfs @ 13.22 hrs, Volume= 12.544 af
 Outflow = 52.49 cfs @ 13.22 hrs, Volume= 12.544 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach AP#2:

Inflow Area = 0.404 ac, 1.51% Impervious, Inflow Depth > 1.24" for 25-Year Storm Event event
 Inflow = 0.38 cfs @ 12.32 hrs, Volume= 0.042 af
 Outflow = 0.38 cfs @ 12.32 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach AP#3:

Inflow Area = 7.036 ac, 0.00% Impervious, Inflow Depth > 2.87" for 25-Year Storm Event event
 Inflow = 9.88 cfs @ 12.88 hrs, Volume= 1.684 af
 Outflow = 9.88 cfs @ 12.88 hrs, Volume= 1.684 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond DSC: Downstream 24" RCP Culvert

Inflow Area = 49.949 ac, 46.21% Impervious, Inflow Depth > 3.02" for 25-Year Storm Event event
 Inflow = 52.58 cfs @ 13.22 hrs, Volume= 12.583 af
 Outflow = 52.66 cfs @ 13.24 hrs, Volume= 12.581 af, Atten= 0%, Lag= 1.3 min
 Primary = 52.66 cfs @ 13.24 hrs, Volume= 12.581 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.42' @ 13.24 hrs Surf.Area= 1,730 sf Storage= 1,470 cf
 Flood Elev= 139.00' Surf.Area= 1,730 sf Storage= 1,470 cf

Plug-Flow detention time= 0.5 min calculated for 12.581 af (100% of inflow)
 Center-of-Mass det. time= 0.5 min (849.2 - 848.7)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	1,470 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	10	0	0
136.00	25	18	18
137.00	75	50	68
138.00	500	288	355
139.00	1,730	1,115	1,470

Device	Routing	Invert	Outlet Devices
#1	Primary	135.66'	24.0" Round Culvert L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 135.66' / 135.65' S= 0.0003 '/ Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=52.63 cfs @ 13.24 hrs HW=144.41' (Free Discharge)
 1=Culvert (Inlet Controls 52.63 cfs @ 16.75 fps)

Summary for Reach R1: Downstream Roadway Ditch

Inflow Area = 49.949 ac, 46.21% Impervious, Inflow Depth > 3.02" for 25-Year Storm Event event
 Inflow = 52.58 cfs @ 13.22 hrs, Volume= 12.586 af
 Outflow = 52.58 cfs @ 13.22 hrs, Volume= 12.583 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 4.66 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.34 fps, Avg. Travel Time= 0.4 min

Peak Storage= 564 cf @ 13.22 hrs
 Average Depth at Peak Storage= 2.16'
 Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 44.85 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 1.5 '/ Top Width= 8.00'
 Length= 50.0' Slope= 0.0100 '/
 Inlet Invert= 137.00', Outlet Invert= 136.50'



Summary for Subcatchment SA-1: Upstream of Landry Street

Runoff = 52.15 cfs @ 13.00 hrs, Volume= 9.785 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Storm Event Rainfall=6.20"

Area (sf)	CN	Description
* 30,520	98	Existing Roadway
495,370	89	Urban commercial, 85% imp, HSG A
365,457	95	Urban commercial, 85% imp, HSG D
369,981	30	Woods, Good, HSG A
417,512	77	Woods, Good, HSG D
1,678,840	74	Weighted Average
916,617		54.60% Pervious Area
762,223		45.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.9	150	0.0065	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
25.2	660	0.0076	0.44		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.1	644		9.83		Lake or Reservoir, Mean Depth= 3.00'
2.2	650	0.0120	4.93	78.92	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=2.00' Z= 3.0 ' Top.W=14.00' n= 0.035
74.4	2,104	Total			

Summary for Subcatchment SA-1A:

Runoff = 10.01 cfs @ 12.74 hrs, Volume= 1.538 af, Depth> 2.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Storm Event Rainfall=6.20"

Area (sf)	CN	Description
* 2,380	98	Proposed Impervious
* 17,393	98	Existing Roadway
* 6,847	80	Proposed Grass (D)
3,586	80	>75% Grass cover, Good, HSG D
2,927	39	>75% Grass cover, Good, HSG A
55,550	89	Urban commercial, 85% imp, HSG A
53,468	95	Urban commercial, 85% imp, HSG D
78,704	30	Woods, Good, HSG A
67,171	77	Woods, Good, HSG D
288,026	71	Weighted Average
175,588		60.96% Pervious Area
112,438		39.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.3	150	0.0067	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
4.7	125	0.0080	0.45		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.8	476	0.0080	2.83	16.98	Trap/Vee/Rect Channel Flow, Bot.W=3.00' D=1.00' Z= 3.0 ' Top.W=9.00' n= 0.035
52.8	751	Total			

Summary for Subcatchment SA-1B:

Runoff = 2.78 cfs @ 12.33 hrs, Volume= 0.302 af, Depth> 3.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Storm Event Rainfall=6.20"

Area (sf)	CN	Description
* 2,736	98	Proposed Impervious
* 5,954	98	Existing Roadway
* 6,847	80	Proposed Grass (D)
5,332	80	>75% Grass cover, Good, HSG D
19,584	77	Woods, Good, HSG D
40,453	82	Weighted Average
31,763		78.52% Pervious Area
8,690		21.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	127	0.0240	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
0.8	164	0.0120	3.47	20.80	Trap/Vee/Rect Channel Flow, Bot.W=3.00' D=1.00' Z= 3.0 ' Top.W=9.00' n= 0.035
24.6	291	Total			

Summary for Subcatchment SA-1C:

Runoff = 10.31 cfs @ 12.09 hrs, Volume= 0.745 af, Depth> 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Storm Event Rainfall=6.20"

Area (sf)	CN	Description
* 67,097	98	Proposed Impervious
9,688	39	>75% Grass cover, Good, HSG A
4,964	80	>75% Grass cover, Good, HSG D
81,749	90	Weighted Average
14,652		17.92% Pervious Area
67,097		82.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	150	0.0100	1.15		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
0.8	73	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.0	128	0.0050	2.14	10.69	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=1.00' Z= 3.0 ' Top.W=8.00' n= 0.035
4.0	351	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment SA-1D:

Runoff = 9.15 cfs @ 12.09 hrs, Volume= 0.684 af, Depth> 5.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Storm Event Rainfall=6.20"

Area (sf)	CN	Description
* 54,637	98	Proposed Impervious
* 14,477	80	Proposed Grass (D)
69,114	94	Weighted Average
14,477		20.95% Pervious Area
54,637		79.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	150	0.0100	1.15		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
0.8	74	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.0	132	0.0050	2.14	10.69	Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=1.00' Z= 3.0 ' Top.W=8.00' n= 0.035
4.0	356	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment SA-2:

Runoff = 0.38 cfs @ 12.32 hrs, Volume= 0.042 af, Depth> 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Storm Event Rainfall=6.20"

	Area (sf)	CN	Description
*	265	98	Proposed Impervious
*	5,937	39	Proposed Grass (A)
*	1,123	80	Proposed Grass (D)
	4,573	30	Woods, Good, HSG A
	5,694	77	Woods, Good, HSG D
	17,592	52	Weighted Average
	17,327		98.49% Pervious Area
	265		1.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.5	64	0.0100	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"

Summary for Subcatchment SA-3:

Runoff = 9.88 cfs @ 12.88 hrs, Volume= 1.684 af, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Storm Event Rainfall=6.20"

	Area (sf)	CN	Description
*	594	39	Proposed Grass (A)
*	10,930	80	Proposed Grass (D)
	32,463	30	Woods, Good, HSG A
	262,486	77	Woods, Good, HSG D
	306,473	72	Weighted Average
	306,473		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.3	150	0.0067	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
18.1	644	0.0140	0.59		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
63.4	794	Total			

Appendix E
Water Quality Calculations

WATER QUALITY CALCULATIONS

Brown Dog Carriers

Subcatchment ID	Proposed Impervious Area (sf)	Proposed Landscaped Area (sf)	Proposed Developed Area (sf)	Existing Impervious Area (sf)	Existing Landscaped Area (sf)	Treated Impervious Area (sf)	Treated Developed Area (sf)	BMP ID
1	0	0	0	762,223	916,617	0	0	None
1A	2,380	3,586	5,966	110,030	172,030	0	0	None
1B	2,736	6,847	9,583	5,954	24,916	0	0	None
1C	67,097	14,652	81,749	0	0	67,097	81,749	Filter A
1D	54,637	14,477	69,114	0	0	54,637	69,114	Filter B
2	265	7,060	7,325	0	10,267	0	0	None
3	0	11,524	11,524	0	294,949	0	0	None
Total	127,115	58,146	185,261	878,207	1,418,779	121,734	150,863	

New Development Treatment Summary	
Total Proposed Impervious Area (sq. ft.)=	127,115
Total Proposed Developed Area (sq. ft.)=	185,261
* Total Treated Impervious Area (sq. ft.)=	123,548
* Total Treated Developed Area (sq. ft.)=	153,971
Impervious Area Treatment % =	97.19%
Developed Area Treatment % =	83.11%

* A treatment credit of 1,814 sf of impervious area and 3,108 sf of developed area has been considered for the entrance road wetland impacts per section 4 (5)(e) of Chapter 500

Grassed Underdrained Soil Filter A Calculations

Subcatchment ID	Impervious Area (sf)	WQ Impervious Area Runoff Depth (inches)	WQ Impervious Volume Required (ft ³)	Landscape Area (sf)	WQ Landscape Area Runoff Depth (inches)	WQ Landscape Volume Required (ft ³)	Total WQ Volume Required (ft ³)
1C	67,097	1.00	5,591	14,652	0.40	488	6,080
Total	67,097		5,591	14,652		488	6,080

Summary of Underdrain Filter Sizing	
Total WQ Volume Required (ft ³)	6,080
WQ Volume Provided (ft ³)	7,950
Filter Surface Elevation	145.00
WQ Surface Elevation	146.50
Invert of Underdrain	142.67
5% of Tributary Impervious Area (ft ²)	3,355
2% of Tributary Landscape Area (ft ²)	293
Filter Surface Area Required (ft ²)	3,648
Filter Surface Area Provided (ft ²)	3,707

Underdrain Filter Volume			
Elevation	Surface Area (ft ²)	Average Stage Area (ft ²)	Cumulative Volume (ft ³)
145	3,707		0
146	5,776	4,742	4,742
146.5	7,059	6,418	7,950
147	8,342	7,701	11,801
148	11,008	9,675	21,476
Water Quality Volume Provided (at Elevation 146.5) =			7,950

Orifice Sizing	
Discharge Coefficient	0.62
Orifice Size (inches)	1.2
Orifice Size (feet)	0.10
Orifice Area (ft ²)	0.008
Orifice Centerline Elevation	142.92

Orifice Eqn: $C \cdot A \cdot (2gH)^{1/2}$

Q (cfs)	Stage Elevation	Total Drawdown at Stage	Pond Area	Drawdown Time (hrs)
0.0563	145	0.00	3,707	0.00
0.0685	146	1.00	5,776	23.41
0.0739	146.5	0.50	7,059	13.27
Total Drawdown Time =				36.68

Required Sediment Storage		Provided Storage Volume	
Area to be Sanded	1.54 acres	Total # of CB's	0
Sand Used per Storm	500 lbs/acre-storm	Sump Depth	2 ft
Weight of Sand	90 lbs/cf	CB Diameter	4 ft
# of Storms per Year	10 storms/year	CB Sediment Storage Volume	0.00 cf
Sediment Storage Required	85.57 cf/year	Forebay Volume	770 cf
		Total Volume	770.00 cf

Summary for Pond 1C: Filter A

Inflow Area = 3.463 ac, 80.69% Impervious, Inflow Depth > 1.91" for 2-Year Storm Event event
 Inflow = 5.04 cfs @ 12.09 hrs, Volume= 0.551 af
 Outflow = 0.57 cfs @ 13.69 hrs, Volume= 0.325 af, Atten= 89%, Lag= 96.2 min
 Primary = 0.25 cfs @ 13.69 hrs, Volume= 0.238 af
 Secondary = 0.32 cfs @ 13.69 hrs, Volume= 0.087 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.78' @ 13.69 hrs Surf.Area= 7,785 sf Storage= 10,050 cf
 Flood Elev= 148.00' Surf.Area= 11,008 sf Storage= 21,476 cf

Plug-Flow detention time= 181.0 min calculated for 0.325 af (59% of inflow)
 Center-of-Mass det. time= 65.5 min (874.3 - 808.8)

Volume	Invert	Avail.Storage	Storage Description
#1	145.00'	21,476 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
145.00	3,707	0	0
146.00	5,776	4,742	4,742
147.00	8,342	7,059	11,801
148.00	11,008	9,675	21,476

Device	Routing	Invert	Outlet Devices
#1	Primary	140.83'	12.0" Round Culvert L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 140.83' / 139.75' S= 0.0055 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	140.93'	2.0" Vert. Orifice/Grate C= 0.600
#3	Secondary	146.75'	20.0' long x 10.0' 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) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.25 cfs @ 13.69 hrs HW=146.78' (Free Discharge)

1=Culvert (Passes 0.25 cfs of 5.96 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.25 cfs @ 11.57 fps)

Secondary OutFlow Max=0.30 cfs @ 13.69 hrs HW=146.78' (Free Discharge)

3=Broad-Crested Rectangular Weir (Weir Controls 0.30 cfs @ 0.45 fps)

Summary for Pond 1C: Filter A

Inflow Area = 3.463 ac, 80.69% Impervious, Inflow Depth > 2.80" for 10-Year Storm Event event
 Inflow = 8.09 cfs @ 12.09 hrs, Volume= 0.808 af
 Outflow = 4.22 cfs @ 12.25 hrs, Volume= 0.580 af, Atten= 48%, Lag= 9.7 min
 Primary = 0.26 cfs @ 12.25 hrs, Volume= 0.266 af
 Secondary = 3.97 cfs @ 12.25 hrs, Volume= 0.314 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.93' @ 12.25 hrs Surf.Area= 8,175 sf Storage= 11,262 cf
 Flood Elev= 148.00' Surf.Area= 11,008 sf Storage= 21,476 cf

Plug-Flow detention time= 130.8 min calculated for 0.580 af (72% of inflow)
 Center-of-Mass det. time= 43.5 min (825.8 - 782.4)

Volume	Invert	Avail.Storage	Storage Description
#1	145.00'	21,476 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
145.00	3,707	0	0
146.00	5,776	4,742	4,742
147.00	8,342	7,059	11,801
148.00	11,008	9,675	21,476

Device	Routing	Invert	Outlet Devices
#1	Primary	140.83'	12.0" Round Culvert L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 140.83' / 139.75' S= 0.0055 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	140.93'	2.0" Vert. Orifice/Grate C= 0.600
#3	Secondary	146.75'	20.0' long x 10.0' 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) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.26 cfs @ 12.25 hrs HW=146.93' (Free Discharge)

↑ **1=Culvert** (Passes 0.26 cfs of 6.04 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.26 cfs @ 11.72 fps)

Secondary OutFlow Max=3.96 cfs @ 12.25 hrs HW=146.93' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 3.96 cfs @ 1.07 fps)

Summary for Pond 1C: Filter A

Inflow Area = 3.463 ac, 80.69% Impervious, Inflow Depth > 3.49" for 25-Year Storm Event event
 Inflow = 10.56 cfs @ 12.09 hrs, Volume= 1.009 af
 Outflow = 8.79 cfs @ 12.15 hrs, Volume= 0.780 af, Atten= 17%, Lag= 3.8 min
 Primary = 0.26 cfs @ 12.15 hrs, Volume= 0.280 af
 Secondary = 8.53 cfs @ 12.15 hrs, Volume= 0.500 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 147.06' @ 12.15 hrs Surf.Area= 8,489 sf Storage= 12,265 cf
 Flood Elev= 148.00' Surf.Area= 11,008 sf Storage= 21,476 cf

Plug-Flow detention time= 111.0 min calculated for 0.777 af (77% of inflow)
 Center-of-Mass det. time= 38.1 min (807.8 - 769.6)

Volume	Invert	Avail.Storage	Storage Description
#1	145.00'	21,476 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
145.00	3,707	0	0
146.00	5,776	4,742	4,742
147.00	8,342	7,059	11,801
148.00	11,008	9,675	21,476

Device	Routing	Invert	Outlet Devices
#1	Primary	140.83'	12.0" Round Culvert L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 140.83' / 139.75' S= 0.0055 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	140.93'	2.0" Vert. Orifice/Grate C= 0.600
#3	Secondary	146.75'	20.0' long x 10.0' 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) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.26 cfs @ 12.15 hrs HW=147.05' (Free Discharge)

1=Culvert (Passes 0.26 cfs of 6.09 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.26 cfs @ 11.83 fps)

Secondary OutFlow Max=8.50 cfs @ 12.15 hrs HW=147.05' (Free Discharge)

3=Broad-Crested Rectangular Weir (Weir Controls 8.50 cfs @ 1.39 fps)

Summary for Pond 1C: Filter A

Inflow Area = 3.463 ac, 80.69% Impervious, Inflow Depth > 4.81" for 100-Year Storm Event event
 Inflow = 15.24 cfs @ 12.09 hrs, Volume= 1.388 af
 Outflow = 13.60 cfs @ 12.13 hrs, Volume= 1.159 af, Atten= 11%, Lag= 2.6 min
 Primary = 0.26 cfs @ 12.13 hrs, Volume= 0.295 af
 Secondary = 13.34 cfs @ 12.13 hrs, Volume= 0.864 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 147.16' @ 12.13 hrs Surf.Area= 8,762 sf Storage= 13,147 cf
 Flood Elev= 148.00' Surf.Area= 11,008 sf Storage= 21,476 cf

Plug-Flow detention time= 92.9 min calculated for 1.155 af (83% of inflow)
 Center-of-Mass det. time= 36.5 min (792.3 - 755.8)

Volume	Invert	Avail.Storage	Storage Description
#1	145.00'	21,476 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
145.00	3,707	0	0
146.00	5,776	4,742	4,742
147.00	8,342	7,059	11,801
148.00	11,008	9,675	21,476

Device	Routing	Invert	Outlet Devices
#1	Primary	140.83'	12.0" Round Culvert L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 140.83' / 139.75' S= 0.0055 ' / Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	140.93'	2.0" Vert. Orifice/Grate C= 0.600
#3	Secondary	146.75'	20.0' long x 10.0' 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) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.26 cfs @ 12.13 hrs HW=147.15' (Free Discharge)

↑ **1=Culvert** (Passes 0.26 cfs of 6.14 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.26 cfs @ 11.93 fps)

Secondary OutFlow Max=13.06 cfs @ 12.13 hrs HW=147.15' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 13.06 cfs @ 1.62 fps)

Grassed Underdrained Soil Filter B Calculations

Subcatchment ID	Impervious Area (sf)	WQ Impervious Area Runoff Depth (inches)	WQ Impervious Volume Required (ft ³)	Landscaped Area (sf)	WQ Landscape Area Runoff Depth (inches)	WQ Landscape Volume Required (ft ³)	Total WQ Volume Required (ft ³)
1D	54,637	1.00	4,553	14,477	0.40	483	5,036
Total	54,637		4,553	14,477		483	5,036

Summary of Underdrain Filter Sizing	
Total WQ Volume Required (ft ³)	5,036
WQ Volume Provided (ft ³)	8,064
Filter Surface Elevation	145.00
WQ Surface Elevation	146.50
Invert of Underdrain	142.67
5% of Tributary Impervious Area (ft ²)	2,732
2% of Tributary Landscaped (ft ²)	290
Filter Surface Area Required (ft ²)	3,021
Filter Surface Area Provided (ft ²)	3,742

Underdrain Filter Volume			
Elevation	Surface Area (ft ²)	Average Stage Area (ft ²)	Cumulative Volume (ft ³)
145	3,742		0
146	5,866	4,804	4,804
146.5	7,175	6,520	8,064
147	8,483	7,829	11,979
148	11,004	9,744	21,722
Water Quality Volume Provided (at Elevation 146.5) =			8,064

Orifice Sizing	
Discharge Coefficient	0.62
Orifice Size (inches)	1.2
Orifice Size (feet)	0.10
Orifice Area (ft ²)	0.008
Orifice Centerline Elevation	142.92

Orifice Eqn: $C^*A^*(2gH)^{1/2}$

Q (cfs)	Stage Elevation	Total Drawdown at Stage	Pond Area	Drawdown Time (hrs)
0.0563	145	0.00	3,742	0.00
0.0685	146	1.00	5,866	23.78
0.0739	146.5	0.50	7,175	13.49
Total Drawdown Time =				37.26

Required Sediment Storage		Provided Storage Volume	
Area to be Sanded	1.25 acres	Total # of CB's	0
Sand Used per Storm	500 lbs/acre-storm	Sump Depth	2 ft
Weight of Sand	90 lbs/cf	CB Diameter	4 ft
# of Storms per Year	10 storms/year	CB Sediment Storage Volume	0.00 cf
Sediment Storage Required	69.68 cf/year	Forebay Volume	775 cf
		Total Volume	775.00 cf

Summary for Pond 1D: Filter B

Inflow Area = 1.587 ac, 79.05% Impervious, Inflow Depth > 2.50" for 2-Year Storm Event event
 Inflow = 4.59 cfs @ 12.09 hrs, Volume= 0.330 af
 Outflow = 0.24 cfs @ 14.18 hrs, Volume= 0.218 af, Atten= 95%, Lag= 125.3 min
 Primary = 0.24 cfs @ 14.18 hrs, Volume= 0.218 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.40' @ 14.18 hrs Surf.Area= 6,906 sf Storage= 7,341 cf
 Flood Elev= 148.00' Surf.Area= 11,104 sf Storage= 21,772 cf

Plug-Flow detention time= 175.9 min calculated for 0.218 af (66% of inflow)
 Center-of-Mass det. time= 105.3 min (862.5 - 757.2)

Volume	Invert	Avail.Storage	Storage Description
#1	145.00'	21,772 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
145.00	3,742	0	0
146.00	5,866	4,804	4,804
147.00	8,483	7,175	11,979
148.00	11,104	9,794	21,772

Device	Routing	Invert	Outlet Devices
#1	Primary	140.83'	12.0" Round Culvert L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 140.83' / 139.75' S= 0.0055 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	140.93'	2.0" Vert. Orifice/Grate C= 0.600
#3	Secondary	146.75'	20.0' long x 10.0' 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) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.24 cfs @ 14.18 hrs HW=146.40' (Free Discharge)

↑ **1=Culvert** (Passes 0.24 cfs of 5.77 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.24 cfs @ 11.17 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=145.00' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 1D: Filter B

Inflow Area = 1.587 ac, 79.05% Impervious, Inflow Depth > 3.97" for 10-Year Storm Event event
 Inflow = 7.12 cfs @ 12.09 hrs, Volume= 0.525 af
 Outflow = 1.67 cfs @ 12.48 hrs, Volume= 0.334 af, Atten= 77%, Lag= 23.8 min
 Primary = 0.25 cfs @ 12.48 hrs, Volume= 0.249 af
 Secondary = 1.41 cfs @ 12.48 hrs, Volume= 0.085 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.84' @ 12.48 hrs Surf.Area= 8,071 sf Storage= 10,675 cf
 Flood Elev= 148.00' Surf.Area= 11,104 sf Storage= 21,772 cf

Plug-Flow detention time= 144.1 min calculated for 0.334 af (64% of inflow)
 Center-of-Mass det. time= 70.1 min (818.7 - 748.6)

Volume	Invert	Avail.Storage	Storage Description
#1	145.00'	21,772 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
145.00	3,742	0	0
146.00	5,866	4,804	4,804
147.00	8,483	7,175	11,979
148.00	11,104	9,794	21,772

Device	Routing	Invert	Outlet Devices
#1	Primary	140.83'	12.0" Round Culvert L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 140.83' / 139.75' S= 0.0055 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	140.93'	2.0" Vert. Orifice/Grate C= 0.600
#3	Secondary	146.75'	20.0' long x 10.0' 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) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.25 cfs @ 12.48 hrs HW=146.84' (Free Discharge)

↑ **1=Culvert** (Passes 0.25 cfs of 5.99 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.25 cfs @ 11.62 fps)

Secondary OutFlow Max=1.38 cfs @ 12.48 hrs HW=146.84' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 1.38 cfs @ 0.75 fps)

Summary for Pond 1D: Filter B

Inflow Area = 1.587 ac, 79.05% Impervious, Inflow Depth > 5.17" for 25-Year Storm Event event
 Inflow = 9.15 cfs @ 12.09 hrs, Volume= 0.684 af
 Outflow = 4.59 cfs @ 12.25 hrs, Volume= 0.480 af, Atten= 50%, Lag= 9.5 min
 Primary = 0.26 cfs @ 12.25 hrs, Volume= 0.264 af
 Secondary = 4.33 cfs @ 12.25 hrs, Volume= 0.216 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.95' @ 12.25 hrs Surf.Area= 8,342 sf Storage= 11,526 cf
 Flood Elev= 148.00' Surf.Area= 11,104 sf Storage= 21,772 cf

Plug-Flow detention time= 114.9 min calculated for 0.478 af (70% of inflow)
 Center-of-Mass det. time= 48.8 min (793.3 - 744.6)

Volume	Invert	Avail.Storage	Storage Description
#1	145.00'	21,772 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
145.00	3,742	0	0
146.00	5,866	4,804	4,804
147.00	8,483	7,175	11,979
148.00	11,104	9,794	21,772

Device	Routing	Invert	Outlet Devices
#1	Primary	140.83'	12.0" Round Culvert L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 140.83' / 139.75' S= 0.0055 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	140.93'	2.0" Vert. Orifice/Grate C= 0.600
#3	Secondary	146.75'	20.0' long x 10.0' 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) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.26 cfs @ 12.25 hrs HW=146.95' (Free Discharge)

↑ **1=Culvert** (Passes 0.26 cfs of 6.04 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.26 cfs @ 11.73 fps)

Secondary OutFlow Max=4.31 cfs @ 12.25 hrs HW=146.95' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 4.31 cfs @ 1.10 fps)

Summary for Pond 1D: Filter B

Inflow Area = 1.587 ac, 79.05% Impervious, Inflow Depth > 7.47" for 100-Year Storm Event event
 Inflow = 13.03 cfs @ 12.09 hrs, Volume= 0.988 af
 Outflow = 11.22 cfs @ 12.14 hrs, Volume= 0.768 af, Atten= 14%, Lag= 3.2 min
 Primary = 0.26 cfs @ 12.14 hrs, Volume= 0.282 af
 Secondary = 10.97 cfs @ 12.14 hrs, Volume= 0.486 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 147.11' @ 12.14 hrs Surf.Area= 8,769 sf Storage= 12,920 cf
 Flood Elev= 148.00' Surf.Area= 11,104 sf Storage= 21,772 cf

Plug-Flow detention time= 92.6 min calculated for 0.768 af (78% of inflow)
 Center-of-Mass det. time= 34.6 min (774.7 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1	145.00'	21,772 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
145.00	3,742	0	0
146.00	5,866	4,804	4,804
147.00	8,483	7,175	11,979
148.00	11,104	9,794	21,772

Device	Routing	Invert	Outlet Devices
#1	Primary	140.83'	12.0" Round Culvert L= 196.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 140.83' / 139.75' S= 0.0055 ' S= 0.0055 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	140.93'	2.0" Vert. Orifice/Grate C= 0.600
#3	Secondary	146.75'	20.0' long x 10.0' 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) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.26 cfs @ 12.14 hrs HW=147.11' (Free Discharge)

↑ **1=Culvert** (Passes 0.26 cfs of 6.12 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.26 cfs @ 11.88 fps)

Secondary OutFlow Max=10.79 cfs @ 12.14 hrs HW=147.11' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 10.79 cfs @ 1.52 fps)

Combined Grassed Underdrained Soil Filter Draw Down

Subcatchment ID	Impervious Area (sf)	WQ Impervious Area Runoff Depth (inches)	WQ Impervious Volume Required (ft³)	Landscaped Area (sf)	WQ Landscape Area Runoff Depth (inches)	WQ Landscape Volume Required (ft³)	Total WQ Volume Required (ft³)
1C	67,097	1.00	5,591	14,652	0.40	488	6,080
1D	54,637	1.00	4,553	14,477	0.40	483	5,036
Total	121,734		10,145	29,129		971	11,115

Summary of Underdrain Filter Sizing	
Total WQ Volume Required (ft³)	11,115
WQ Volume Provided (ft³)	16,014
Filter Surface Elevation	145.00
WQ Surface Elevation	146.50
Invert of Underdrain	142.67
5% of Tributary Impervious Area (ft²)	6,087
2% of Tributary Landscaped (ft²)	583
Filter Surface Area Required (ft²)	6,669
Filter Surface Area Provided (ft²)	7,449

Underdrain Filter Volume			
Elevation	Surface Area (ft²)	Average Stage Area (ft²)	Cumulative Volume (ft³)
145	7,449	0	0
146	11,642	9,546	9,546
146.5	14,234	12,938	16,014
147	16,825	15,529	23,779
148	22,012	19,419	43,198
Water Quality Volume Provided (at Elevation 146.5) =			16,014

Orifice Eqn: $C^*A*(2gH)^{1/2}$

Orifice Sizing	
Discharge Coefficient	0.62
Orifice Size (inches)	2
Orifice Size (feet)	0.17
Orifice Area (ft²)	0.022
Orifice Centerline Elevation	142.92

Q (cfs)	Stage Elevation	Total Drawdown at Stage	Pond Area	Drawdown Time (hrs)
0.1564	145	0.00	7,449	0.00
0.1904	146	1.00	11,642	16.99
0.2052	146.5	0.50	14,234	9.63
Total Drawdown Time =			26.62	

Required Sediment Storage		Provided Storage Volume	
Area to be Sanded	1.25 acres	Total # of CB's	0
Sand Used per Storm	500 lbs/acre-storm	Sump Depth	2 ft
Weight of Sand	90 lbs/cf	CB Diameter	4 ft
# of Storms per Year	10 storms/year	CB Sediment Storage Volume	0.00 cf
Sediment Storage Required	69.68 cf/year	Forebay Volume	cf
		Total Volume	0.00 cf

Appendix F
Analysis of Downstream Ditch (Reach 1)

Summary for Pond DSC: Downstream 24" RCP Culvert

Inflow Area = 47.300 ac, 42.80% Impervious, Inflow Depth > 0.91" for 2-Year Storm Event event
 Inflow = 17.13 cfs @ 13.20 hrs, Volume= 3.570 af
 Outflow = 17.10 cfs @ 13.25 hrs, Volume= 3.570 af, Atten= 0%, Lag= 3.0 min
 Primary = 17.10 cfs @ 13.25 hrs, Volume= 3.570 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 138.34' @ 13.25 hrs Surf.Area= 924 sf Storage= 601 cf
 Flood Elev= 139.00' Surf.Area= 1,730 sf Storage= 1,470 cf

Plug-Flow detention time= 0.3 min calculated for 3.558 af (100% of inflow)
 Center-of-Mass det. time= 0.3 min (876.9 - 876.6)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	1,470 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	10	0	0
136.00	25	18	18
137.00	75	50	68
138.00	500	288	355
139.00	1,730	1,115	1,470

Device	Routing	Invert	Outlet Devices
#1	Primary	135.66'	24.0" Round Culvert L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 135.66' / 135.65' S= 0.0003 '/ Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=17.04 cfs @ 13.25 hrs HW=138.34' (Free Discharge)
 ↑1=Culvert (Barrel Controls 17.04 cfs @ 5.43 fps)

Summary for Reach R1: Downstream Roadway Ditch

Inflow Area = 47.300 ac, 42.80% Impervious, Inflow Depth > 0.91" for 2-Year Storm Event event
 Inflow = 17.14 cfs @ 13.20 hrs, Volume= 3.572 af
 Outflow = 17.13 cfs @ 13.20 hrs, Volume= 3.570 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.50 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.04 fps, Avg. Travel Time= 0.4 min

Peak Storage= 245 cf @ 13.20 hrs
 Average Depth at Peak Storage= 1.26'
 Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 44.85 cfs

Pre Development - Brown Dog Carriers

Type III 24-hr 2-Year Storm Event Rainfall=3.30"

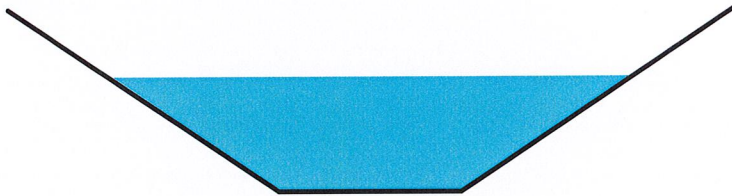
Prepared by HP Inc.

Printed 3/3/2023

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Page 2

2.00' x 2.00' deep channel, $n = 0.035$
Side Slope Z-value= 1.5 '/' Top Width= 8.00'
Length= 50.0' Slope= 0.0100 '/'
Inlet Invert= 137.00', Outlet Invert= 136.50'



Summary for Pond DSC: Downstream 24" RCP Culvert

Inflow Area = 49.949 ac, 46.21% Impervious, Inflow Depth > 0.95" for 2-Year Storm Event event
 Inflow = 17.92 cfs @ 13.23 hrs, Volume= 3.959 af
 Outflow = 17.91 cfs @ 13.26 hrs, Volume= 3.958 af, Atten= 0%, Lag= 1.3 min
 Primary = 17.91 cfs @ 13.26 hrs, Volume= 3.958 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 138.42' @ 13.26 hrs Surf.Area= 1,012 sf Storage= 670 cf
 Flood Elev= 139.00' Surf.Area= 1,730 sf Storage= 1,470 cf

Plug-Flow detention time= 0.3 min calculated for 3.958 af (100% of inflow)
 Center-of-Mass det. time= 0.3 min (875.4 - 875.1)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	1,470 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	10	0	0
136.00	25	18	18
137.00	75	50	68
138.00	500	288	355
139.00	1,730	1,115	1,470

Device	Routing	Invert	Outlet Devices
#1	Primary	135.66'	24.0" Round Culvert L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 135.66' / 135.65' S= 0.0003 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=17.90 cfs @ 13.26 hrs HW=138.42' (Free Discharge)
 1=Culvert (Barrel Controls 17.90 cfs @ 5.70 fps)

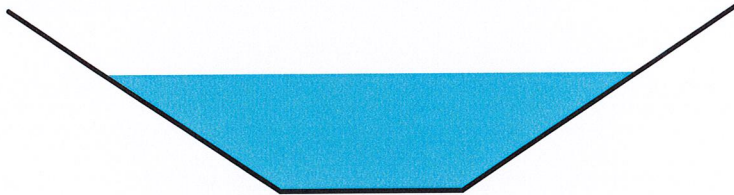
Summary for Reach R1: Downstream Roadway Ditch

Inflow Area = 49.949 ac, 46.21% Impervious, Inflow Depth > 0.95" for 2-Year Storm Event event
 Inflow = 17.93 cfs @ 13.23 hrs, Volume= 3.961 af
 Outflow = 17.92 cfs @ 13.23 hrs, Volume= 3.959 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.54 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.63 fps, Avg. Travel Time= 0.5 min

Peak Storage= 253 cf @ 13.23 hrs
 Average Depth at Peak Storage= 1.29'
 Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 44.85 cfs

2.00' x 2.00' deep channel, $n = 0.035$
Side Slope Z-value= 1.5 '/' Top Width= 8.00'
Length= 50.0' Slope= 0.0100 '/'
Inlet Invert= 137.00', Outlet Invert= 136.50'



Summary for Pond DSC: Downstream 24" RCP Culvert

Inflow Area = 47.300 ac, 42.80% Impervious, Inflow Depth > 1.95" for 10-Year Storm Event event
 Inflow = 37.17 cfs @ 13.17 hrs, Volume= 7.674 af
 Outflow = 37.83 cfs @ 13.20 hrs, Volume= 7.673 af, Atten= 0%, Lag= 1.6 min
 Primary = 37.83 cfs @ 13.20 hrs, Volume= 7.673 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 141.07' @ 13.20 hrs Surf.Area= 1,730 sf Storage= 1,470 cf
 Flood Elev= 139.00' Surf.Area= 1,730 sf Storage= 1,470 cf

Plug-Flow detention time= 0.5 min calculated for 7.648 af (100% of inflow)
 Center-of-Mass det. time= 0.5 min (861.4 - 860.9)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	1,470 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	10	0	0
136.00	25	18	18
137.00	75	50	68
138.00	500	288	355
139.00	1,730	1,115	1,470

Device	Routing	Invert	Outlet Devices
#1	Primary	135.66'	24.0" Round Culvert L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 135.66' / 135.65' S= 0.0003 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=37.77 cfs @ 13.20 hrs HW=141.06' (Free Discharge)
 ↑1=Culvert (Barrel Controls 37.77 cfs @ 12.02 fps)

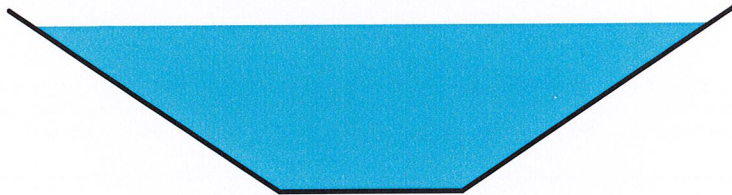
Summary for Reach R1: Downstream Roadway Ditch

Inflow Area = 47.300 ac, 42.80% Impervious, Inflow Depth > 1.95" for 10-Year Storm Event event
 Inflow = 37.18 cfs @ 13.17 hrs, Volume= 7.676 af
 Outflow = 37.17 cfs @ 13.17 hrs, Volume= 7.674 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 4.28 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.35 fps, Avg. Travel Time= 0.4 min

Peak Storage= 435 cf @ 13.17 hrs
 Average Depth at Peak Storage= 1.83'
 Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 44.85 cfs

2.00' x 2.00' deep channel, $n = 0.035$
Side Slope Z-value= 1.5 '/' Top Width= 8.00'
Length= 50.0' Slope= 0.0100 '/'
Inlet Invert= 137.00', Outlet Invert= 136.50'



Summary for Pond DSC: Downstream 24" RCP Culvert

Inflow Area = 49.949 ac, 46.21% Impervious, Inflow Depth > 2.03" for 10-Year Storm Event event
 Inflow = 38.71 cfs @ 13.19 hrs, Volume= 8.451 af
 Outflow = 38.78 cfs @ 13.16 hrs, Volume= 8.450 af, Atten= 0%, Lag= 0.0 min
 Primary = 38.78 cfs @ 13.16 hrs, Volume= 8.450 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 141.24' @ 13.16 hrs Surf.Area= 1,730 sf Storage= 1,470 cf
 Flood Elev= 139.00' Surf.Area= 1,730 sf Storage= 1,470 cf

Plug-Flow detention time= 0.5 min calculated for 8.422 af (100% of inflow)
 Center-of-Mass det. time= 0.5 min (857.3 - 856.8)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	1,470 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	10	0	0
136.00	25	18	18
137.00	75	50	68
138.00	500	288	355
139.00	1,730	1,115	1,470

Device	Routing	Invert	Outlet Devices
#1	Primary	135.66'	24.0" Round Culvert L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 135.66' / 135.65' S= 0.0003 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=38.73 cfs @ 13.16 hrs HW=141.23' (Free Discharge)
 1=Culvert (Barrel Controls 38.73 cfs @ 12.33 fps)

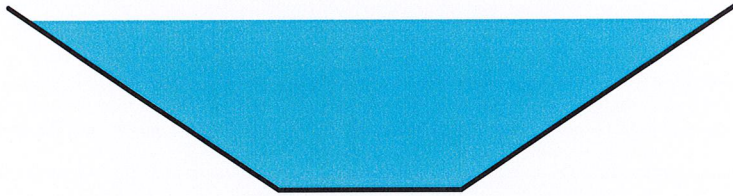
Summary for Reach R1: Downstream Roadway Ditch

Inflow Area = 49.949 ac, 46.21% Impervious, Inflow Depth > 2.03" for 10-Year Storm Event event
 Inflow = 38.71 cfs @ 13.18 hrs, Volume= 8.453 af
 Outflow = 38.71 cfs @ 13.19 hrs, Volume= 8.451 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 4.32 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.05 fps, Avg. Travel Time= 0.4 min

Peak Storage= 448 cf @ 13.18 hrs
 Average Depth at Peak Storage= 1.87'
 Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 44.85 cfs

2.00' x 2.00' deep channel, $n = 0.035$
Side Slope Z-value= 1.5 '/' Top Width= 8.00'
Length= 50.0' Slope= 0.0100 '/'
Inlet Invert= 137.00', Outlet Invert= 136.50'



Summary for Pond DSC: Downstream 24" RCP Culvert

Inflow Area = 47.300 ac, 42.80% Impervious, Inflow Depth > 2.91" for 25-Year Storm Event event
 Inflow = 51.08 cfs @ 13.20 hrs, Volume= 11.457 af
 Outflow = 52.42 cfs @ 13.20 hrs, Volume= 11.456 af, Atten= 0%, Lag= 0.3 min
 Primary = 52.42 cfs @ 13.20 hrs, Volume= 11.456 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.35' @ 13.20 hrs Surf.Area= 1,730 sf Storage= 1,470 cf
 Flood Elev= 139.00' Surf.Area= 1,730 sf Storage= 1,470 cf

Plug-Flow detention time= 0.5 min calculated for 11.417 af (100% of inflow)
 Center-of-Mass det. time= 0.5 min (854.1 - 853.6)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	1,470 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	10	0	0
136.00	25	18	18
137.00	75	50	68
138.00	500	288	355
139.00	1,730	1,115	1,470

Device	Routing	Invert	Outlet Devices
#1	Primary	135.66'	24.0" Round Culvert L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 135.66' / 135.65' S= 0.0003 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=52.41 cfs @ 13.20 hrs HW=144.34' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 52.41 cfs @ 16.68 fps)

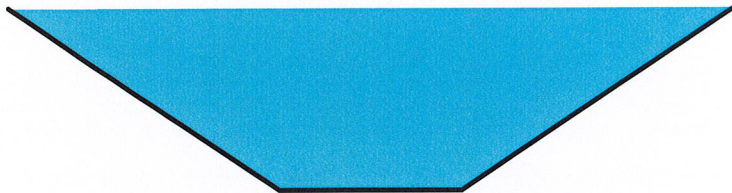
Summary for Reach R1: Downstream Roadway Ditch

Inflow Area = 47.300 ac, 42.80% Impervious, Inflow Depth > 2.91" for 25-Year Storm Event event
 Inflow = 51.08 cfs @ 13.19 hrs, Volume= 11.459 af
 Outflow = 51.08 cfs @ 13.20 hrs, Volume= 11.457 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 4.63 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.53 fps, Avg. Travel Time= 0.3 min

Peak Storage= 552 cf @ 13.19 hrs
 Average Depth at Peak Storage= 2.13'
 Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 44.85 cfs

2.00' x 2.00' deep channel, $n = 0.035$
Side Slope Z-value= 1.5 '/' Top Width= 8.00'
Length= 50.0' Slope= 0.0100 '/'
Inlet Invert= 137.00', Outlet Invert= 136.50'



Summary for Pond DSC: Downstream 24" RCP Culvert

Inflow Area = 49.949 ac, 46.21% Impervious, Inflow Depth > 3.02" for 25-Year Storm Event event
 Inflow = 52.57 cfs @ 13.22 hrs, Volume= 12.572 af
 Outflow = 54.41 cfs @ 13.25 hrs, Volume= 12.571 af, Atten= 0%, Lag= 1.7 min
 Primary = 54.41 cfs @ 13.25 hrs, Volume= 12.571 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.94' @ 13.25 hrs Surf.Area= 1,730 sf Storage= 1,470 cf
 Flood Elev= 139.00' Surf.Area= 1,730 sf Storage= 1,470 cf

Plug-Flow detention time= 0.5 min calculated for 12.571 af (100% of inflow)
 Center-of-Mass det. time= 0.5 min (849.2 - 848.8)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	1,470 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	10	0	0
136.00	25	18	18
137.00	75	50	68
138.00	500	288	355
139.00	1,730	1,115	1,470

Device	Routing	Invert	Outlet Devices
#1	Primary	135.66'	24.0" Round Culvert L= 30.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 135.66' / 135.65' S= 0.0003 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=54.38 cfs @ 13.25 hrs HW=144.93' (Free Discharge)
 ↑1=Culvert (Inlet Controls 54.38 cfs @ 17.31 fps)

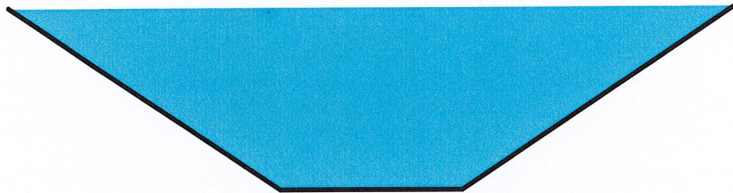
Summary for Reach R1: Downstream Roadway Ditch

Inflow Area = 49.949 ac, 46.21% Impervious, Inflow Depth > 3.02" for 25-Year Storm Event event
 Inflow = 52.57 cfs @ 13.22 hrs, Volume= 12.575 af
 Outflow = 52.57 cfs @ 13.22 hrs, Volume= 12.572 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 4.66 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.32 fps, Avg. Travel Time= 0.4 min

Peak Storage= 564 cf @ 13.22 hrs
 Average Depth at Peak Storage= 2.16'
 Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 44.85 cfs

2.00' x 2.00' deep channel, $n = 0.035$
Side Slope Z-value= 1.5 '/' Top Width= 8.00'
Length= 50.0' Slope= 0.0100 '/'
Inlet Invert= 137.00', Outlet Invert= 136.50'



Appendix G
Test Pit Information

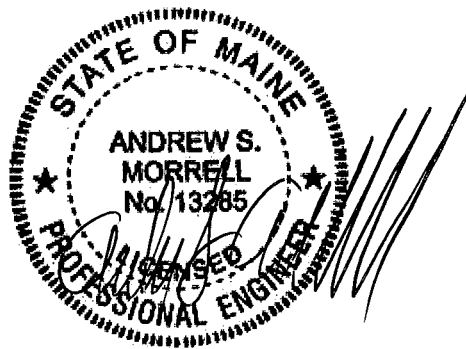
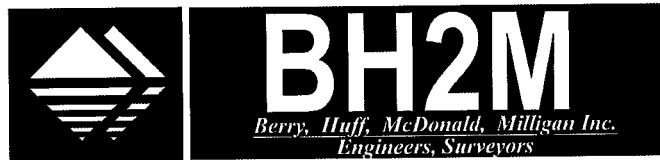
**EROSION AND SEDIMENTATION CONTROL
INSPECTION AND MAINTENANCE PLAN**

**Brown Dog Carriers & Logistics
Landry Street
Biddeford, Maine**

Submitted by:

**Brown Dog Carriers & Logistics
432 Elm Street
Biddeford, Maine 04005**

Prepared by:



Date:
March 2023

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1.0 INTRODUCTION

The intent of this plan is to establish inspection and maintenance procedures to be implemented for erosion and sediment control best management practices (BMP's) during construction, as well as for post-construction stormwater BMP's, for the Brown Dog Carriers & Logistics Project. This plan has been prepared in conformance with the requirements set forth in 06-096 Chapter 500 – Stormwater Management, and the City of Biddeford Post-Construction Stormwater Management Ordinance

1.1 PROJECT DESCRIPTION

Brown Dog Carriers & Logistics is proposing to construct an office building and gravel parking and storage area on an 11.62 acre parcel located at the corner of Landry Street and Marcel Avenue in Biddeford (Map 74, Lots 10-2, 11, & 14).

The scope of work includes but is not limited to:

- Construction of a paved access drive and employee parking area
- Construction of a gravel parking area
- Construction of an office building
- Extension of municipal utilities for water, sewer, electrical and communications
- Construction of stormwater management facilities

1.2 REQUIRED PERMITS

The following is a list of Municipal, State, and Federal permits that are required for the Project:

Municipal

City of Biddeford Site Plan Permit

State of Maine

Maine DEP Individual Stormwater Permit

Maine DEP Maine Stormwater PBR

Maine DEP NRPA PBR

Federal

Army Corps Maine General Permit

1.3 REFERENCES

This plan has been developed in accordance with the following:

- Stormwater Management Law 38 M.R.S. §420-C and §420-D
<http://legislature.maine.gov/statutes/38/title38sec420-C.html>
<http://legislature.maine.gov/statutes/38/title38sec420-D.html>
- 06-096 Chapter 500 – Stormwater Management
<http://www.maine.gov/sos/cec/rules/06/096/096c500.docx>
- General Permit – Construction Activity
Maine Pollutant Discharge Elimination System (MPDES)
<https://www.maine.gov/dep/land/stormwater/construction.html>
- Maine Erosion and Sediment Control Best Management Practices (BMPs)
Manual for Designers and Engineers
https://www.maine.gov/dep/land/erosion/escbmps/esc_bmp_engineers.pdf
- Maine Erosion and Sediment Control Practices Field Guide for Contractors
https://www.maine.gov/dep/land/erosion/escbmps/esc_bmp_field.pdf
- MaineDOT Best Management Practices for Erosion and Sedimentation Control
<https://www.maine.gov/mdot/env/documents/bmp/BMP2008full.pdf>

1.4 **RESPONSIBLE PARTIES**

Preparer/Design Engineer:

Andrew Morrell, PE
BH2M
380B Main Street
Gorham, ME 04038
(207) 839-2771

Developer/Applicant:

Brown Dog Carriers & Logistics
432 Elm Street
Biddeford, Maine 04005

Site Contractor:

Owner:

Brown Dog Carriers & Logistics
432 Elm Street
Biddeford, Maine 04005

Post Construction Stormwater Inspector:

Andrew Morrell, PE
BH2M
380B Main Street
Gorham, ME 04038
(207) 839-2771

Stormwater Maintenance:

During Construction:

Brown Dog Carriers & Logistics
432 Elm Street
Biddeford, Maine 04005

Post Construction:

During construction, the Developer/Applicant or their representatives will be responsible for implementing the erosion and sediment control BMP's as well routine inspections and maintenance of the BMP's.

Post-construction stormwater BMP inspection, maintenance, reporting, and required recertifications will be the responsibility of the Owner or their representatives.

1.5 INSPECTION AND MAINTENANCE – DURING CONSTRUCTION

Anyone who conducts or directs an activity that involves exposing, filling or displacing soil or other earthen materials should take appropriate measures to prevent erosion and the loss of sediment beyond the project site or into a sensitive resource. Erosion and sediment control measures should be in place before the activity begins and should remain functional until the site is permanently stabilized. All measures should remain effective until all areas are permanently stabilized. Any disturbed area should be regularly inspected until the site is fully stabilized with either 90% grass cover or a permanent impervious surface such as pavement. A person who has the knowledge of erosion and sediment control measures and of stormwater management practices should inspect the site at a minimum once a week, and before and after a storm event. Any failing measure should be repaired or modified to adequately stabilize the site prior to the next storm event or no later than 7 calendar days. The inspection frequency table found in Appendix D shall be used as a guide for inspecting each specific BMP. The inspection form found in Appendix B shall be used to record the inspection, its outcome, and the required maintenance.

Refer to the Plans found in Appendix A for additional erosion and sediment control details and narratives.

General Inspection, Maintenance, and Documentation Requirements

1. Inspection and corrective action: Inspect disturbed and impervious areas, erosion control measures, and material storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. Inspect these areas at least once a week as well as before and within 24 hours after a storm event, 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: If BMP's 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 additional BMPs or significant repair of BMPs are necessary, implementation must be

completed within 7 calendar days and prior to any storm event. All measures must be maintained in effective operating condition until areas are permanently stabilized.

3. Documentation: Maintain a binder with construction inspection forms summarizing the inspections and any corrective action taken. The forms must include the name and qualifications of the person making the inspections, the date of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicle access points to the parcel. Refer to Appendix B for the construction inspection form. Major observations must include BMP's that need maintenance, BMP's that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the inspection form what corrective action taken and when it was taken. The Owner shall retain a copy of the inspection forms for a period of at least five years from the completion of permanent stabilization.

Site-Specific BMP's

Refer to Appendix D for inspection and maintenance requirements and frequencies of site-specific BMP's. Refer to the Plans found in Appendix A for narratives and details of the site-specific BMP's. The following is a list of the site-specific BMP's that will require routine inspection and maintenance:

- Sedimentation Barriers (Silt Fence or Erosions Control Mix Berm)
- Stabilized Construction Entrance
- Construction Limit Barrier Fence
- Stone Check Dam
- Temporary Sediment Trap
- Temporary Grass/Stone Lined Swale
- Roadways
- Snow Storage Areas
- Drain Manholes
- Sediment Forebays
- Pipe Outlets
- Grassed Underdrained Soil Filters

Winter Construction

Winter construction is construction activity performed during the period from November 1 through April 15. If disturbed areas are not stabilized with permanent measures by November 1 or new soil disturbance occurs after November 1, but before April 15, then these areas must be protected and runoff from them must be controlled by additional measures and restrictions.

1. Site Stabilization: For winter stabilization, hay mulch is applied at twice the standard temporary stabilization rate. At the end of each construction day, areas that have been brought to final grade must be stabilized. Mulch may not be spread on top of snow.
2. Sediment Barriers: All areas within 75 feet of a protected natural resource must be protected with a double row of sediment barriers.
3. Ditches: All vegetated ditch lines that have not been stabilized by November 1, or will be worked during the winter construction period, must be stabilized with an appropriate stone lining backed by an appropriate gravel bed or geotextile unless specifically released from this standard by Maine DEP.
4. Slopes: Mulch netting must be used to anchor mulch on all slopes greater than 8% unless erosion control blankets or erosion control mix is being used on these slopes.

Refer to the Plans contained in Appendix A for additional winter construction erosion and sediment control requirements.

1.6 INSPECTION AND MAINTENANCE – POST-CONSTRUCTION

The long-term operation and maintenance of a stormwater management system is as critical to its performance as its design and construction. Proper operation and maintenance practices ensure that stormwater BMP's continue to improve water quality by removing pollutants effectively over the long-term and decreasing the risk of re-suspending sediment. Without proper maintenance, BMPs are likely to fail and will no longer provide treatment of stormwater. The following includes a summary of the inspection, maintenance, and documentation requirements for post-construction stormwater BMP's.

Refer to the Plans contained in Appendix A for details and locations of site-specific post-construction BMP's.

General Inspection, Maintenance, and Documentation Requirements

1. Inspection and maintenance: All measures must be maintained in effective operating condition. A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct the inspections. 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) Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after significant rainfall events (1 inch in 24-hour period) to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.
 - b) Inspect ditches, swales and other open stormwater channels in the spring, in late fall, and after significant rainfall events (1 inch in 24-hour period) to remove any obstructions to flow, remove accumulated sediments and debris, to control vegetated growth that could obstruct flow, and to repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or side slopes.
 - c) Inspect culverts in the spring, in late fall, and after heavy rains to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to repair any erosion damage at the culvert's inlet and outlet.
 - d) Inspect catch basins and drain manholes annually and clean out either when the sump is half full or when sediment is within one foot of the invert of the outlet pipe. Clean-out must include the removal and legal disposal of any accumulated sediments and debris at the bottom of the basin, at any inlet grates, at any inflow channels to the basin, and at any pipes between basins. If the basin outlet is designed to trap floatable materials, then remove the floating debris and any floating oils (using oil- absorptive pads).

- e) Inspect at least once per year, each underdrained soil filter, including the filter embankments, vegetation, underdrain piping, and overflow spillway. Remove and dispose of accumulated sediments in the filter. If needed, rehabilitate any clogged surface linings, and flush underdrain piping.

2. Regular maintenance

1. Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader. Grading of gravel roads, or grading of the gravel shoulders of gravel or paved roads, must be routinely performed to ensure that stormwater drains immediately off the road surface to adjacent buffer areas or stable ditches, and is not impeded by accumulations of graded material on the road shoulder or by excavation of false ditches in the shoulder. If water bars or open-top culverts are used to divert runoff from road surfaces, clean-out any sediments within or at the outlet of these structures to restore their function.
3. Documentation: Maintain a binder of inspection forms summarizing inspection, maintenance, and any corrective actions taken. The inspection forms 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. Refer to Appendix C for inspection forms. If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed of after removal. The log must be made accessible to Department staff and a copy provided to the Department upon request. The Owner shall retain a copy of the logs for a period of at least five years from the completion of permanent stabilization.
4. The site-specific post-construction BMP's for the Contractor Business Park include the following:
 - Vegetated swales
 - Roadways and shoulders
 - Storm Drain System
 - Snow storage areas
 - Rip rap inlet and outlet aprons
 - Sediment forebay
 - Pipe outlets
 - Grassed Underdrained Soil Filter

1.7 RECERTIFICATION OF STORMWATER MANAGEMENT SYSTEMS

All projects permitted under Stormwater Management Law since 2005 require reporting every 5 years. Certification must be sent to the Department of Environmental Protection within three months of the expiration of each five-year interval from the date of issuance of the permit stating that the stormwater management system has been inspected, maintained, and repaired (if needed). Refer to **Condition #** of the Stormwater Management Law Permit Order contained in Appendix G. The standard form for “Five-Year Recertification for Long-Term Maintenance of Stormwater Management Systems” is contained in Appendix E. The general inspection and maintenance requirements include but are not limited to the following:

The general inspection and maintenance requirements include but are not limited to the following:

1. Identification and repair of erosion problems: All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.
2. Inspection and repair of stormwater control system: All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.
3. Maintenance: The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the Department, and the maintenance log is being maintained.

Note: Municipalities with separate storm sewer systems regulated under the Maine Pollutant Discharge Elimination System (MPDES) Program may report on all regulated systems under their control as part of their required annual reporting in lieu of separate certification of each system. Municipalities not regulated by the

MPDES Program, but that are responsible for maintenance of permitted stormwater systems, may report on multiple stormwater systems in one report.

1.8 HOUSEKEEPING

The following performance standards shall apply:

1. Spill prevention: Controls must be used to prevent pollutants from construction and waste materials stored 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.

NOTE: Any spill or release of toxic or hazardous substances must be reported to the Department. For oil spills, call 1-800-482-0777 which is available 24 hours a day. For spills of toxic or hazardous material, call 1-800-452-4664 which is available 24 hours a day. For more information, visit the Department's website at :
<http://www.maine.gov/dep/spills/emergspillresp/>

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.

See 06-096 Chapter 500 - Appendix D for license by rule standards for infiltration of stormwater.

NOTE: Lack of appropriate pollutant removal best management practices (BMPs) may result in violations of the groundwater quality standard established by 38 M.R.S.A. §465-C(1).

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, 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.

NOTE: Take care in sourcing water. Dewatering a stream without a permit from the Department may violate state water quality standards and the *Natural Resources Protection Act*.

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.

NOTE: To prevent these materials from becoming a source of pollutants, construction and post- construction activities related to a project may be required to comply with applicable provision of rules related to solid, universal, and hazardous waste, including, but not limited to, the Maine solid waste and hazardous waste management rules; Maine hazardous waste management rules; Maine oil conveyance and storage rules; and Maine pesticide requirements.

5. 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.

NOTE: Dewatering controls are discussed in the “Maine Erosion and Sediment Control BMPs, Maine Department of Environmental Protection.”

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;
 - 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;
 - k) Potable water sources including waterline flushings; and
 - l) Landscape irrigation.
7. Unauthorized non-stormwater discharges: The Department's approval under this Chapter does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with 06-096 Chapter 500 - Appendix C (6). Specifically, the Department's approval does not authorize discharges of the following:
- a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;
 - b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;
 - c) Soaps, solvents, or detergents used in vehicle and equipment washing; and
 - d) Toxic or hazardous substances from a spill or other release.
8. Additional requirements: Additional requirements may be applied on a site-specific basis.



NO.	DATE	REVISION
1	1/15/23	Per my Survey

DESIGNED	A. Hensell
DRAWN	D. Hensell
CHECKED	A. Hensell
DATE	Jan 2022
SCALE	1" = 40'
JOB NO.	21-02

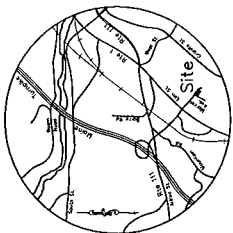
BH2M
BERRY, HOFF, McDONALD, MILLIGAN INC.
Engineers, Surveyors
1000 Main Street
Durham, Maine 04422
Tel: (207) 839-8210
Fax: (207) 839-8210

Brown Dog Carriers & Logistics
13 Elm Street
Biddeford, ME
Biddeford, ME
Biddeford, ME

STANDARD BOUNDARY SURVEY
LAND OF
BROWN DOG CARRIERS & LOGISTICS
MARCEL AVENUE
BIDDEFORD, MAINE

DATE	Jan 2022
SCALE	1" = 40'
JOB NO.	21-02
CHECKED	A. Hensell
DRAWN	D. Hensell
DESIGNED	A. Hensell

3
SHEET
APPROVED FOR RECORD BY ME
AND FOR THE RECORD BY THE
COUNTY OF MAINE



LOCATION MAP
SCALE: 1" = 1 MILE

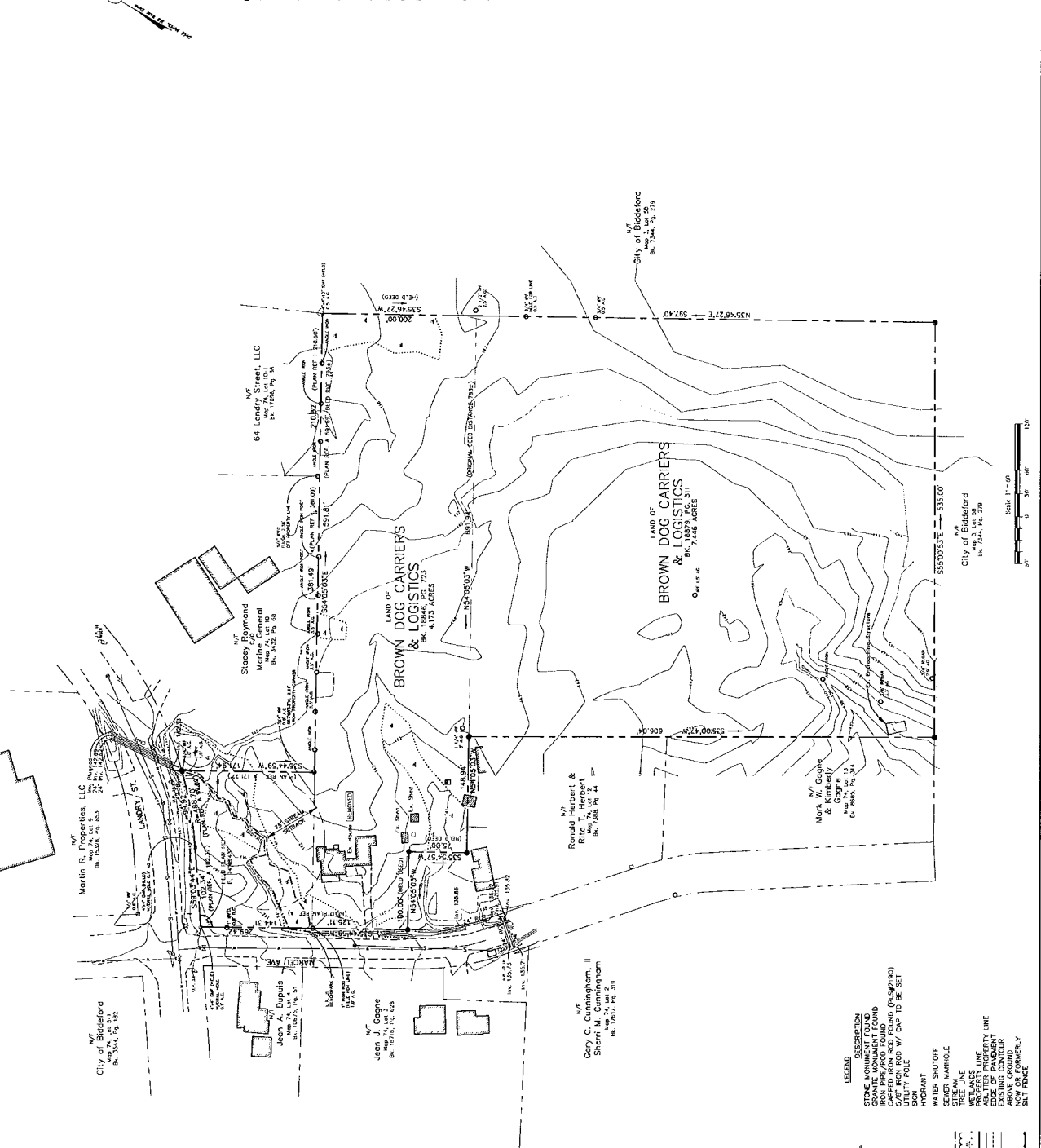
- NOTES:**
1. OWNER/APPLICANT: BROWN DOG CARRIERS & LOGISTICS, LLC, 13 ELM STREET, BIDDEFORD, ME 04422
 2. SURVEYOR: ROBERT C. LIBBY JR., P.L.S. #2190, 3008 MAIN STREET, CORNELL, MAINE
 3. METAL DELINEATION: ALEXANDER FINMORE, CWS, LSE, DURHAM, MAINE 04222
 4. DEED REFERENCE: BK. 18845, PG. 723 & BK. 18878, PG. 311
 5. TAX MAP REFERENCE: MAP 74, LOT 11 & MAP 74, LOT 10-2
 6. ZONING: I2, INDUSTRIAL 2
 7. MINIMUM STANDARDS: SETBACKS - 50' FRONT, 10' SIDE, 10' REAR, 10' CORNER, 10' STREET, 25' SIDE AND REAR, 10' CORNER, 10' STREET, 10' AT RESIDENTIAL DISTRICT
 8. LOT AREA: 1.619 ACRES
 9. PLAN REFERENCES: A. "PLAN OF RESUBDIVISION OF LOT 11, AIRPORT AND PARK II LAND OF THE CITY OF BIDDEFORD, ME ON LAND OF ST. BY THE CITY OF BIDDEFORD, ME, ENGINEERING OF DEEDS BOOK 132 PAGE 23.
 10. PLAN REFERENCES: B. "PLAN SHOWING A PORTION OF MARCEL AVENUE N. BIDDEFORD, ME DATED SEPT. 1978, ENGINEERING OF DEEDS BOOK 162 PAGE 23.
 11. PLAN REFERENCES: C. "PLAN SHOWING PROPOSED ACQUISITION OF LANDS FOR THE CITY OF BIDDEFORD, ME, ENGINEERING OF DEEDS BOOK 162 PAGE 23.
 12. PLAN REFERENCES: D. "PLAN SHOWING PROPOSED ACQUISITION OF LANDS FOR THE CITY OF BIDDEFORD, ME, ENGINEERING OF DEEDS BOOK 162 PAGE 23.
 13. PLAN REFERENCES: E. "PLAN OF LAND OF FERNAND OUELLETTE" ENGINEERING OF DEEDS BOOK 66, PAGE 32.
 14. PLAN REFERENCES: F. "SITE PLAN, DEMPSEY DRIVE ON MARCEL AVENUE, BIDDEFORD, ME, ENGINEERING OF DEEDS BOOK 407 PAGE 18.

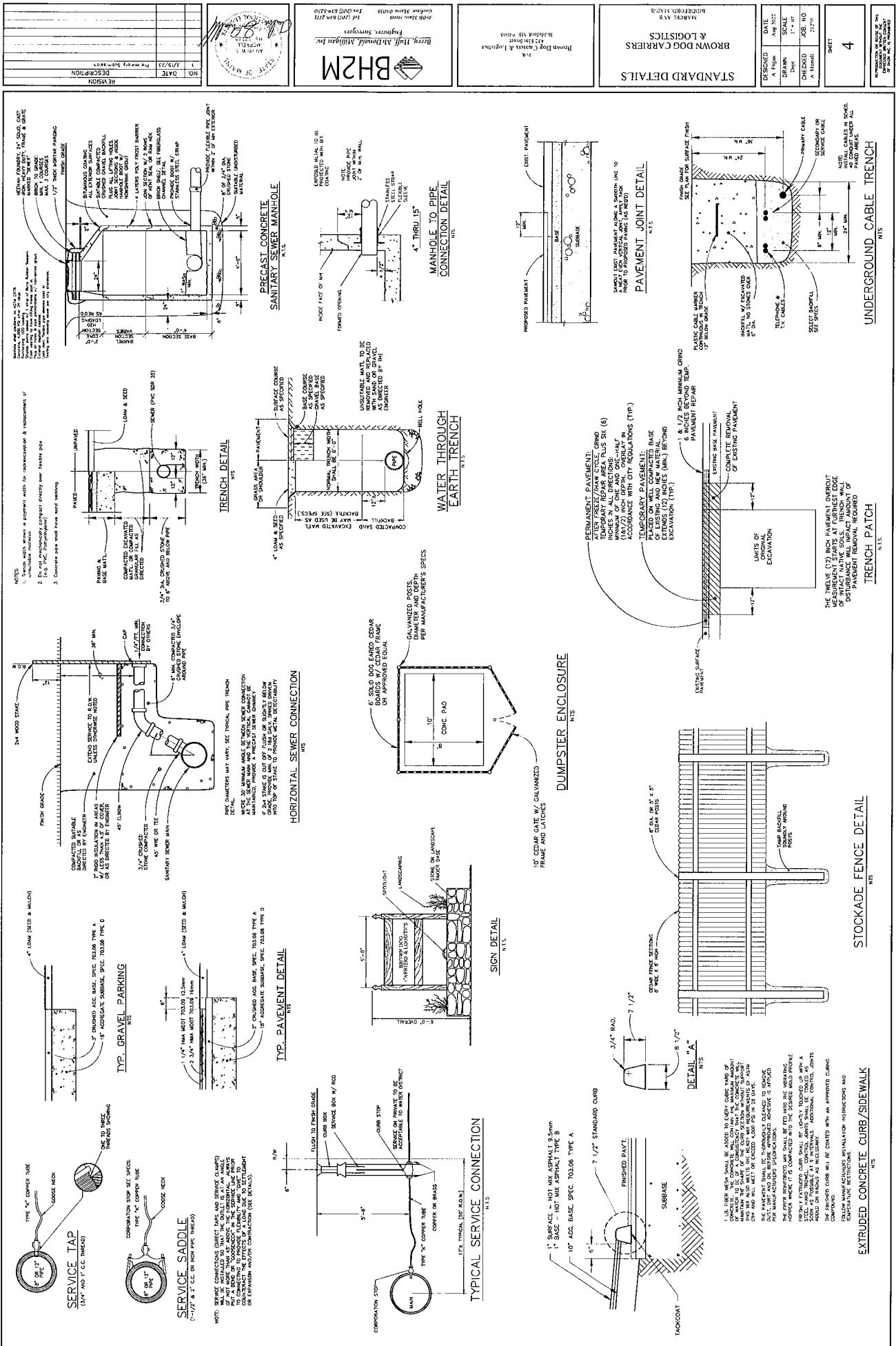
1. NO SURVEYOR REPORT

LIBBY JR. HAS THIS SURVEY CONFORMS TO THE MAINE BOARD OF SURVEYORS FOR PROFESSIONAL LAND SURVEYORS. THIS SURVEY CONFORMS TO THE MAINE BOARD OF SURVEYORS FOR A STANDARD BOUNDARY SURVEY WITH THE FOLLOWING EXCEPTIONS:

1. NO SURVEYOR REPORT

ROBERT C. LIBBY JR. PLS #2190

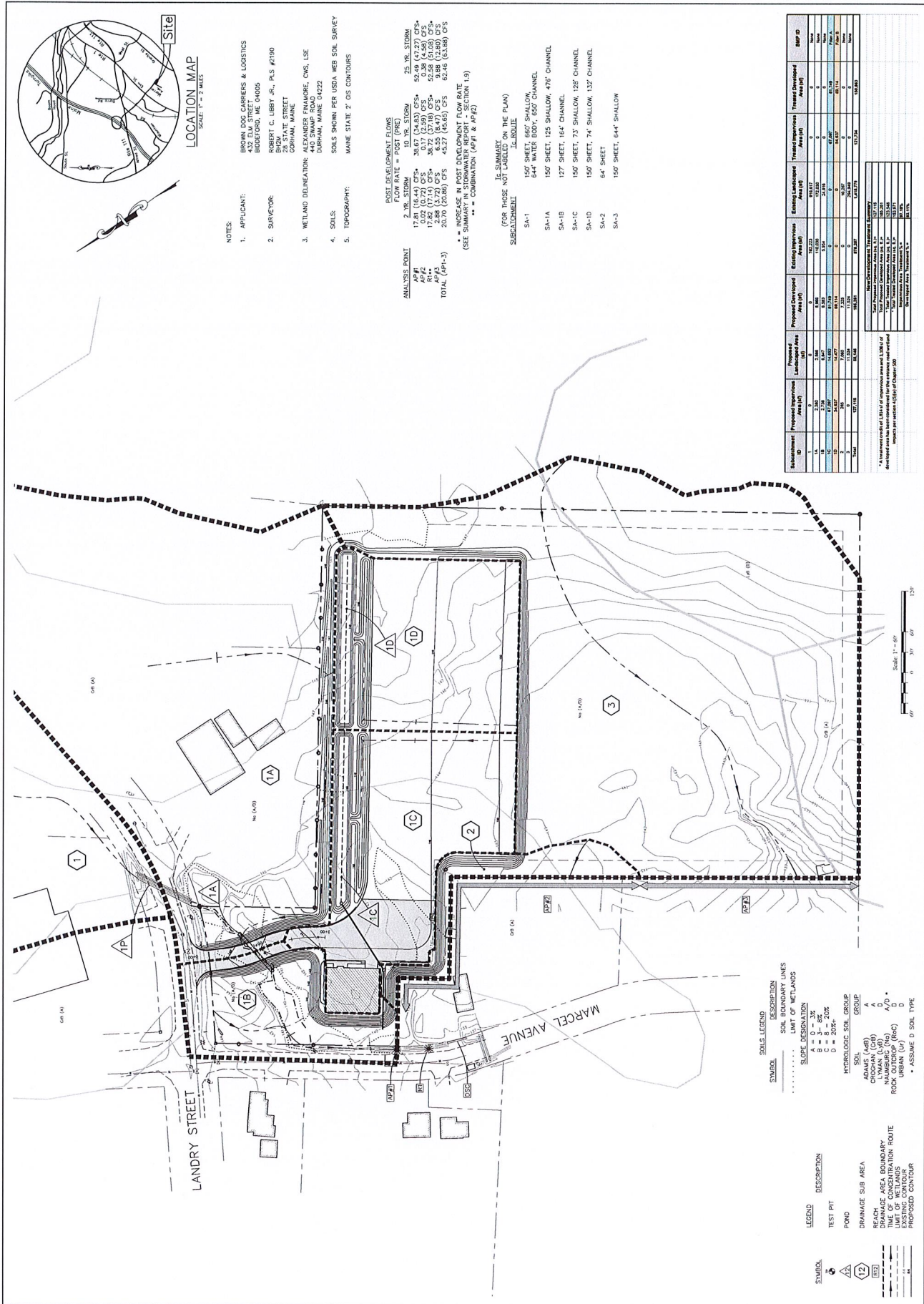






Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Driveway/Parking Lot	+	1.4 fc	8.3 fc	0.5 fc	16.6:1	2.8:1
Gravel Parking	+	1.0 fc	2.2 fc	0.3 fc	7.3:1	3.3:1
Outside of Parking Lot	+	0.2 fc	11.0 fc	0.0 fc	N/A	N/A

Symbol	Label	Image	QTY	Manufacturer	Catalog Number	Description	Lamp	File Name	Lumens	Lamp	ULF	Wattage	Distribution	Polar Plot
◩	S3		2	Lithonia Lighting	DSX0 LED P4 30K 80CRI TFM HS MOUL SWA D0X80 with SSS 20 4C DH194S D0X80	D-Series Size 0 Area Features mounted at 22ft (20ft pad on 2ft bases)	LED	DSX0_LED_P4 30K_80CRLLT PFiles	9995	0.9	93.04	TYPE IV, SHORT, BUSHING, BATTING: B2 - U1 - G3		
◩	S4		1	Lithonia Lighting	DSX0 LED P4 30K 80CRI TFM HS MOUL SWA D0X80 with SSS 20 4C DH194S D0X80	D-Series Size 0 Area Features mounted at 22ft (20ft pad on 2ft bases)	LED	DSX0_LED_P4 30K_80CRLLT PFiles	9998	0.9	93.04	TYPE IV, SHORT, BUSHING, BATTING: B2 - U1 - G3		
◩	S4+HS		2	Lithonia Lighting	DSX0 LED P4 30K 80CRI TFM HS MOUL SWA D0X80 with SSS 20 4C DH194S D0X80	D-Series Size 0 Area Features with shield mounted at 22ft (20ft pad on 2ft bases)	LED	DSX0_LED_P4 30K_80CRLLT PFiles	8109	0.9	93.04	TYPE IV, SHORT, BUSHING, BATTING: B2 - U1 - G2		
◩	T4		8	Lithonia Lighting	DSX0 LED P6 30K 80CRI TFM HS MOUL SWA D0X80 with SSS 25 4C DH194S D0X80	D-Series Size 0 Area Features mounted at 22ft (20ft pad on 3ft bases)	LED	DSX0_LED_P6 30K_80CRLLT PFiles	12523	0.9	137	TYPE IV, SHORT, BUSHING, BATTING: B2 - U1 - G4		
◩	W1		6	Lithonia Lighting	W0G01 LED P2 30K 80CRI V2 MOUL SWA SHN D0X80	W0G01 LED WITH P2 - PERFORMANCE PERFORMANCE MOUL VISUAL COMFORT FORWARD MOUL VIS; mounted at 10ft	LED	W0G01_LED_P 2_30K_80CRLLT VFiles	1872	0.9	15.078	TYPE II, VERTICAL, BUSHING, BATTING: B2 - U1 - G3		
◩	W2		2	Lithonia Lighting	W0G03 LED P3 30K 80CRI R4 MOUL SHN D0X80	W0G03 LED WITH P3 - PERFORMANCE PERFORMANCE MOUL SHN 7 MOUL VIS; 4 OPTIC; mounted at 20ft	LED	W0G03_LED_P 3_70CRI_R4_3 0KFiles	9548	0.9	71.952	TYPE IV, SHORT, BUSHING, BATTING: B2 - U1 - G2		



Appendix B
Construction Inspection Forms

CONSTRUCTION INSPECTION FORM FOR EROSION AND SEDIMENT CONTROL						
General Information:						
Site Name:		Date:		Inspected by:		
Owner:						
Retained 3PI:		Last Rain Date:			Amount:	
Reason for Inspection:		Weekly	Winter	Final	Rain Event	Complaint
Description of disturbed area:						
Photos:						
		YES/NO/NA	COMMENTS			
1. Is an Erosion and Sediment Control Plan available?						
ESC plan on-site and followed						
Other:						
2. Are all erosion control practices installed properly, maintained and functioning?						
Disturbed areas stable						
Concentrated flow inlet/outlet protection						
All areas at final grade						
Disturbed dormant areas stabilized						
Access roads and parking						
Hillsides and stockpiles						
Other:						
3. Are all sedimentation control practices installed properly, maintained and functioning?						
Construction entrance						
Sedimentation basins/traps/diversions						
Perimeter controls						
Check dams						
Other:						
4. Is maintenance of ESC measures, construction activities and housekeeping kept-up?						
Sedimentation/erosion in ditches						
Tracked Sediment or dust at exits						
Hazardous material storage and spill control practices						
Waste management (concrete, hazardous material, etc.)						
Other:						
5. Violation, Corrective Actions, Recommendations						
Sediment discharged from site?						
Corrective action required?						
Site compliant with all permits?						
Notice of violation or stop work order issued?						
Comments/Corrective Actions (complete corrective actions before the next rain event and within 7 day)						

Appendix C
Post-Construction Inspection Forms

Brown Dog Carriers & Logistics Post-Construction Inspection Form (Ditches, Swales and Open Stormwater Channels)					
Project name:		Date:		Inspected by:	
Owner name:					
Last rain date:		Amount:			
Reason for inspection:		Rain Event	Monthly	Annually	Maint. Performed
					Other (Specify)
General description of BMP condition/recent maintenance performed:					
Photos: (Attach)					
Inspection Details		Comments		Maintenance Required	
Obstructions, sediment or debris noticeable in ditch line?					
Mowing required?					
Woody vegetation apparent in ditches?					
Side slopes stable? Signs of slumping?					
Rip rap stable? Underlying filter fabric visible?					
Additional Comments:					

Brown Dog Carriers & Logistics**Post-Construction Inspection Form (Vegetated Area)**

Project name:	Date:	Inspected by:
---------------	-------	---------------

Owner name:

Last rain date:	Amount:
-----------------	---------

Reason for inspection:	Rain Event	Monthly	Annually	Maint. Performed	Other (Specify)
------------------------	------------	---------	----------	------------------	-----------------

General description of BMP condition/recent maintenance performed:
--

Photos: (Attach)

Inspection Details	Comments	Maintenance Required
All slopes and embankments well vegetated? Signs of sparse growth?		
Rill erosion apparent in vegetated areas?		
Downs slope of level spreaders/ditch turnouts stable?		
Mowing of vegetated areas appropriate?		

Additional Comments:

Brown Dog Carriers & Logistics**Post-Construction Inspection Form (Roadway and Parking Areas)**

Project name:

Date:

Inspected by:

Owner name:

Last rain date:

Amount:

Reason for inspection:

Rain
Event

Monthly

Annually

Maint.
PerformedOther
(Specify)

General description of BMP condition/recent maintenance performed:

Photos: (Attach)

Inspection Details**Comments****Maintenance
Required**

Winter sand accumulation apparent?

Pavement Sweeping required?

Gravel shoulders graded appropriately?

Gravel road grading required?

Low spots causing puddling?

Additional Comments:

Brown Dog Carriers & Logistics Post-Construction Inspection Form (Storm Drain System including catch basins and culverts)					
Project name:		Date:		Inspected by:	
Owner name:					
Last rain date:		Amount:			
Reason for inspection:		Rain Event	Monthly	Annually	Maint. Performed
					Other (Specify)
General description of BMP condition/recent maintenance performed:					
Photos: (Attach)					
Inspection Details		Comments		Maintenance Required	
Accumulated debris or sediment at inlet, outlet, or within culvert/storm drain?					
Flow obstructions present?					
Erosion apparent at culvert inlet/outlet?					
Accumulated debris around catch basin grate?					
Accumulated debris in catch basin sump?					
Floating debris or oils found in catch basins?					
Additional Comments:					

Brown Dog Carriers & Logistics Post-Construction Inspection Form (Underdrain Filter)					
Project name:		Date:		Inspected by:	
Owner name:					
Last rain date:		Amount:			
Reason for inspection:		Rain Event	Monthly	Annually	Maint. Performed
					Other (Specify)
General description of BMP condition/recent maintenance performed:					
Photos: (Attach)					
Inspection Details		Comments		Maintenance Required	
Debris apparent in basin bottom?					
Vegetation established in basin bottom?					
Basin draining within 72 hours?					
Inlet forebay rip rap stable and free of debris?					
Embankment and side slopes stable? Sloughs or unvegetated areas apparent?					
Outlet free of debris? Rip rap stable?					
Valve in operating condition?					
Outlet control structure operational free of debris?					
Orifice free of debris and operational?					
Additional Comments:					

Appendix D
Inspection Frequency Checklist and Long-Term Inspection & Maintenance Plan

EROSION AND SEDIMENT CONTROL MEASURES AND ACTIVITY	INSPECTION FREQUENCY		
	Weekly	Before and After a Storm	After Construction
SEDIMENT BARRIERS			
Sediment barriers are installed prior to soil disturbances	X	X	
Silt fences are keyed in and tight	X	X	
Barriers are repaired and replaced as necessary	X	X	
Barriers are removed when the site is stabilized - Silt fence should be cut at the ground surface			X
TEMPORARY STABILIZATION			
Areas are stabilized if idle for 14 days or more	X	X	
Daily stabilization within 100 ft of a natural resource	X	X	
MULCH			
Seed and mulch within 7 days of final grading. Ground is not visible	X	X	
Erosion control mix is 4-6 inch thick	X	X	
Erosion control blankets or hay mulch are anchored	X	X	
VEGETATION			
Vegetation provides 90% soil cover	X		X
Loam or soil amendment were provided	X		X
New seeded areas are mulched and protected from vehicle, foot traffic and runoff	X	X	X
Areas that will remain unworked for more than 1 year are vegetated with grass	X		
SLOPES AND EMBANKMENTS			
Final graded slopes and embankments are stabilized	X	X	X
Diversions are provided for areas with rill erosion	X	X	X
Areas steeper than 2:1 are riprapped	X		
Stones are angular, durable and various in size	X		
Riprap is underlain with a gravel layer or filter fabric	X		
STORMWATER CHANNELS AND CULVERTS			
Ditches and swales are permanently stabilized—channels that will be riprapped have been over-excavated	X	X	X
Ditches are clear of obstructions, accumulated sediments or debris	X	X	X
Ditch lining/bottoms are free of erosion	X	X	X
Check dams are spaced correctly to slow flow velocity	X		
Underlying filter fabric or gravel is not visible	X	X	X
Culvert aprons and plunge pools are sized for expected flows volume and velocity	X		
Stones are angular, durable and various in size	X		
Culverts are sized to avoid upgradient flooding	X	X	
Culvert protection extends to the maximum flow elevation within the ditch	X	X	X
Culvert is embedded, not hanging	X	X	X

CATCH BASIN SYSTEMS			
Catch basins are built properly	X		
Accumulated sediments and debris are removed from sump, grate and collection area		X	X
Floating debris and floating oils are removed from trap			X
ROADWAYS AND PARKING SURFACES			
The gravel pad at the construction entrance is clear from sediments	X	X	
Roads are crowned		X	X
Cross drainage (culvert) is provided	X		
False ditches (from winter sand) are graded		X	X
BUFFERS			
Buffers are free of erosion or concentrated flows		X	X
The downgradient of spreaders and turnouts is stable		X	X
Level spreaders are on the contour			X
The number of spreaders and ditch turnouts is adequate for flow distribution		X	X
Any sediment accumulation is removed from within spreader or turnouts		X	X
STORMWATER BASINS AND TRAPS			
Embankments are free of settlement, slope erosion, internal piping, and downstream swamping		X	X
All flow control structure or orifices are operational and clear of debris or sediments		X	X
Any pre-treatment structure that collects sediment or hydrocarbons is clean or maintained		X	X
Vegetated filters and infiltration basins have adequate grass growth			X
Any impoundment or forebay is free of sediment		X	X
WINTER CONSTRUCTION (November 1st-April 15th)			
Final graded areas are mulched daily at twice the normal rate with hay, and anchor (not on snow)	Daily		
A double row of sediment barrier is provided for all areas within 100 ft of a sensitive resource (use erosion control mix on frozen ground)	Daily		
Newly constructed ditches are riprapped	Daily		
Slopes greater than 8% are covered with an erosion control blanket or a 4-inch layer of erosion control mix	Daily		
HOUSEKEEPING PUNCH LIST			
All disturbed areas are permanently stabilized, and plantings are established (grass seeds have germinated with 90% vegetative cover)			X
All trash, sediments, debris or any solid waste have been removed from stormwater channels, catch basins, detention structures, discharge points, etc.			X
All ESC devices have been removed: (silt fence and posts, diversions and sediment structures, etc.)			X
All deliverables (certifications, survey information, as-built plans, reports, notice of termination (NOT), etc.) in accordance with all permit requirements have been submitted to town, Maine DEP, association, owner, etc.			X

INSPECTION AND MAINTENANCE PLAN FOR STORMWATER MANAGEMENT STRUCTURES (BMPS)

	INSPECTION SCHEDULE	CORRECTIVE ACTIONS
VEGETATED AREAS	Annually early spring and after heavy rains	Inspect all slopes and embankments and replant areas of bare soil or with sparse growth
		Armor rill erosion areas with riprap or divert the runoff to a stable area
		Inspect and repair down-slope of all spreaders and turn-outs for erosion
		Mow vegetation as specified for the area
DITCHES, SWALES AND OPEN STORMWATER CHANNELS	Annually spring and late fall and after heavy rains	Remove obstructions, sediments or debris from ditches, swales and other open channels
		Repair any erosion of the ditch lining
		Mow vegetated ditches
		Remove woody vegetation growing through riprap
		Repair any slumping side slopes
CULVERTS	Spring and late fall and after heavy rains	Repair riprap where underlying filter fabric or gravel is showing or if stones have dislodge
		Remove accumulated sediments and debris at the inlet, outlet, or within the conduit
		Remove any obstruction to flow
CATCH BASINS	Annually in the spring	Repair any erosion damage at the culvert's inlet and outlet
		Remove sediments and debris from the bottom of the basin and inlet grates
ROADWAYS AND PARKING AREAS	Annually in the spring or as needed	Remove floating debris and oils (using oil absorptive pads) from any trap
		Clear and remove accumulated winter sand in parking lots and along roadways
		Sweep pavement to remove sediment
		Grade road shoulders and remove accumulated winter sand
		Grade gravel roads and gravel shoulders
		Clean out the sediment within water bars or open-top culverts
RESOURCE AND TREATMENT BUFFERS	Annually in the spring	Ensure that stormwater runoff is not impeded by false ditches of sediment in the shoulder
		Inspect buffers for evidence of erosion, concentrated flow, or encroachment by development
		Manage the buffer's vegetation with the requirements in any deed restrictions
		Repair any sign of erosion within a buffer
		Inspect and repair down-slope of all spreaders and turn-outs for erosion
		Install more level spreaders, or ditch turn-outs if needed for a better distribution of flow
		Clean out any accumulation of sediment within the spreader bays or turnout pools
WETPONDS AND DETENTION BASINS	Annually in fall and after heavy rains	Mow non-wooded buffers no shorter than six inches and less than three times per year
		Inspect the embankments for settlement, slope erosion, piping, and slumping
		Mow the embankment to control woody vegetation
		Inspect the outlet structure for broken seals, obstructed orifices, and plugged trash racks
		Remove and dispose of sediments and debris within the control structure
		Repair any damage to trash racks or debris guards
FILTRATION AND INFILTRATION BASINS	Annually in the spring and late fall	Replace any dislodged stone in riprap spillways
		Remove and dispose of accumulated sediments within the impoundment and forebay
		Clean the basin of debris, sediment and hydrocarbons
		Provide for the removal and disposal of accumulated sediments within the basin
		Renew the basin media if it fails to drain within 72 hours after a one inch rainfall event
PROPRIETARY DEVICES	As specified by manufacturer	Till, seed and mulch the basin if vegetation is sparse
		Repair riprap where underlying filter fabric or gravel is showing or where stones have dislodged
OTHER PRACTICES	As specified for devices	Contract with a third-party for inspection and maintenance
		Follow the manufacturer's plan for cleaning of devices
		Contact the department for appropriate inspection and maintenance requirements for other drainage control and runoff treatment measures.

FIVE-YEAR RECERTIFICATION FOR LONG-TERM MAINTENANCE OF STORMWATER MANAGEMENT SYSTEMS

For Site Location & Stormwater Projects

This form complies with the condition that requires reporting every 5 years on the long-term maintenance of stormwater management structures of projects permitted under the Stormwater Management Law since 2005. Complete the following sections, include inspection photos, and use additional paper if needed. A copy of the report if the inspection was performed by a professional experienced in BMP maintenance should be included. Electronic copy of this form and information about the five-year recertification are available on the Maine DEP website at: <http://www.maine.gov/dep/land/stormwater/stormwaterbmps/>

Please type or print in black ink only			
Owner/Licensee		3rd Party Inspection Company (if applicable)	
Name of Representative:		Name of Inspector or preparer of report:	
Company:		Company:	
Mailing Address:		Mailing Address:	
Daytime Phone #:		Daytime Phone #:	
E-mail Address:		E-mail Address:	

LOCATION OF DEVELOPMENT			
Name of Project:			
Address and Town:			
DEP Permit Number:		Year of Permit:	

PROJECT SPECIFICS	
If the project is unfinished, please describe its current status and your plans for the future. The filing of this report of on-site long-term maintenance activities is still required.	
If the project is within a MPDES Regulated Town, the maintenance report prepared for the town should be submitted with this form.	
If the project is a subdivision with a Homeowner's association, identify the responsible party.	
Confirm that the required recording of deed restrictions for the protection of buffers or conservation land has been done, and that the buffers are maintained according to the restrictions.	
Identify the contractor for the required renewal of a 5-year maintenance contract for the inspection, cleaning and maintenance of manufactured proprietary structures.	
Is a maintenance log available for review?	

LONG-TERM MAINTENANCE (please comment on the following):

All areas of the development have been inspected for erosion, and appropriate steps have been taken to permanently stabilize these areas.

All stormwater control structures have been inspected for damage, wear, malfunction, and appropriate steps have been taken to repair or replace the failing systems.

The erosion control and stormwater maintenance plan for the site is being implemented as written, and a maintenance log has been created and is being maintained.

CERTIFICATIONS/SIGNATURES

By signing below, the owner (or authorized agent) certifies that all stormwater management structures at the project described above are stable and operational as designed.

Signed: _____ Title _____ Date: _____

This completed form and all supporting documents summarized above shall be sent to the following address. An emailed report is appropriate and should be sent to Recert-DEP@maine.gov

Five-year Recertification
Bureau of Land Resources
17 State House Station
Augusta, ME 04333
Tel: (207) 287-2624 or (207) 287-2602

Appendix F
Stormwater Report Narrative

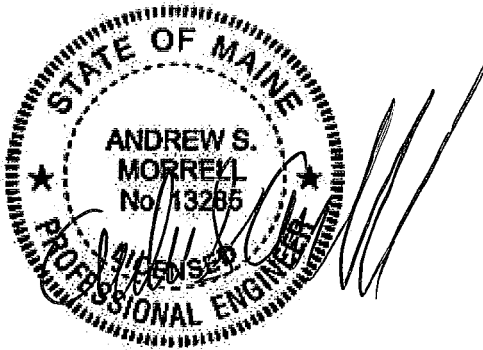
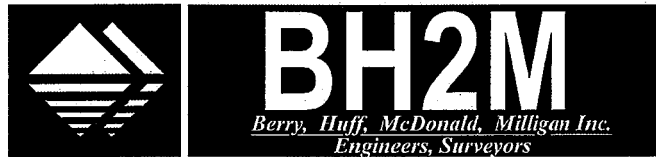
STORMWATER MANAGEMENT REPORT

Brown Dog Carriers & Logistics
Landry Street
Biddeford, Maine

Submitted by:

Brown Dog Carriers & Logistics
432 Elm Street
Biddeford, Maine 04005

Prepared by:



Date:
March 2023

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1.0 **INTRODUCTION**

Brown Dog Carriers & Logistics is proposing to construct an office building and gravel parking and storage area on an 11.62 acre parcel located at the corner of Landry Street and Marcel Avenue in Biddeford (Map 74, Lots 10-2, 11, & 14).

The scope of work includes but is not limited to:

- Construction of a paved access drive and employee parking area
- Construction of a gravel parking and storage area
- Construction of an office building
- Extension of municipal utilities for water, sewer, electrical and communications
- Construction of stormwater management facilities

The proposed infrastructure improvements will create approximately 127,115 sf (2.91 acres) of impervious area and 58,146 sf (1.33 acres) of landscaped area totaling 185,261sf (4.25 acres) of developed area for the project.

In accordance with the City of Biddeford code requirements, the Stormwater Management Plan has been prepared to satisfy the requirements of the Maine Department of Environmental Protections “Stormwater Management Rules” Chapters 500, 501 and 502 as well as the most recent version of the “Maine Stormwater Best Management Practices Manual”. Per the post construction stormwater discharge management standards of the City code, the proposed project will need to meet quality and quantity standards of Chapter 500, requiring meeting the Basic, General, and Flooding Standards.

1.1 **OVERVIEW OF MODELING METHODOGY AND SOURCE INFORMATION**

Hydrologic Analysis: The pre and post development conditions have been modeled using modeling software (Hydrocad Version 10) which is based upon the methodology contained within the USDA Soil Conservation Service Technical Release 55. Type III 24-hour storm distributions for York County were used for the analysis. The following frequencies and 24-hour rainfall depths were used for the analysis:

Return Period	24-Hour Rainfall Depth
2-Year Storm	3.30 inches
10-Year Storm	4.90 inches
25-Year Storm	6.20 inches

Soils: The soils boundaries used for the stormwater analysis were digitized from the Natural Resource Conservation Service (NRCS), web soil survey website. The source of the data is the York County Soil Survey (Class D). Refer to the following for additional documentation regarding the soils used for modeling:

- Appendix B of this Report
- Pre and Post Development Watershed Plans (Sheets A and B)

Soil Map Unit	Unit Description	Hydrologic Soil Group*
AdB	Adams loamy sand, 0-8% slopes	A
CrB	Croghan loamy fine sand, 0-8% slopes	A
LyB, LyC	Lyman-Rock outcrop complex, 3-15% slopes	D
Na	Naumburg sand	A/D*
RoE	Rock outcrop-Lyman complex, 15-80% slopes	D*
Ur	Urban Land	D

*Assumed as D

Boundary Survey: Field survey by BH2M

Topography: Onsite: On Ground Topography by BH2M
 Offsite: LIDAR data from the Maine Office of GIS

Natural Resources: Wetland delineations performed by Mainely Soils

1.2 DESCRIPTION OF POINTS OF ANALYSIS

The watershed model analyzes the discharge of runoff at four Analysis Points as described below:

Analysis Point #1

Description: Ditch along Marcel Ave. at the property boundary.

Pre-Development Tributary Drainage Area: 41.997 acres

Post Development Tributary Drainage Area: 49.545 acres

Analysis Point #2

Description: Flow to the westerly downstream abutter flowing to Marcel Ave.

Pre-Development Tributary Drainage Areas: 5.303 acres

Post Development Tributary Drainage Areas: 0.404 acres

Reach #1

Reach 1 is a combination of flows from analysis point 1 and 2. This reach shows what flow rates will be at the 24" RCP driveway culvert of the abutting property since analysis points 1 and 2 meet just upstream of this location.

Analysis Point #3

Description: Flow to the south-westerly downstream abutter.

Pre-Development Tributary Drainage Areas: 9.685 acres

Post Development Tributary Drainage Areas: 7.036 acres

1.3 PRE DEVELOPMENT CONDITIONS

The Existing Conditions are shown on sheet 2 and sheet A of the accompanying plans. The project located at the corner of Landry Street and Marcel Avenue in Biddeford and is bounded by industrial properties to the north and east, undeveloped wooded areas to the south, and residential land to the west. The parcel lies within the watershed of an unnamed stream that is tributary to Thatcher Brook which is an urban impaired stream.

The watershed that was analyzed for this project is approximately 57 acres. The analysis points are located along the western boundary of the parcel and are described in Section 1.2 of this report.

The Pre Development Stormwater plans are included as Sheet A of the accompanying plans and the Calculations are attached as Appendix B.

The Pre Development Watershed Model predicts the following peak flow rates:

Pre-Development Peak Flows (cu. ft./sec)			
Analysis Point	2-Year	10-Year	25-Year
AP-1	16.44	34.83	47.27
AP-2	0.72	2.59	4.58
Reach 1 – Combination (AP1 & 2)	17.14	37.18	51.08
AP-3	3.72	8.47	12.80
Total (AP1-3)	20.86	45.65	63.88

1.4 POST DEVELOPMENT CONDITIONS

The proposed project will include development of a paved access road, employee parking, an office building, a gravel parking and storage area, and stormwater treatment facilities. Below is a summary of the proposed impervious area for full build-out of the project.

Proposed Impervious Area	=	127,115 sf
Proposed Lawn Area	=	58,146 sf
Proposed Developed Area	=	185,261 sf

The proposed project will include two Grassed Underdrain Soil Filters to provide water quality treatment and attenuation of peak flows for portions of the project.

The Post Development Drainage Plan is included as Sheet B of the accompanying plan set and the Calculations are attached as Appendix D.

The Post-Development Watershed Model predicts the following peak flow rates:

Post Development Peak Flows (cu. ft./sec)			
Analysis Point	2-Year	10-Year	25-Year
AP-1	17.81	38.67	52.49
AP-2	0.02	0.17	0.38
Reach 1 – Combination (AP1 & 2)	17.82	38.72	52.58
AP-3	2.88	6.55	9.88
Total (AP1-3)	20.70	45.27	62.46

1.5 BASIC STANDARDS

The proposed project is required to meet the Basic Standards. To meet the Basic Standards the project design must demonstrate that the erosion and sedimentation control, inspection and maintenance, and housekeeping standards specified in Appendices A, B, and C of 06-096 Chapter 500 are met, and that the grading or other construction activity will not impede or otherwise alter drainageways so as to have an unreasonable adverse impact on a wetland or waterbody, or an adjacent downslope parcel.

The proposed project will provide temporary (during construction) BMP's and post-construction BMP's. Refer to Sheet 5 of the project plans for erosion and sedimentation control narratives and details. The project requirements for inspection and maintenance during construction and post-construction are described in the Erosion and Sedimentation Control - Inspection and Maintenance Plan found in Appendix h of this Report. The housekeeping standards can also be found in the Inspection and Maintenance Plan.

1.6 **GENERAL STANDARDS**

The proposed project is required to meet the General Standards. To meet the general standards, the project design must demonstrate that the stormwater management system includes treatment measures that will provide pollutant removal or treatment and mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms and potential temperature impacts. This must be achieved by providing treatment of no less than 95% of the impervious area and no less than 80% of the developed area.

The stormwater management system includes two grassed underdrained soil filters. The proposed BMP's have been designed in accordance with the design requirements outlined in the Maine Stormwater Best Management Practices Manual, Volume III.

Below is a summary of the treatment areas associated with the proposed infrastructure. Refer to Appendix F for detailed calculations.

Treatment Summary	
Total Proposed Impervious Area	127,115 sf
Total Proposed Developed Area	185,261 sf
Total Treated Impervious Area	123,548 sf
Total Treated Developed Area	153,971 sf
Impervious Area Treatment %	97.19% (95% required)
Developed Area Treatment %	83.11% (80% required)

Please note that a treatment exemption credit of 1,814 sf of impervious area and 3,108 sf of developed area has been considered for the access road wetland impacts per section 4 (5)(e) of Chapter 500.

1.7 **PHOSPHORUS STANDARD**

The proposed project is located in the Thatcher Brook watershed. The proposed project is not located within the direct watershed of a lake or lake most-at-risk listed in 06-096 Chapter 502. The Phosphorus Standard does not apply to this project.

1.8 **URBAN IMPAIRED STREAM STANDARD**

The proposed project is located within the Thatcher Brook Watershed, which is classified as an Urban Impaired Stream. However, because the project will not create over 3 acres of impervious area or 20 acres of disturbed area, the project is not required to meet the Urban Impaired Stream Standard.

1.9 **FLOODING STANDARD**

The proposed project is required to meet the Flooding Standards. To meet the Flooding Standard, the project design must demonstrate that the stormwater management systems will accomplish the following:

- a) The system must detain, retain, or result in the infiltration of stormwater from 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.
- b) The design of piped or open channel systems must be based on a 10-year, 24-hour storm without overloading or flooding beyond channel limits.
- c) The areas expected to be flooded by runoff from a 10-year or 25-year, 24-hour storm must be defined, and no buildings or other similar facilities may be planned within such areas.
- d) Runoff from the project may not flood the primary access road to the project and any public roads bordering the project as a result of a 25-year, 24-hour storm.

The following Table compares the Pre and Post Development peak flow rates for the 2-year, 10-year, and 25-year return periods. Refer to Appendix B for the Pre Development model and Appendix C for Post Development model.

Peak Flow Comparison (cu. ft./sec)						
Analysis Point	2-Year		10-Year		25-Year	
	Pre	Post	Pre	Post	Pre	Post
AP-1	16.44	17.81	34.83	38.67	47.27	52.49
AP-2	0.72	0.02	2.59	0.17	4.58	0.38
Reach 1 – Combination (AP1 & 2)	17.14	17.82	37.18	38.72	51.08	52.58
AP-3	3.72	2.88	8.47	6.55	12.80	9.88
Total (AP1-3)	20.86	20.70	45.65	45.27	63.88	62.46

As illustrated in the table above, development of the proposed project will create a condition where peak flows of stormwater from the project site exceed the peak flows of stormwater prior to undertaking the project at Analysis Point 1 and Reach 1 in the 2, 10, and 25-year storm events. These increases are minor and will not create any adverse impacts as summarized below:

Analysis Point 1

The predicted increased flow rate at Analysis Point 1 (increase of 8.33%, 11.02% & 11.04%) is due to redirecting 7.548 acres of offsite area to this area as a result of placing fill to create the gravel parking area.

The predicted impact of this increase has been analyzed in HydroCAD and the results can be found in Appendix F of this report and is further analyzed in the following section.

Reach 1

Since the development of this project will create an increase in peak flow rate at Analysis Point 1, and a decrease at Analysis Point 2, an analysis of the combined flow rates is necessary to determine the overall impact to the downstream condition.

Reach 1 models the Marcel Avenue roadway swale downstream of Analysis Points 1 & 2 where stormwater runoff converges prior to flowing through a single 24" reinforced concrete driveway culvert.

The predicted increased flow rate at Reach 1 (increase of 3.97%, 4.14% & 2.94%) will result in minor changes within the existing roadway ditch along Marcel Avenue

The following tables compare the average water storage depth and maximum velocities that are predicted in this roadway ditch in the pre and post development conditions.

Water Surface Comparison Reach 1 (ft)			
Storm Event	2-Year	10-Year	25-Year
Pre Development Elevation	1.26	1.83	2.13
Post Development Elevation	1.29	1.87	2.16
Change	+0.03	+0.04	+0.03

Max. Velocity Comparison Reach 1 (fps)			
Storm Event	2-Year	10-Year	25-Year
Pre Development Elevation	3.50	4.28	4.63
Post Development Elevation	3.54	4.32	4.66
Change	+0.04	+0.04	+0.03

As seen in the tables above, these increases are minor and will not affect the abutting properties or create adverse impacts to the downstream conditions. See Appendix F for additional information.

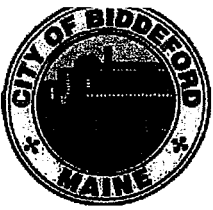
A review of the total impacts of the project by adding all three analysis points demonstrates a reduction in peak flow rates for all storm events (see total (AP1-3)).

1.10 CLOSURE

The proposed stormwater management facilities have been designed to mitigate stormwater impacts associated with development of the proposed project. In accordance with City of Biddeford code requirements of meeting “quality and quantity standards of Chapter 500”, the proposed stormwater management facilities have been designed to meet the Basic, General and Flooding Standards.

CITY OF APPROVAL – NOTICE OF DECISION

LANDMATTERS LLC 11/12/2019



CITY OF BIDDEFORD

PLANNING DEPARTMENT

Greg D. Tansley, A.I.C.P.
205 Main Street
PO Box 586
Biddeford, ME 04005
(207) 284-9115
Greg.Tansley@Biddefordmaine.org

NOTICE OF DECISION

November 12, 2019

William Thompson
BH2M Engineers
28 State Street
Gorham, ME 04038

RE: 2019.01 Final Site Plan Review/Conditional Use Permit for Landmatters, LLC to construct 14 storage units located at 23 Marcel Avenue (Tax Map 74, Lot 11) in the I-2 zone.

Dear Bill,

At their meeting of November 6, 2019 the Biddeford Planning Board reviewed the Final Site Plan and Conditional Use Permit for the proposed multi-building, 14 storage unit, development off Landry Street (at 23 Marcel Avenue) in the I-2 zone. The Heirs of Clarence Belanger owns the property and you presented the application proposal to the Planning Board.

Based on the presentation and the materials submitted, the Planning Board granted the following waiver requests:

1. LDR, Article VI, Section 26.F – cut/fill slopes within 10' of a property line and steeper than 3:1;
2. LDR, Article VI, Section 49, 5 & 10 – screen parking from adjacent residential properties and public roads;
3. LDR, Article XI, II.5.B.4.f.1 – no parking or paving within rear or side setbacks;
4. LDR, Article XI, 5.B.4.i.3 – 30% maximum lot coverage for paving.

Following the granting of the waivers, the Biddeford Planning Board approved the Site Plan and Conditional Use Permit and approved the findings of fact conditioned on the following:

1. **Prior to any ground disturbance or issuance of any permits:**
 - a. A pre-construction meeting with the contractor needs to be held with the Engineering Department to discuss inspection requirements.
 - b. A stormwater mitigation fee of \$21,750.00 shall be paid to the Planning Department.

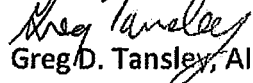
- c. An Erosion and Sedimentation Control Performance Guarantee (acceptable to the Planning Department) in the amount of \$XXX,XXX (amount to be determined by the Planning Department) shall be submitted to the Planning Department.
- d. Salt Management Plan to be provided for review and approval by the Planning Department.
- e. A Financial Capacity letter shall be provided from a recognized financial institution indicating the financial ability of the developer to complete the project.
- 2. Prior to issuance of any occupancy permits:
 - a. A compliance inspection needs to occur by the Engineering Department to determine that all site improvements as shown on the submitted plan were constructed in accordance with the approved plans.
 - b. A performance guarantee (acceptable to the Engineering Department) in the amount of 150% of any remaining site improvements shall be submitted to the Planning Department. Amount to be determined based on City inspections and the recommendation of the City Engineer.
- 3. Conditional Use Permit approval for this project is limited to the following:
 - a. Air transportation dependent use
 - b. Contractor's storage yard
- 4. Outside storage and/or display is prohibited.
- 5. Snow storage (temporary or otherwise) is prohibited from stormwater management facilities.
- 6. Best management practices shall be adhered to during all ground disturbance operations.
- 7. All erosion and sediment control measures need to be installed. Applicant shall notify the Engineering Department once installed so that Staff may inspect said installation, as necessary.
- 8. Copies of the maintenance logs for the stormwater facilities shall be submitted to the City for each calendar year no later than January 15th of the following year. If the Engineering Department does not receive these copies within 30 days after the deadline, the applicant may be required to return to the Planning Board for further review.
- 9. The applicant shall obtain all other pertinent local, state and federal permits, licenses, and insurance such as blasting, building, electrical, plumbing, etc., prior to commencing business, unless authority issuing said permit allows for such actions.
- 10. Once completed, as-built drawings of the site shall be provided to the Planning Department.
- 11. Upon completion of the work the project engineer shall certify that the project has been completed as per the approved plans or shall note any deviations from the approved plans.
- 12. Standard Conditions of Approval apply.

Following the date of final approval, such approval shall be valid for one year from date of said approval. If a building permit/occupancy permit has not been issued, then said approval shall become automatically null and void. Appeals of the Planning Board's decision may be made as per the Biddeford Revised Code of Ordinances.

If you have any questions please call the Planning Department at 284-9115.

FOR THE BIDDEFORD PLANNING BOARD

Sincerely,


Greg D. Tansley, AICP
City Planner

Cc: R. Fecteau, Code Enforcement Officer (via e-mail)
T. Milligan, P.E., City Engineer (via e-mail)
T. Saucier, P.E., Site Design Associates (via e-mail)
File

Site Design Associates

Consulting Engineering and Land Planning

April 24, 2023

Mr. David Galbraith
Via email

**RE: Proposed Commercial Building
Landry Street/Marcel Avenue**

Dear David;

Per your request Site Design Associates has undertaken a review of the plans and documentation submitted in support of a preliminary site plan review application.

Our review was based on civil engineering plans dated 03-15-23, the application packet, and the stormwater management report for the project. It is our understanding the project requires review and approval by the Maine Department of Environmental Protection under the Stormwater Law and the Natural Resources Protection Act.

We are aware that the plans are preliminary, and may not contain the detail one would expect in final documents. Our comments include some items that may be closer associated with final documents, in order for the applicant to consider them prior to the final plan submission.

Based on our review we offer the following comments for your, the planning board's, and the applicant's consideration:

A. General

1. Was a trip generation analysis submitted for the project?
2. The wetland delineation report submitted was prepared in 2019 for the previous project, and does not include the 7+ acres of land acquired since then, a portion of which will be utilized for the current project.
3. The cover letter indicates that a 6 ft high fence will be installed to screen the abutting residential lots. We understand the properties in the area are in an industrial zone, but wanted to point out for context, the proposed parking surface will be 7 ft higher than the abutting property at a distance of 35 ft, and the lighting plan includes 22-28 ft high fixture mounting heights above the surface.
4. It appears that waivers of the following ordinance sections may be necessary:
 - a. VI.26.F. – no cut or fill slopes within 10 feet of the property line.

23 Whitney Way Topsham, Maine 04086
Phone: (207) 449-4275 email: info@sitedesignassociates.biz

- b. VI.49.5. and 10. – Screen parking from adjacent residential “properties” and public roads.
- c. XI.5.B.4.f.1. – No parking or paving in rear or side setbacks
- d. Chapter 62.IV.2.62-11. - Access from street of lower classification

B. Stormwater Management

The stormwater management report was developed to address local and state regulations. At this time, we are unable to draw a conclusion regarding compliance with the city stormwater regulations relative to site plan review.

1. The stormwater management plans submitted reflect a common analysis point for Subcatchments 1, 1A-D, and 2, southerly of the subject property. This is not supported by the topographic information provided.
2. The report indicates there will be an increase in the rate of stormwater runoff at the southerly boundary of the property. This does not meet the city code. It seems stormwater detention may be required, particularly given the limited capacity in the downgradient system.
3. The report indicates that the project does not have to meet the DEP Chapter 500 standards for urban impaired streams, because it is not a Site Location project, which is accurate. However, it is our understanding that because the project is located in the Thatcher Brook watershed, a fee would be paid to the Compensation Fee Utilization Fund administered by the city for Thatcher Brook. The fee calculation should be provided.
4. The report suggests that there is a credit available for treatment based on Chapter 500.C.(5).(e.). It appears the credit suggested is for 60 linear ft of the 30 ft wide drive. It seems this would be excessive for a 5 ft diameter culvert crossing.
5. A salt management plan should be provided.
6. For information only; based on the grades shown, the pavement and gravel will likely be poorly draining and it is likely ponding will occur.

C. Drainage Plans and Calculations

1. Pre and post-development watershed plans should be provided for both off-site and on site watersheds. The plans should be set up so contours, soil boundaries, and contour labels are legible on all drawings.
2. The stormwater report indicates that 127,115 sf of new impervious surface will be created, while the application indicates 130,299 sf of new impervious area will result. This should be reconciled.
3. The stormwater calculations indicate that the spillways will be activated in all design storm events. The spillways outlet to a relatively flat drainage swale proposed just southerly of the abutting property. Based on the topography, runoff from that property currently runs across the subject site relatively unimpeded. We recommend that a formal swale be established, with erosion control blanket, and details including the sideslopes and widths shown, to

insure this is properly constructed and does not result in water ponding onto the abutting property. Also, the calculations indicate that the velocity of runoff in this swale will be approximately 1.5 fps due to the outflow from each spillway. What will the velocity be for the combined flows?

4. A level spreader should be provided between the outlet of the above-mentioned swale and the receiving wetland.
5. Please provide summaries for the 50- and 100-year storm frequencies in the report.
6. The model references a 2 inch diameter orifice, which is not apparent on the plans and details.
7. The required sediment storage calculation was based on the paved area. Because the surface will be gravel, we suggest that the sediment storage be based on both the paved and gravel areas.
8. The soil filters exceed the maximum bottom area of 3,000 sf required by the DEP BMP manual.
9. The underdrain filter volume calculations should be reviewed. The increase in area shown from elevation 145 to 146 does not appear to be supported by the grading plans.
10. The I and M plans for during and post construction should define the storms which trigger wet weather inspections.
11. The post construction I and M manual should require the retention of reports for 5 years.

D. Drawings

1. Sheet 1 – Preliminary Site Plan
 - a. The cover letter indicates a 6,000 sf building is proposed, the plan shows a 5,280 sf building, and the parking calculation shows a requirement of 1 space per 200 sf for a total of 20 spaces. This should be clarified.
 - b. Note 19 refers to hoods on catch basins. There do not appear to be any basins, but we recommend a hood and 3 ft sump be provided for DMH 1.
 - c. Sawcuts and butt joints should be called out where existing pavement meets proposed pavement.
 - d. Why do the curb radii end prior to the edge of pavement in Landry Street? Also, the tipdown note refers to note 16, which should be note 17.
 - e. A graphic scale should be provided on the drawing.
 - f. Is the dumpster enclosure permitted in the side setback?
2. Sheet 2 – Grading and Erosion Control Plan
 - a. Why are two stabilized construction entrances shown. Given the residential nature and current condition of Marcel Avenue, it may be preferable for construction traffic to utilize only Landry Street.
 - b. The plan should indicate how the 2:1 slopes will be stabilized.

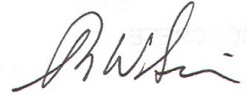
- c. Two inspection steps should be added to the soil filter inspection requirements: when the soil filter is at subgrade, and after the liner is installed, prior to installation of underdrain bedding.
- d. The runoff down the driveway should be collected prior to running into Landry Street. It looks like a catch basin or basins could be installed to accomplish this.
- e. More spot grades to better define drainage and the grades at the accessible parking space and route to the building should be provided.
- f. Cleanouts should be provided on the end and at intermediate locations along the soil filter underdrain.
- g. How will roof runoff be conveyed to soil filters?
- h. A level spreader should be called out at the soil filter outfall from DMH 1 and details provided.
- i. Snow storage?

3. Details

- a. The pavement joint detail should show grinding of the pavement and a minimum shiplap joint of 18". The note and the section also conflict.
- b. What does "Stabilized subgrade per manufacturer" mean? This should be clarified on the drawing and any manufacturer recommendations incorporated.
- c. Specify a product for the slope stabilization.
- d. On sheet 5, the I and M plan for during construction should specify the storm which triggers wet weather inspections and the responsibility for the inspections.
- e. A spillway detail should be provided and should include dimensions, width, slope, etc.
- f. A typical section through the 60 inch diameter culvert should be provided showing materials, compaction requirements, slopes, elevations, etc.
- g. Accessible parking space dimensions and ramp details should be provided.
- h. The soil filter detail should specify either 12" or 14" of underdrain bedding, not both.
- i. A typical section through the soil filters and sediment forebay at the stone berm level spreader should be provided showing slopes, materials, relevant elevations, and storm elevations.
- j. A typical section of the entrance drive should be provided.
- k. The soil filter detail should show the bottom width. The filter media note refers to tables 7.2 and 7.4, however no table is provided.
- l. Parts of the specification do not comply with the BMP requirements and should be reviewed.

If you have any questions, or require additional information, please do not hesitate to contact me.

Sincerely,
Site Design Associates

A handwritten signature in black ink, appearing to read 'Tom Saucier', with a stylized flourish at the end.

Tom Saucier, P.E.
President

Whitten, Nan

From: Chekan, Craig
Sent: Tuesday, April 25, 2023 8:50 AM
To: Galbraith, David; Fecteau, Roby; Dexter, Edward; Fisk, JoAnne; Tom Saucier; Milligan, Tom
Cc: Freeman, Eric; Mitchell, Gregory; Whitten, Nan; Demers, Jeff
Subject: RE: Brown Dog Transportation & Moxie Lane Preliminary reviews
Attachments: Galbraith 04-24-23.pdf

Tom Saucier – great comments, thanks for the attached thorough review

David – below are my comments; I'll leave it up to you whether they should implement the City's checklists for Final approval

1. Applicant is using an outdated 2015 Planning Application; applicant should utilize Planning's latest application on the City's website
2. The application states no future development is proposed, yet utility stubs are proposed.
 - a. It should be clarified what a future development could consist of and what access would be required
3. A 50-year storm hydraulic analysis should be analyzed for each culvert, ditch, and drainage pipe for the Final submittal
4. Missing existing sanitary MH and storm culvert elevations within Marcel Ave
5. Applicant should confirm what upgrades to the downstream ditch/culverts within Marcel Ave are needed for a 50-year event
 - a. The existing 24" downstream culvert will be receiving flow from the upstream 60" culvert and the site's 12" outfall
6. A clear limits-of-disturbance delineation line should be shown and square-footage annotated, accurately depicting the limits of excavation needed for fencing, grading, utilities, and wetland impacts
7. The plan proposes an existing shed on the adjacent Herbert property to be relocated; clarification/details needed and permission confirmed
8. This project is proposing significant disturbance within the Thatcher Brook Watershed (an Urban Impaired Stream) and directly adjacent/within wetlands
 - a. A single layer of silt fence does not seem like adequate wetland/UIS protection, especially with 2:1 slopes
 - b. The City requests added protection and detail/annotation be included to alleviate any E&S concerns during construction
9. The project is proposing 8,900-SF of wetland impacts and an entrance drive within the 75' Stream Setback
 - a. Applicant should confirm permitting and mitigation requirements
10. Snow storage areas need to be identified/delineated
11. Applicant needs to confirm where vehicle washing/maintenance will be performed
 - a. Per the City's MS4 permit, all vehicle washing and maintenance work should be restricted from the gravel parking area (to avoid illicit discharges into the SWM facilities, wetlands, and drainage ditches); plans should clarify this restriction
 - b. If any vehicle washing/maintenance drainage is expected on-site, it should be drained into the sanitary sewer system
12. A detailed breakdown of proposed sewer flows was not provided, per Maine's Subsurface Wastewater Disposal Rules, Chapter 241, Section 4 (Tables 4A & 4C); thus an ability-to-serve letter has not been determined

Craig Chekan, PE

From: Galbraith, David <David.Galbraith@biddefordmaine.org>

Sent: Monday, April 24, 2023 9:55 AM

To: Chekan, Craig <Craig.Chekan@Biddefordmaine.org>; Fecteau, Roby <Roby.Fecteau@Biddefordmaine.org>; Dexter, Edward <Edward.Dexter@Biddefordmaine.org>; Fisk, JoAnne <JoAnne.Fisk@Biddefordmaine.org>; Tom Saucier <tsaucier@sitedesignassociates.biz>; Milligan, Tom <Tom.Milligan@Biddefordmaine.org>

Cc: Freeman, Eric <Eric.Freeman@biddefordmaine.org>; Mitchell, Gregory <gregory.mitchell@biddefordmaine.org>; Whitten, Nan <Nan.Whitten@Biddefordmaine.org>; Demers, Jeff <Jeff.Demers@Biddefordmaine.org>

Subject: Brown Dog Transportation & Moxie Lane Preliminary reviews

Importance: High

As a reminder, we have two new items going to the Planning Board next week (May 3, 2023 PB meeting date);

- 1) Brown Dog Transportation & Logistics – Preliminary Plan (review 1 of 2) and;
- 2) Wing – Moxie Lane Subdivision Sketch Plan (review 1 of 3).

The materials for these cases were distributed on 3-16-2023 and your comments for these reports / cases need to be received by the Planning Office by Wednesday afternoon (4-26-2023) for the Planning Board to pick up / or distributed. When drafting Staff reports Eric and I will be including each department / reviewer comments within the report. Regardless if you have comments or not, please send an email with your comments that you want included OR send an email that states "No Comments".

Thank you all in advance.

David

Case # 2023-22 Brown Dog Carriers & Logistics (Landry Street)

"L:\Planning Folder\Planning Documents 2023\Project Files\2023.22-Brown Dog Carriers & Logistics-Landry Street-Site Plan Review"

Wing 1 Moxie Lane Case # 2023-20 4 Lot Subdivision (3 additional lots)

"L:\Planning Folder\Planning Documents 2023\Project Files\2023.20-Wing-1 Moxie Lane-private road for 3 additional lots"