Town of Kittery
Planning Board Meeting
July 13, 2023

ITEM 1– 35 Badgers Island West, Preliminary Site Plan and Shoreland Development Plan
Action: review revised plans; approve preliminary application or continue review: Pursuant to §16.4 Land Use Regulations §16.7 and §16.9.3 Shoreland Development Review requirements of the Town of Kittery Land Use and Development Code, owner B.I.W. Group, LLC and agent John Chagnon with Ambit Engineering request approval to expand a legally non-conforming office building to provide 10 residential units on a legally conforming lot located on real property with the address of 35 Badgers Island West, Tax Map 1, Lot 34, in the Mixed-Use Badgers Island Zone (MU-BI), Shoreland Overlay Zone (OZ-SL-250'), Resource Protection Overlay Zone (OZ-RP) and the Commercial Fisheries/Maritime Use (OZ-CFMU).

PROJECT TRACKING

REQ'D	ACTION	COMMENTS	STATUS
NO	Sketch Plan	October 27, 2022, February 9, 2023	Accepted on 2/9/23
NO	Site Visit	November 14, 2022	Held
YES	Preliminary Site Plan Review Completeness/Acceptance	Possible on 4/27/2023	Pending
YES	Public Hearing	Held and closed May 25, 2023	Complete
YES	Preliminary Site Plan Review Approval		
YES	Final Site Plan Review Approval		
YES	Shoreland Development Plan Review Plan Approval		

Applicant: Plan Review Notes reflect comments and recommendations regarding applicability of Town Land Use Development Code, and standard planning and development practices. Only the PB makes final decisions on code compliance and approves, approves with conditions or denies final plans. Prior to the signing of the approved Plan any **Conditions of Approval related to the Findings of Fact along with waivers and variances (by the BOA) must be placed on the Final Plan and, when applicable, recorded at the York County Registry of Deeds. PLACE THE MAP AND LOT NUMBER IN 1/4" HIGH LETTERS AT LOWER RIGHT BORDER OF ALL PLAN SHEETS.** As per Section 16.4.4.13 - Grading/Construction Final Plan Required. - Grading or construction of roads, grading of land or lots, or construction of buildings is prohibited until the original copy of the approved final plan endorsed has been duly recorded in the York County registry of deeds when applicable.

Project Summary

35 Badgers Island West is currently developed with a 3-story, 22,245-square-foot commercial building with appurtenant paved parking facilities which are accessed from Badgers Island West via two separate driveways. The applicant proposes to construct additions to the existing building and convert use of the property from commercial to residential for the purpose of constructing 10 condominium units. The applicant revised plans by eliminating existing and proposed encroachments into the 75-foot Shoreland setback in response to feedback provided by the Planning Board during the May 25, 2023 meeting. Stormwater management plans were also revised accordingly.

Previous Meetings

The Board first heard this application on October 27, 2022 and a site walk was held on November 22, 2022. The Board accepted the sketch plan on February 9th, 2023. The applicant submitted applications for Preliminary Site Plan Review and Shoreland Development Plan Review applications on April 6, 2023. Review of these application is continued from the April 27, 2023 and May 25, 2023 meetings.

Review and approval of a Final Site Plan Application will be required for this project prior to construction.

Development Standards – updated for Preliminary Site Plan

This application contains detailed site information including shoreland, utility and grading plans, a revised planting plan done by a landscape architectural firm, a lighting plan albeit not yet including photometrics or fixture details, a turning template plan, and a revised stormwater (drainage) analysis. A parking plan shows parking underneath the two proposed additions.

Under §16.4.24 (D)(1)(a)-(h) dimensional requirements for the Mixed-use. Badgers Island (MU-BI) zone:

(a) Minimum land area per dwelling unit: 3,000 square feet.

[1] For each of the first two dwelling units and thereafter: 6,000 square feet.

Net developable land area = 54,883 square feet
Calculation: (2 units x 3,000 sf = 6,000 sf) + (8 units x 6,000 sf = 48,000 sf) = 54,000 sf.
Result: Complies. Net land area supports development of 10 units.

(b) Minimum lot size: 6,000 square feet.

(c) Minimum street frontage: 50 feet.

(d) Minimum front yard: five feet.

(e) Minimum rear and side yards: 10 feet.

All the above requirements appear to be met.

(f) Maximum building height: 40 feet (from average grade to average roof height – peak to eave – on pitched roofs).

New construction complies. Existing building is legally non-conforming.

(g) Minimum setback from:

[1] Water body and wetland water-dependent uses: zero feet.

[2] All other uses (including buildings and parking): 75 feet unless modified, according to the terms of Subsection **E** of this section.

Complies as revised.

(h) Minimum open space on the site: 40%. (Note: The Planning Board may reduce the required open space to 30% where it is clearly demonstrated that no practicable alternative exists to accommodate a water-dependent use.)

The devegetation table shows that 39.7% of the lot as proposed will be developed which leaves 60.3% as open space. Complies.

§16.4.24 (D)(4) – **Parking**: 1.5 parking stalls per unit (1.5 X 10 units = 15 stalls required)

Complies: 20 stalls proposed

§16.5.25 – Sprinkler System must be installed in all areas of new and existing building construction

Chapter 16.7 General Development (Site Plan) Requirements

§16.7.11 Performance standards and approval criteria

A. Water supply – *Public water available. Applicant responsible for obtaining availability letter.*
B. Sewer supply – *Public sewer available. Capacity verified by staff.*
C. Stormwater and surface drainage – *revised drainage plans and analysis under review by peer review engineer*
D. Post-construction stormwater maintenance and inspection required – *to be reviewed via Condominium Association documents during Final Site Plan review*
E. Vehicular Traffic – *Traffic impacts anticipated to be significantly reduced from previous commercial use. Turning diagram demonstrates sufficient access to site for emergency vehicles.*
F. Parking and loading. *Stalls = 9 X 19, complies; drive aisles = 22 feet; complies with compact car standard; snow removal or storage plans not specified*
G. Utilities

H. Exterior Lighting – *Exterior lighting = wall sconces. Specs provided. Offsite glare not anticipated.*
I. Erosion Control – required with stormwater maintenance and construction inspection
J. Water quality and wastewater pollution – *discharges to ground or surface water not proposed*
K. Air pollution – *No significant pollution of air is anticipated*
L. Noise abatement – *Noise impacts anticipated to be typical of residential uses. Working hours limited during construction to minimize noise impacts.*
M. Radiation – *No impacts anticipated*
N. Utilization of site – *Design generally complies with standards. Landscaping and open space provided. Stormwater plans under review.*
O. Storage of Materials – *No outdoor storage proposed. Location of dumpsters or solid waste storage facilities not specified in plans.*
P. Technical and Financial Capacity – *Financial guarantee for the value of all site work in the form of an escrow payment to the Town or a letter of credit from a reputable financial institution required prior to construction.*

Planning Board Procedural Steps

The Planning Board held and closed a public hearing for these applications during the May 25 meeting. The board also advised the applicant to revise the building design during that meeting. The applicant reduced the building footprint accordingly and is now seeking Preliminary Site Plan approval. Submittal and Planning Board approval of a separate Final Site Plan application is required for this project.

Staff find that, as revised, the plans provided by the applicant generally comply with the applicable standards and criteria of Kittery Town Code. Outstanding items including lighting details, dumpster locations, snow removal plans, drainage facility details, and building finishes can be reviewed or verified during the Final Site Plan review phase if the Planning Board agrees.

Recommended Motions

Move to approve or continue review

Move to approve/ continue preliminary plan application from owner/applicant owner B.I.W. Group, LLC and agent John Chagnon with Ambit Engineering for approval to expand and convert an existing office building to 10 residential units on real property with the address of 35 Badgers Island West, Tax Map 44, Lot 71, in the Mixed-Use Badgers Island Zone (MU-BI), Shoreland Overlay Zone (OZ-SL-250'), Resource Protection Overlay Zone (OZ-RP) and the Commercial Fisheries/Maritime Use Zone (OZ-CFMU).

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3, Portsmouth, NH 03801
Phone (603) 430-9282 Fax 436-2315

29 June 2023

Dutch Dunkelberger, Chair
Kittery Planning Board
Town of Kittery
200 Rogers Road, Kittery, ME 03904

Re: Preliminary Site Plan Review Application; Conversion to Residential
Tax Map 1, Lot 32, 35 Badgers Island West

Dear Dutch and Planning Board Members:

On behalf of BIW Inc. we hereby submitted a REVISED package for **Preliminary Site Plan Review Approval** to the town. The revisions are based on the feedback from the Public Hearing on May 25, 2023. The Planning Board and public comments regarding our proposal under Section 16.3.2.14.E of the Kittery Land Use Code for a setback reduction to the HAT have led the design team to propose an alternative building / site layout that does not intrude into the 75-foot buffer. The existing building intrusion into the 75-foot buffer will be eliminated by removing 6 feet +/- from the existing building, and that is detailed on the Demolition Plan.

The plan set contains a professionally prepared Landscape Plan showing the proposed buffer plantings. The plantings have considered the need for salt tolerant vegetation, as well as wildlife habitat. The planting plan remains robust, in recognition of the site's proximity to the protected resource. The plan shows that the wetland buffer impact is reduced by 1,909 square feet, a removal of the entire impervious intrusion into the buffer. There is a proposed a minor increase of 62 square feet for a steppingstone path, which in total represents a 97% decrease in impervious surface in the buffer, from existing. The project also proposes a reduction in the overall site impervious surface area, going from 49.1 % to 39.7 %. Included in this reduction is the elimination of untreated surface parking lots.

The plan set contains the following:

- Cover Sheet – This plan shows the design team, site location, and Legend.
- Existing Conditions Plan C1 – This plan shows the current improvements on the property (including the recently completed revetment) and the site boundary lines.
- Shoreland Development Plan C2 – This plan shows the location of the proposed building additions, walkways, and driveway entrances. The plan highlights the existing landscaping (trees) that will be retained. The plan contains the De-vegetated Coverage Table and details the changes to de-vegetated surfaces in the buffer zone.
- Landscape Plan L1 – This plan shows the proposed site landscaping and proposed patios.
- Utility Plan C3 – This plan shows the utilities required to service the proposed additions.

- Grading Plan C4 – This plan shows the proposed site grading and the location of the proposed drainage pipes. The current drainage pipe intrusion has been relocated (on the lot).
- Demolition Plan C5 – This plan shows the proposed demolition taking place on the property, including the building conformance removal.
- Turning Template Plan T1 – This plan shows that a fire truck will be able to safely travel on Badgers Island West given the proposed minor reduction in the roadway width for the addition of a proposed sidewalk.
- Lighting Plan C7 – This plan shows proposed site lighting locations; styles and lumen intensities to be determined. All fixtures are building mounted.
- Detail Sheets D1 to D3 – These plans show the construction details for the project.
- Architectural Plans 1-10 – The plans show Historical Precedent, Floor Plans, Roof Plan, Context Imaging, and Building Massing.

We look forward to the Planning Board review of this submission and our in-person presentation at the Planning Board meeting on July 13, 2023. Thank you for your time and attention to this proposal.

Please contact me if you have any questions or concerns regarding this application.

Sincerely,

John R. Chagnon, PE
Ambit Engineering – Haley Ward
CC: Project Team

P:\NH\5010135-Hampshire_Development\3050.72A-Badgers Island W.(35)-JRC\3050.72A Hampshire Development\2022 Site Permitting\Applications\Town of Kittery\Planning Board Letter 6-29-23.docx

RESIDENTIAL CONVERSION

35 BADGERS ISLAND WEST

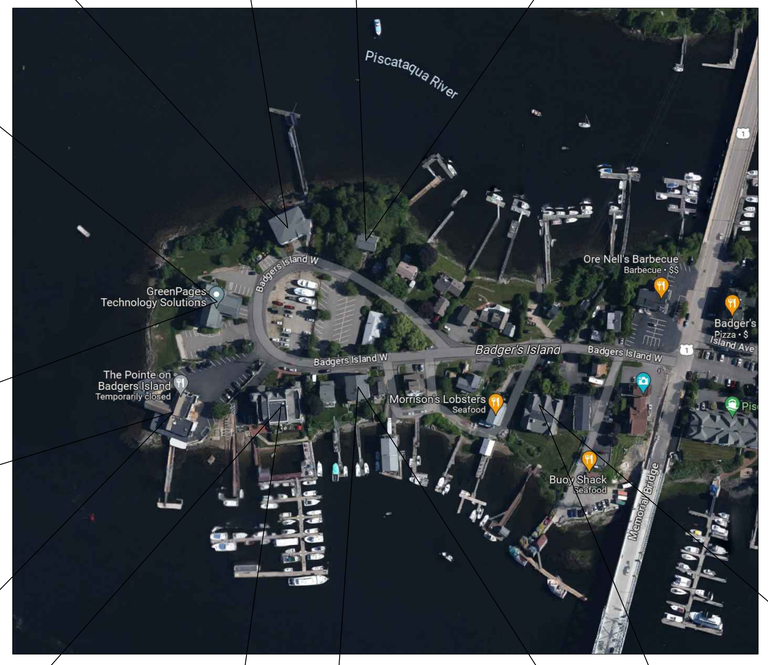
KITTERY, MAINE 03904

SITE CONTEXT:

32 BADGERS ISLAND WEST

28 BADGERS ISLAND WEST

35 BADGERS ISLAND WEST - PROJECT SITE



31 BADGERS ISLAND WEST

27 BADGERS ISLAND WEST

23 BADGERS ISLAND WEST

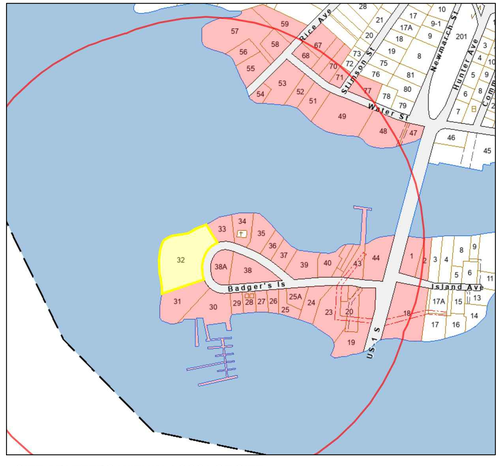
9 BADGERS ISLAND WEST

PROJECT DESCRIPTION:

RENOVATION AND ADDITIONS TO A FORMER OFFICE BUILDING TO CONVERT THE SITE INTO NEW CONDOMINIUM UNITS. WORK WILL INCLUDE:

- CREATION OF TWO SEPARATE ENCLOSED PARKING AREAS FOR THE BUILDING RESIDENTS.
- RENOVATION OF THE EXISTING BUILDING, INCLUDING ROOF MODIFICATIONS, TO CONSTRUCT SIX CONDOMINIUM UNITS WITHIN THIS AREA.
- CONSTRUCTION OF BUILDING ADDITIONS TO THE NORTH AND SOUTH OF THE EXISTING STRUCTURE FOR FOUR CONDOMINIUM UNITS (TWO IN EACH ADDITION).
- DEVELOPMENT OF AN ENTRY BETWEEN THE SOUTH ADDITION AND EXISTING BUILDING FOR A NEW ELEVATOR AND STAIR TO SERVE THAT ADDITION.

DRAWING INDEX:



SITE ABUTTERS WITHIN 1000' OF SITE

7 WALLINGFORD SQUARE
UNIT 2099
KITTERY, ME 03904
207.994.3104

WINTER HOLBEN

MAP OF BADGERS ISLAND

MAP SHOWS THE FERNALD AND PETTIGREW SHIPYARD (1850) - CURRENT SITE OCCUPIES A PORTION OF THIS AREA.

PORTSMOUTH NAVAL SHIPYARD

(BADGERS ISLAND BUILT SHIPS FOR THE NAVY BETWEEN 1776-1799)

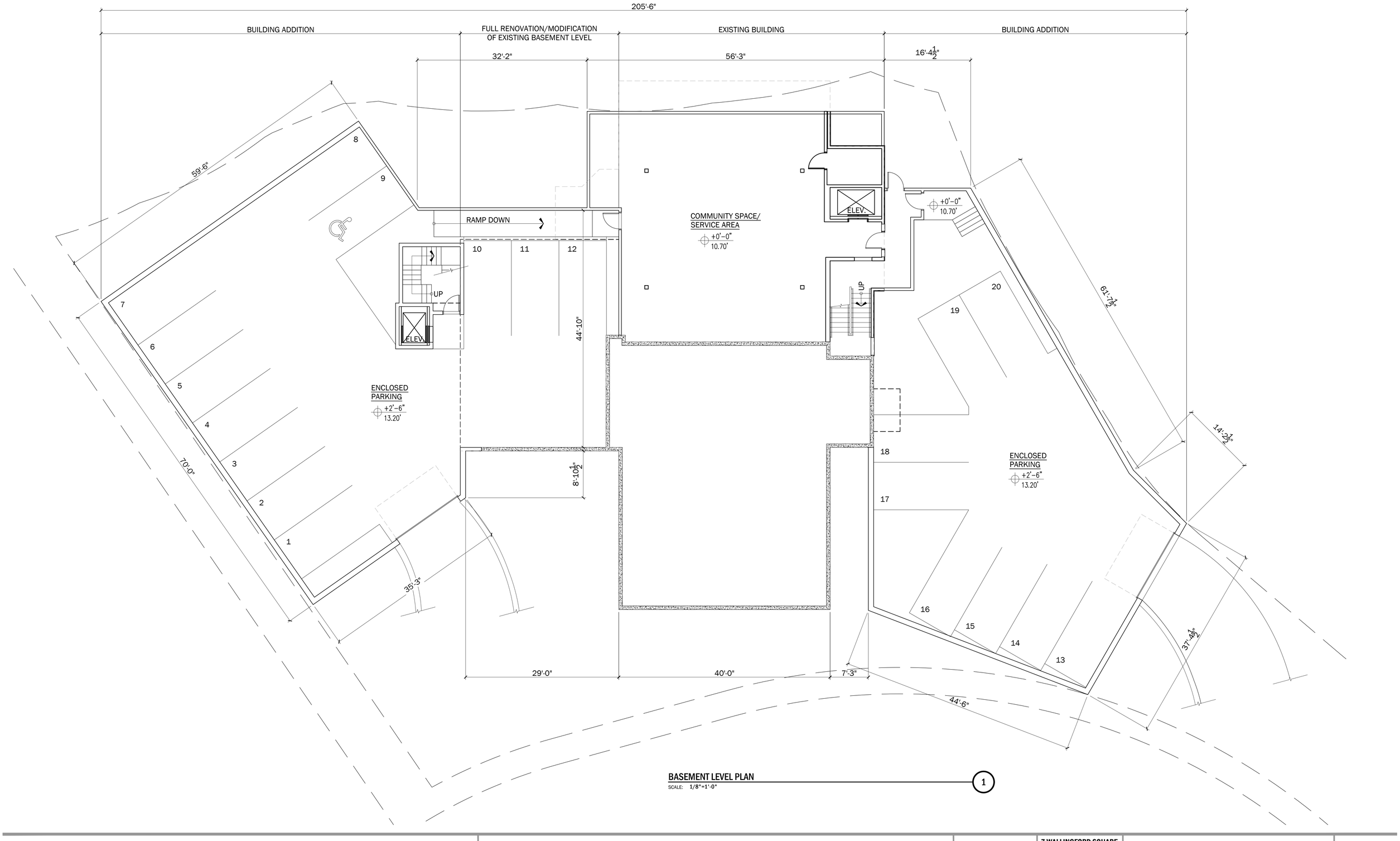
NAVAL YARD - EARLY 1900s.

NAVAL YARD - 1814

USS RANGER

USS RANGER IN 1778 - BUILT BY JAMES HACKETT ON BADGERS ISLAND IN 1777

DRAWING OF THE USS RANGER



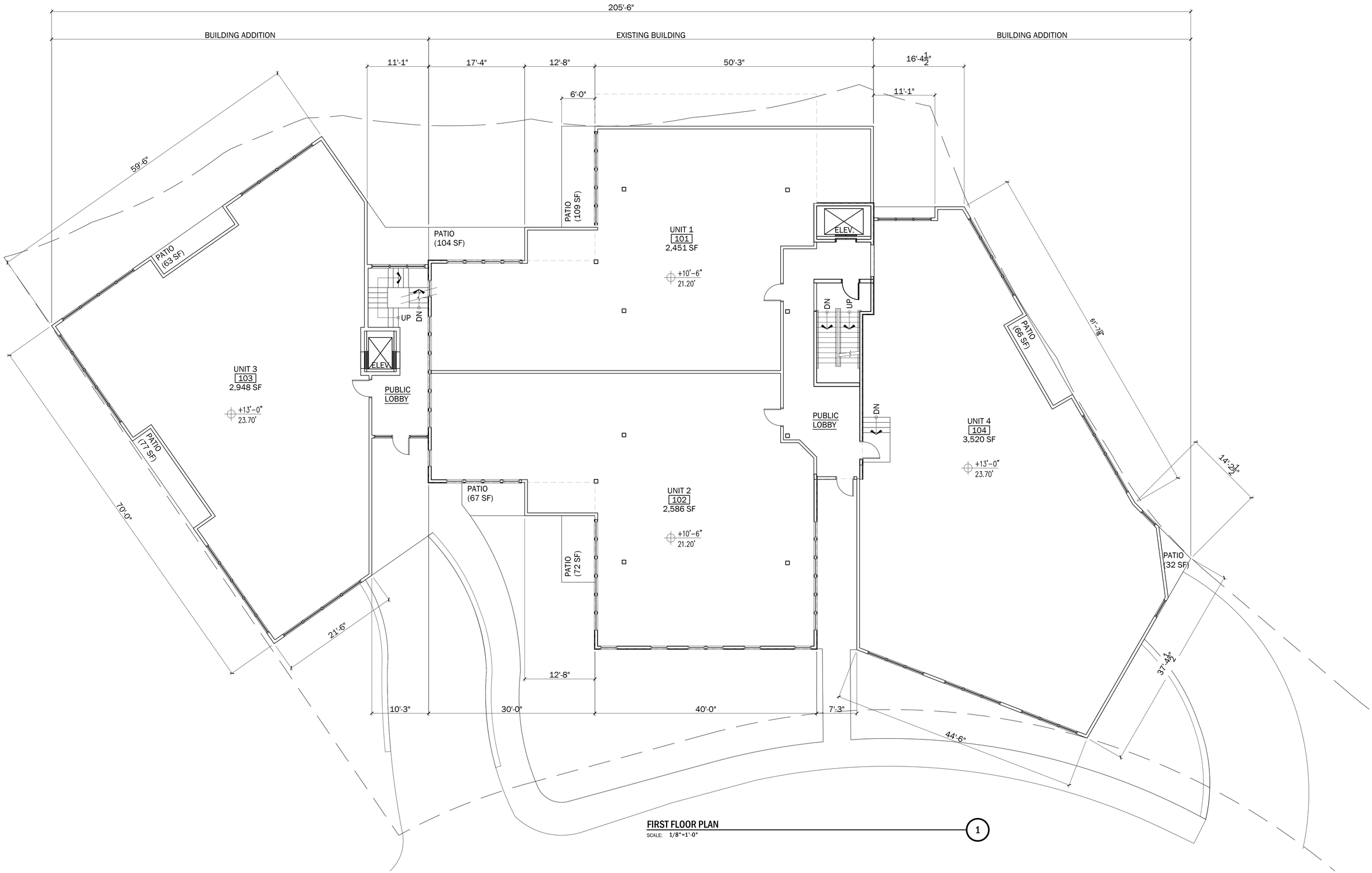
BASEMENT LEVEL PLAN

SCALE: 1/8"=1'-0"

1

7 WALLINGFORD SQUARE
UNIT 2099
KITTERY, ME 03904
207.994.3104

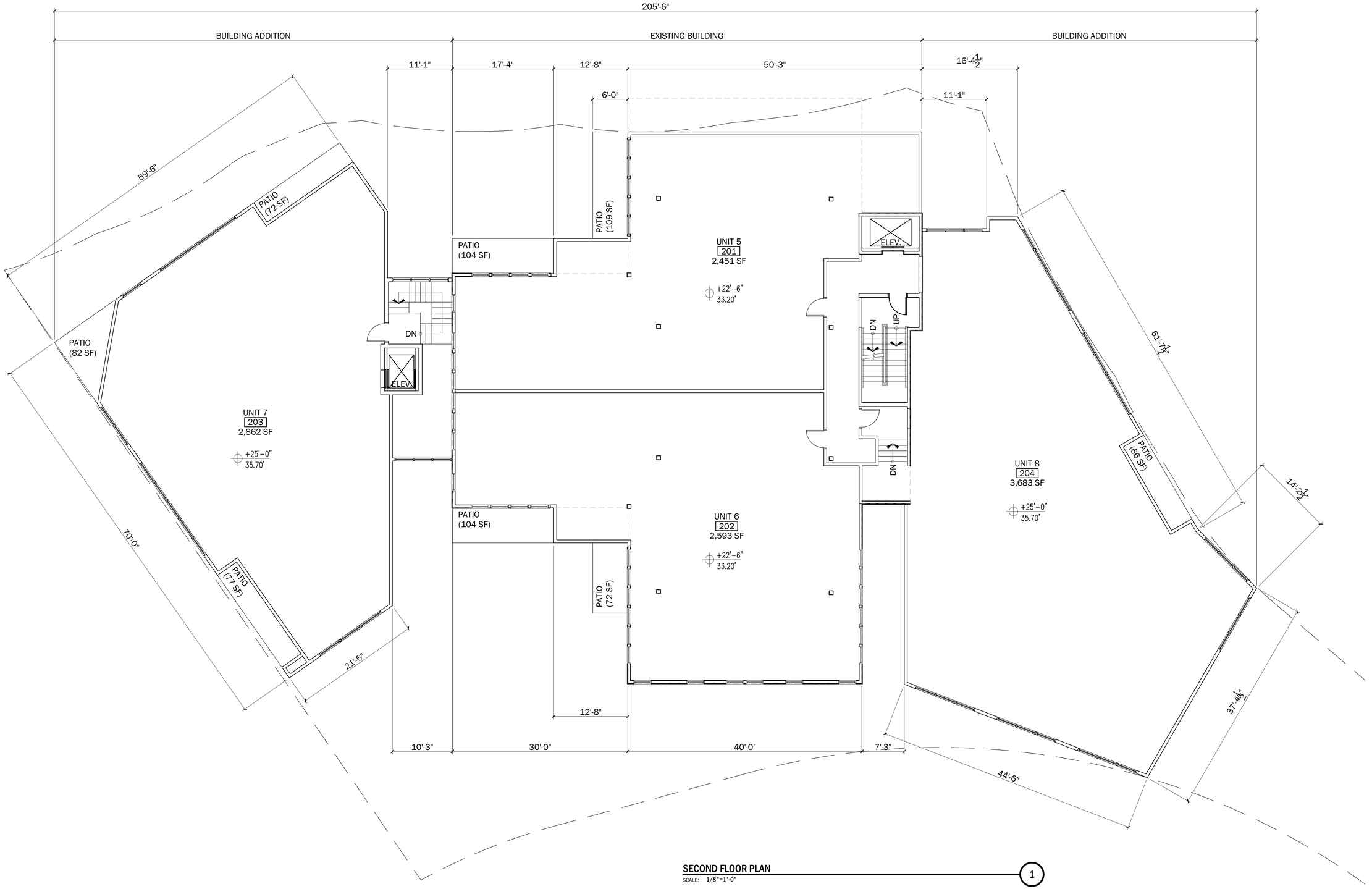
WINTER HOLBEN



FIRST FLOOR PLAN 1

SCALE: 1/8"=1'-0"

7 WALLINGFORD SQUARE
UNIT 2099
KITTERY, ME 03904
207.994.3104
WINTER HOLBEN



SECOND FLOOR PLAN

SCALE: 1/8"=1'-0"

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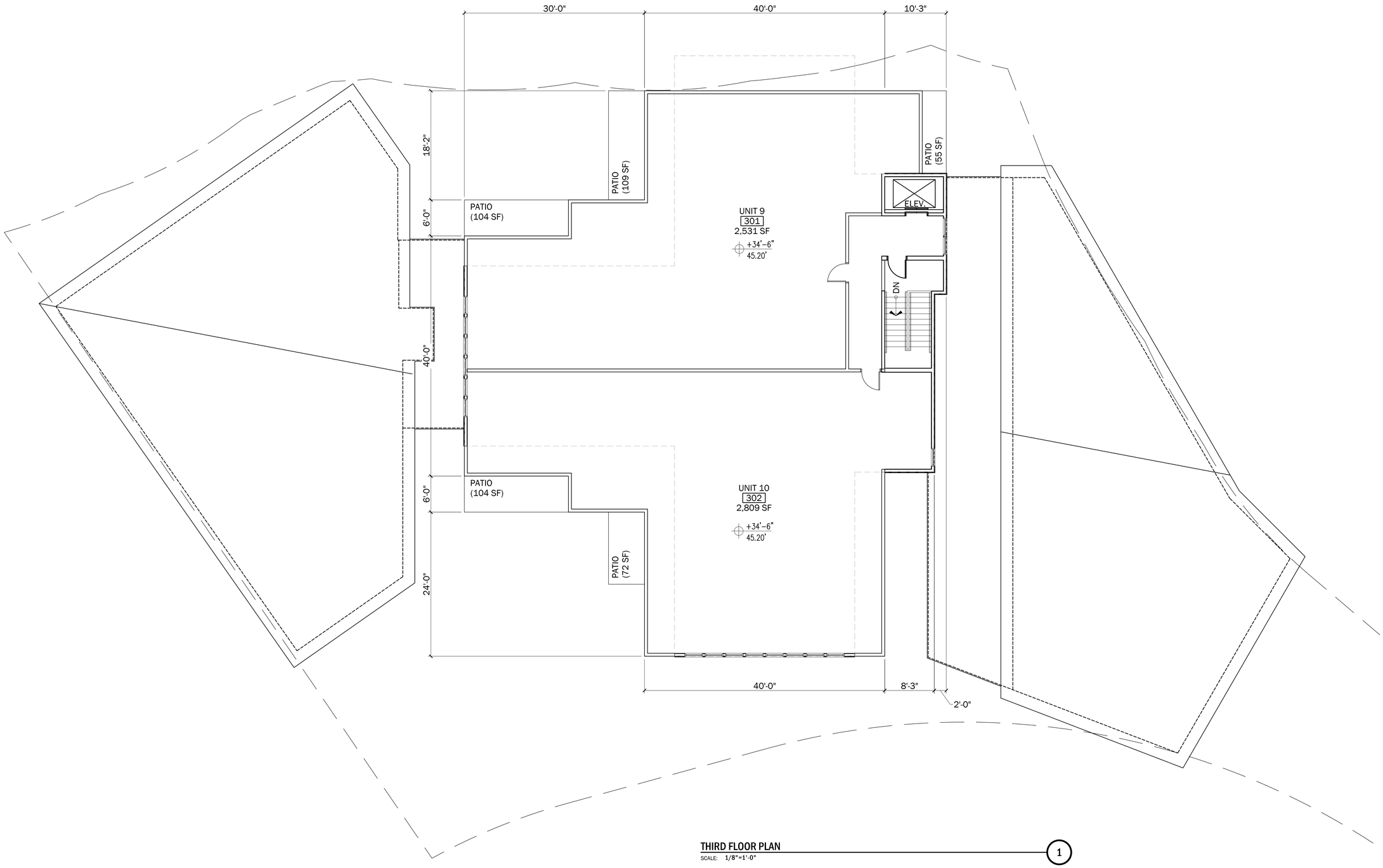
7 WALLINGFORD SQUARE
UNIT 2099
KITTERY, ME 03904
207.994.3104

WINTER HOLBEN



THIRD FLOOR PLAN
SCALE: 1/8"=1'-0"

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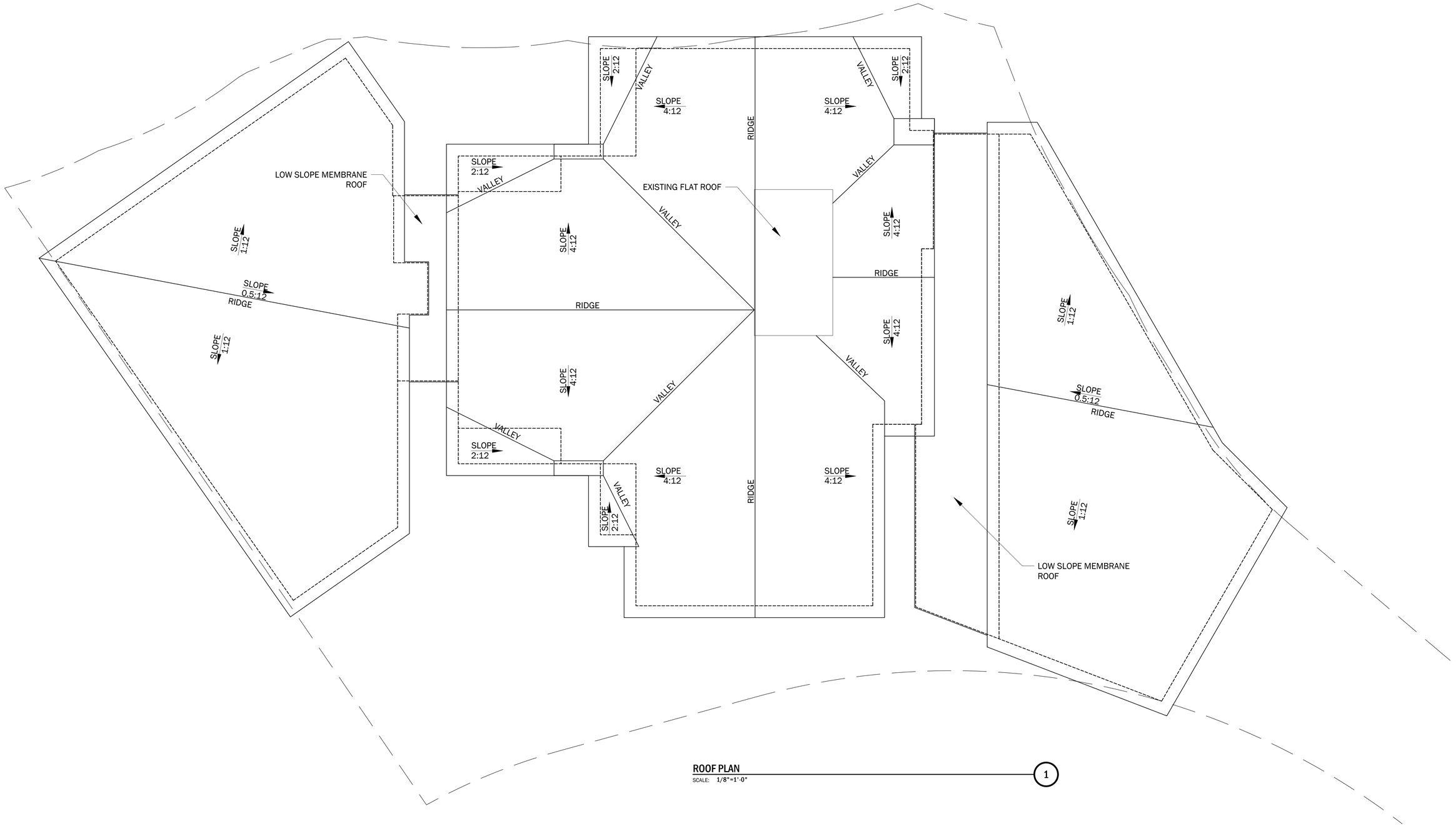
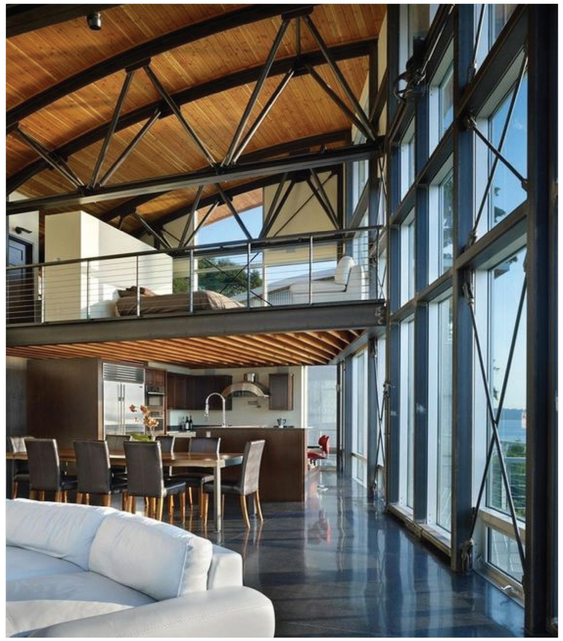
7 WALLINGFORD SQUARE
UNIT 2099
KITTERY, ME 03904
207.994.3104
WINTER HOLBEN



ROOF PLAN
SCALE: 1/8"=1'-0"

1

7 WALLINGFORD SQUARE
UNIT 2099
KITTERY, ME 03904
207.994.3104
WINTER HOLBEN

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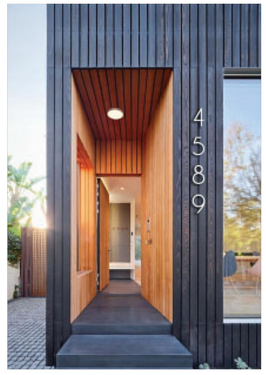
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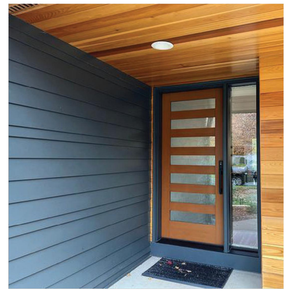

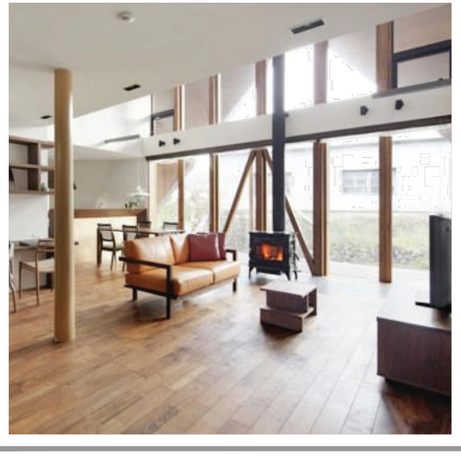


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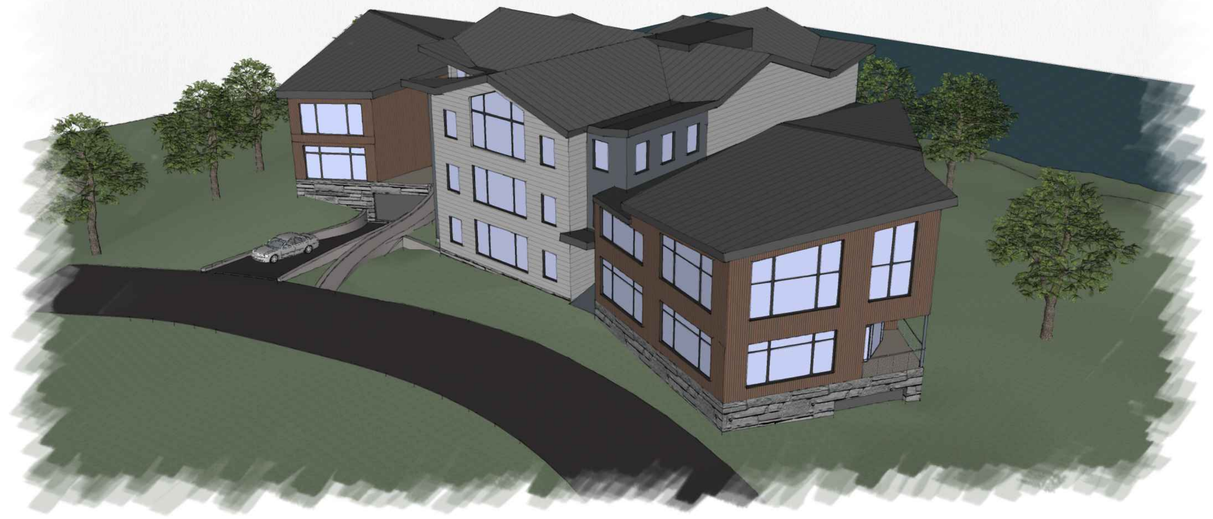
EAST EXTERIOR ELEVATION 1
SCALE: N.T.S.



AERIAL LOOKING SOUTHWEST 2
SCALE: N.T.S.

BADGERS ISLAND WEST - NORTH APPROACH 3
SCALE: N.T.S.

BADGERS ISLAND WEST - SOUTH APPROACH 4
SCALE: N.T.S.

WEST EXTERIOR ELEVATION 1
SCALE: N.T.S.

AERIAL LOOKING NORTHEAST 2
SCALE: N.T.S.

RIVER VIEW LOOKING SOUTH EAST 3
SCALE: N.T.S.

RIVER VIEW LOOKING NORTH EAST 4
SCALE: N.T.S.

7 WALLINGFORD SQUARE
UNIT 2099
KITTERY, ME 03904
207.994.3104
WINTER HOLBEN

RESIDENTIAL CONVERSION

35 BADGERS ISLAND WEST
KITTERY, MAINE

AMENDED SITE PLAN
PRELIMINARY PLAN APPLICATION

OWNER & APPLICANT:
B.I.W. GROUP, LLC
41 INDUSTRIAL DRIVE, UNIT 20
EXETER, N.H. 03833

CIVIL ENGINEER & LAND SURVEYOR:
AMBIT ENGINEERING, INC.
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, N.H. 03801–7114
TEL: (603) 430–9282
FAX: (603) 436–2315

LANDSCAPE ARCHITECT:
WOODBURN & COMPANY
LANDSCAPE ARCHITECTURE
103 KENT PLACE
NEWMARKET, N.H. 03857
TEL: (603) 659–5949

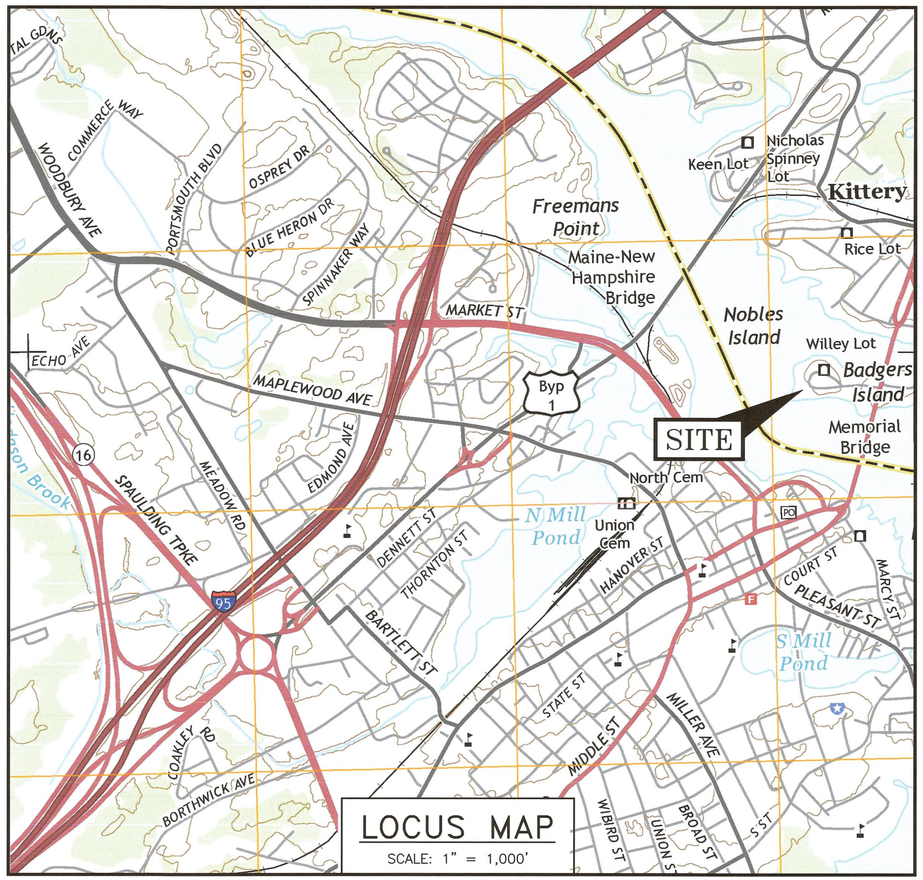
INDEX OF SHEETS

OWNER:

_____ _____
SIGNATURE DATE

APPROVED BY THE KITTERY PLANNING BOARD

_____ _____
CHAIRMAN DATE



LOCUS MAP
SCALE: 1" = 1,000'

LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
YCRD	YORK COUNTY REGISTRY OF DEEDS
11/21	MAP 11 / LOT 21
	BOUNDARY
	BUILDING SETBACK
MHW	MEAN HIGH WATER LINE
MSL	MEAN SEA LEVEL
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
HAT	MAINE DEP HIGHEST ANNUAL TIDE LINE

EXISTING	PROPOSED	
		UNDERGROUND ELECTRIC
		OVERHEAD ELECTRIC/WIRES
S	S	SEWER LINE
G	G	GAS LINE
D	D	STORM DRAIN
W	W	WATER LINE
	RD	ROOF DRAIN/LINE
100	16	CONTOUR
97x3	20X5	SPOT ELEVATION
○	●	IRON ROD/PIPE FOUND/SET
		EDGE OF PAVEMENT
		WOODS / TREE LINE
		UTILITY POLE (w/ GUY)
G W E		METER (GAS, WATER, ELECTRIC)
TYP.		TYPICAL
LSA		LANDSCAPED AREA
WGV		WATER GATE VALVE
		SIGNS
CPP		CORRUGATED PLASTIC PIPE
PVC		POLYVINYL CHLORIDE PIPE
		CATCH BASIN
		SEWER MANHOLE
		DRAIN MANHOLE
EL.		ELEVATION
FF		FINISHED FLOOR
INV.		INVERT
TBM		TEMPORARY BENCHMARK
HP		HEAT PUMP
AC		AIR CONDITIONER
(9)		PARKING SPACE COUNT

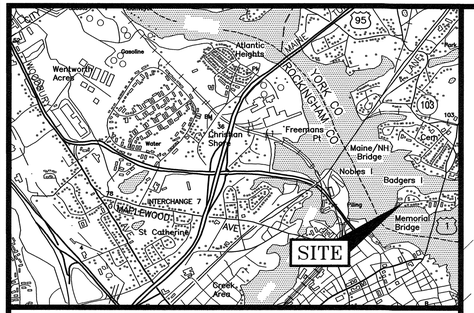
DIG SAFE
MA – ME – NH – RI – VT
1–888–344–7233
CALL TOLL FREE

AMENDED SITE PLAN
TAX MAP 1, LOT 32
RESIDENTIAL CONVERSION
35 BADGERS ISLAND WEST
KITTERY, MAINE

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

PLAN SET SUBMITTAL DATE: 29 JUNE 2023

3050.72 TAX MAP 1 LOT 32



LOCATION MAP SCALE 1"=2,000'

LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
YCRD	YORK COUNTY REGISTRY OF DEEDS
11/27	MAP 11 / LOT 21
	BOUNDARY
	BUILDING SETBACK
MHW	MEAN HIGH WATER LINE
MSL	MEAN SEA LEVEL
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
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	UNDERGROUND ELECTRIC
	OVERHEAD ELECTRIC/WIRES
S	SEWER LINE
G	GAS LINE
D	STORM DRAIN
W	WATER LINE
100	CONTOUR
97x3	SPOT ELEVATION
	IRON ROD/PIPE FOUND
	IRON ROD SET
	EDGE OF PAVEMENT (EP)
	WOODS / TREE LINE
	UTILITY POLE (w/ GUY)
G W E	METER (GAS, WATER, ELECTRIC)
TYP.	TYPICAL
LSA	LANDSCAPED AREA
WGV	WATER GATE VALVE
	SIGNS
CPP	CORRUGATED PLASTIC PIPE
PVC	POLYVINYL CHLORIDE PIPE
	CATCH BASIN
S	SEWER MANHOLE
D	DRAIN MANHOLE

LEGEND (CONTINUED)

EL.	ELEVATION
FF	FINISHED FLOOR
INV.	INVERT
TBM	TEMPORARY BENCHMARK
HP	HEAT PUMP
AC	AIR CONDITIONER

PLAN REFERENCES:

1) BADGERS LANDING CONDOMINIUM STANDARD BOUNDARY SURVEY & CONDOMINIUM SITE PLAN FOR PROPERTY AT 32 BADGERS ISLAND WEST, KITTERY, YORK COUNTY, MAINE CLIENT ISLAND PROPERTIES, LLC PREPARED BY EASTERLY SURVEY, INC. DATED SEPTEMBER 17, 2002, FINAL REVISION DATE SEPTEMBER 30, 2002. Y.C.R.D. PLAN BOOK 581, PAGE 1.

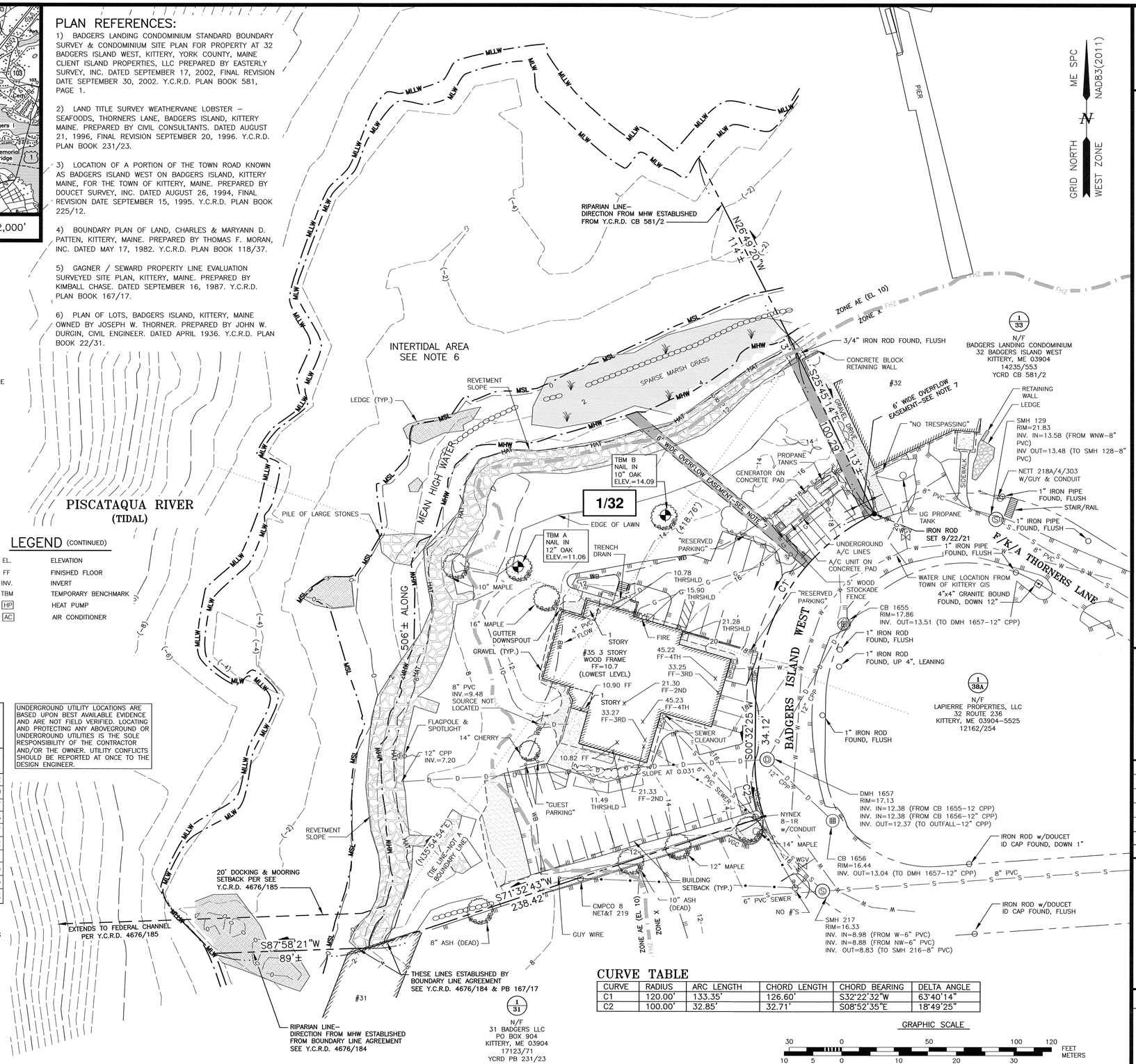
2) LAND TITLE SURVEY WEATHERVANE LOBSTER – SEAFOODS, THORNERS LANE, BADGERS ISLAND, KITTERY MAINE. PREPARED BY CIVIL CONSULTANTS. DATED AUGUST 21, 1996, FINAL REVISION SEPTEMBER 20, 1996. Y.C.R.D. PLAN BOOK 231/23.

3) LOCATION OF A PORTION OF THE TOWN ROAD KNOWN AS BADGERS ISLAND WEST ON BADGERS ISLAND, KITTERY MAINE, FOR THE TOWN OF KITTERY, MAINE. PREPARED BY DOUCET SURVEY, INC. DATED AUGUST 26, 1994, FINAL REVISION DATE SEPTEMBER 15, 1995. Y.C.R.D. PLAN BOOK 225/12.

4) BOUNDARY PLAN OF LAND, CHARLES & MARYANN D. PATTEN, KITTERY, MAINE. PREPARED BY THOMAS F. MORAN, INC. DATED MAY 17, 1982. Y.C.R.D. PLAN BOOK 118/37.

5) GAGNER / SEWARD PROPERTY LINE EVALUATION SURVEYED SITE PLAN, KITTERY, MAINE. PREPARED BY KIMBALL CHASE. DATED SEPTEMBER 16, 1987. Y.C.R.D. PLAN BOOK 167/17.

6) PLAN OF LOTS, BADGERS ISLAND, KITTERY, MAINE OWNED BY JOSEPH W. THORNER. PREPARED BY JOHN W. DURGIN, CIVIL ENGINEER. DATED APRIL 1936. Y.C.R.D. PLAN BOOK 22/31.



DEVEGETATED COVERAGE CALCULATION (TO HAT LINE)

STRUCTURE	EXISTING (S.F.)
MAIN STRUCTURE	5,922
PAVEMENT	12,289
GRAVEL AREAS	2,277
RETAINING WALLS	86
CONCRETE PADS/STEPS	957
REVETMENT	5392
TOTAL	26,923
LOT SIZE	54,883
% LOT COVERAGE	49.1%

UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

PURSUANT TO CHAPTER 90 PARTS 1 AND 2 OF THE SURVEY STANDARDS OF PRACTICE AS ADOPTED BY THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS, THE FOLLOWING EXCEPTIONS TO PART 2 ARE NOTED;

A) NO SURVEY REPORT HAS BEEN PREPARED.
B) NO LAND DESCRIPTION HAS BEEN PREPARED.
C) MONUMENTS HAVE NOT BEEN SET.

THIS SURVEY CONFORMS TO THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CHAPTER 90 STANDARDS OF PRACTICE, EFFECTIVE DATE APRIL 1, 2001 EXCEPT AS NOTED ON THIS PLAN.

JOHN R. CHAGNON, PLS #2276 DATE

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	120.00'	133.35'	126.60'	S32°22'32"W	63°40'14"
C2	100.00'	32.85'	32.71'	S08°52'35"E	18°49'25"

GRAPHIC SCALE
30 0 50 100 120 FEET
10 5 0 10 20 30 METERS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282
WWW.HALEYWARD.COM

NOTES:

1) PARCEL IS SHOWN ON THE TOWN OF KITTERY ASSESSOR'S MAP 1 AS LOT 32.

2) OWNER OF RECORD:
B.I.W. GROUP, LLC
41 INDUSTRIAL DRIVE, UNIT 20
EXETER, NH 03833
18503/331 (FIRST PARCEL)
PLAN BOOK 22/31 (LOTS 14, 15, 16, & 17)

3) A PORTION OF THE PARCEL IS IN A SPECIAL FLOOD HAZARD AREA, ZONE AE (EL 10), AS SHOWN ON PRELIMINARY FIRM PANEL 23031C0709G. REVISED PRELIMINARY 4/14/2017.

4) EXISTING LOT AREA:
58,985± S.F. (TO MEAN HIGH WATER)
1.3541± ACRES (TO MEAN HIGH WATER)

5) PARCEL IS LOCATED IN THE MIXED USE – BADGERS ISLAND (MU–BI) ZONING DISTRICT AND IS SUBJECT TO THE RESOURCE PROTECTION (OZ–RP) AND SHORELAND–WATER BODY / WETLAND PROTECTION AREA (OZ–SL–250') OVERLAY DISTRICTS.

6) DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:		6,000 SF
FRONTAGE:		50 FEET
SETBACKS:	FRONT	5 FEET
	SIDE	10 FEET
	REAR	10 FEET
MAXIMUM BUILDING HEIGHT:		40 FEET
MINIMUM OPEN SPACE:		40%

4) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON ASSESSOR'S MAP 1 LOT 32 IN THE TOWN OF KITTERY.

5) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS. MHW, MSL, MLW, AND MLLW BASED ON NOAA STATION 8419870–SEAVEY ISLAND, PORTSMOUTH HARBOR, ME.

6) AREA BETWEEN MEAN HIGH WATER AND MEAN LOW WATER ARE SUBJECT TO THE RIGHTS OF THE PUBLIC.

7) PARCEL IS SUBJECT TO A 6' WIDE EASEMENT FOR "LAYING AND MAINTAINING AN OVERFLOW PIPE FROM A CEPTIC (sic) TANK ON THE CONVEYED LOT UNDER THE ROADWAY". BENEFITING LOTS 1, 2, 3, 4, AND 5 ON PLAN REFERENCE 6 (NOW ASSESSOR'S MAP 1 LOTS 38 & 38A). SAID EASEMENT WAS GRANTED AS BEING ON LOT 14 BUT ALONG THE COMMON LOT LINE OF 14 & 15 OR COMMON LINE OF 13 & 14, SEE Y.C.R.D. 1301/275. IT IS NOT CLEAR IN WHICH LOCATION THE PIPE WAS CONSTRUCTED.

8) HIGHEST ANNUAL TIDE LINE SHOWN AT ELEVATION 5.8 PER LOCATION SEAVEY ISLAND IN MAINE DEP HIGHEST ANNUAL TIDE (HAT) LEVELS FOR YEAR 2018.

SITE DEVELOPMENT 35 BADGERS ISLAND WEST KITTERY, MAINE

NO.	DESCRIPTION	DATE
4	LOT 1–EXISTING CONDITIONS	6/20/23
3	LEGEND	5/18/23
2	ADD PRELIMINARY FEMA FHZ LINES	2/24/23
1	ISSUED FOR APPROVAL	1/19/23
0	ISSUED FOR COMMENT	8/18/22

REVISIONS

STATE OF MAINE JOHN R CHAGNON No. 2276 PROFESSIONAL LAND SURVEYOR

6.20.23

SCALE 1"=30' AUGUST 2021

EXISTING CONDITIONS PLAN

C1

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32

P:\NY\05\P315-Hampshire_Development\3050.72A-Badgers Island W.(05)-BC\05.72A Hampshire Development\2022 Dw Permitting\Plans & Specs\Dwg\3050_72A Site NEW 2022.dwg, 6/20/2023 10:12:29 AM

DEVEGETATED COVERAGE CALCULATION
(TO HAT LINE)

STRUCTURE	PRE–CONSTRUCTION (S.F.) *	POST–CONSTRUCTION (S.F.)
MAIN STRUCTURE	5,922	13,231
DECKS/STAIRS	0	264
PAVEMENT/COBBLES	12,289	2,133
GRAVEL	2,277	0
RETAINING WALLS	86	114
CONCRETE PADS/STEPS/SIDEWALK	957	456
PATIOS/WALKWAYS	0	218
REVETMENT/RIPRAP	5,392	5,392
TOTAL	26,923	21,808
LOT SIZE	54,883	54,883
% DEVEGETATED AREA	49.1%	39.7%

* FROM RECENT APPROVAL. OPEN SPACE: 60%

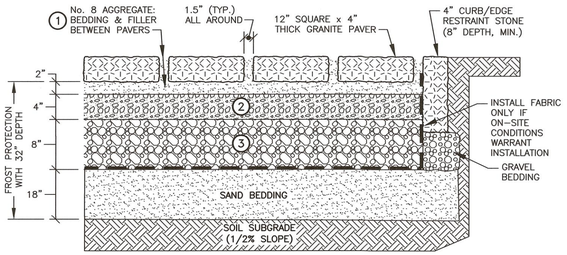
1,971 S.F. SUBTRACTED FROM WETLAND BUFFER

62 S.F. ADDED TO WETLAND BUFFER

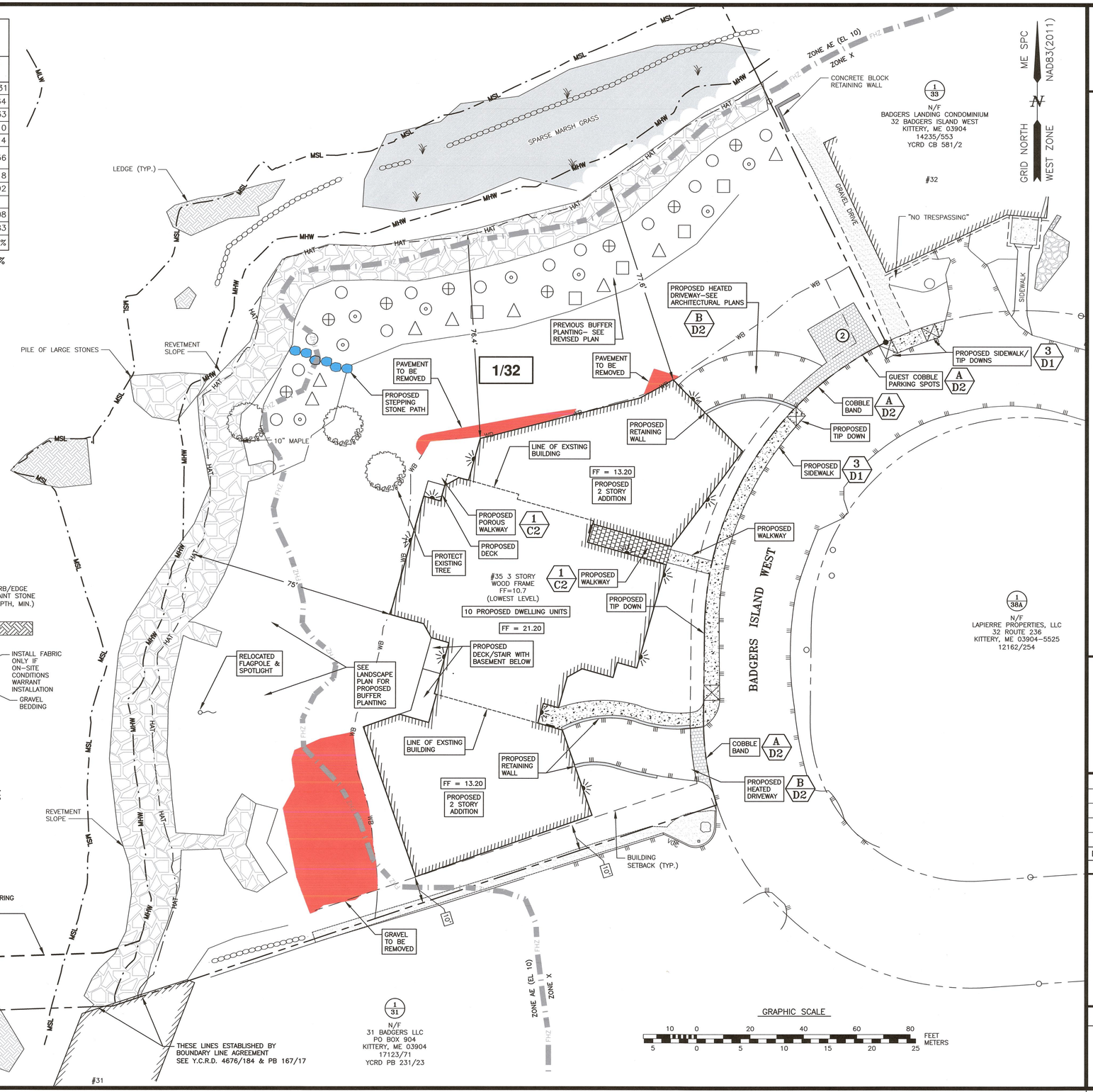
ASTM D 448 GRADATION TABLE

①		②		③	
ASTM No. 8 BEDDING & JOINT FILLER		ASTM No. 57 STONE OPEN GRADED BASE		ASTM No. 2 STONE SUBBASE	
SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)
1/2" (12.5mm)	100	1.5" (37.5mm)	100	3" (75mm)	100
3/8" (9.5mm)	85–100	1" (25mm)	95–100	2.5" (63mm)	90–100
No. 4 (4.75mm)	10–30	1/2" (12.5mm)	25–60	2" (50mm)	35–70
No. 8 (2.36mm)	0–10	No. 4 (4.75mm)	0–10	1.5" 37.5mm)	0–15
No. 16 (1.16mm)	0–5	No. 8 (2.36mm)	0–5	3/4" (19mm)	0–5

NOTES:
1) PAVING SYSTEM BASE DESIGN IS SIMILAR TO BASE REQUIRED FOR THE UNI ECO–STONE PAVER. INSTALLATION SHALL FOLLOW MANUFACTURER'S INSTRUCTIONS FOR PLACEMENT OF BASE MATERIALS.
2) ALL STONE SHALL BE ANGULAR, WITH 90% FRACTURED FACES. STONE SHALL BE WASHED WITH LESS THAN 1% PASSING THE 200 SIEVE.
3) CONTRACTOR SHALL SUBMIT SIEVE ANALYSIS FOR EACH COURSE MATERIAL TO PROJECT ENGINEER FOR APPROVAL PRIOR TO PLACEMENT.



1/C2 POROUS PATIO/WALKWAY DETAIL
NTS



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NOTES:

1) PARCEL IS SHOWN ON THE TOWN OF KITTERY ASSESSOR'S MAP 1 AS LOT 32.

2) OWNER OF RECORD:
B.I.W. GROUP, LLC
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EXETER, NH 03833
18503/331 (FIRST PARCEL)
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3) A PORTION OF THE PARCEL IS IN A SPECIAL FLOOD HAZARD AREA, ZONE AE (EL 10), AS SHOWN ON PRELIMINARY FIRM PANEL 23031C0709G. REVISED PRELIMINARY 4/14/2017.

4) EXISTING LOT AREA:
58,985± S.F. (TO MEAN HIGH WATER)
1.3541± ACRES (TO MEAN HIGH WATER)
(PARCEL AREA TO HAT LINE 54,883 S.F.)

5) PARCEL IS LOCATED IN THE MIXED USE – BADGERS ISLAND (MU–BI) ZONING DISTRICT AND IS SUBJECT TO THE RESOURCE PROTECTION (OZ–RP) AND SHORELAND–WATER BODY / WETLAND PROTECTION AREA (OZ–SL–250') AND COMMERCIAL FISHERIES MARITIME USES (OZ–CFMU) OVERLAY DISTRICTS.

6) DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:		6,000 SF
FRONTAGE:		50 FEET
SETBACKS:	FRONT	5 FEET
	SIDE	10 FEET
	REAR	10 FEET
MAXIMUM BUILDING HEIGHT:		40 FEET
MINIMUM OPEN SPACE:	40%	

4) THE PURPOSE OF THIS PLAN IS TO SHOW A PROPOSED BUILDING EXPANSION AND RESIDENTIAL CONVERSION ON ASSESSOR'S MAP 1 LOT 32 IN THE TOWN OF KITTERY.

5) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS. MHW, MSL, MLW, AND MLLW BASED ON NOAA STATION 8419870–SEAVEY ISLAND, PORTSMOUTH HARBOR, ME.

6) AREA BETWEEN MEAN HIGH WATER AND MEAN LOW WATER ARE SUBJECT TO THE RIGHTS OF THE PUBLIC.

7) HIGHEST ANNUAL TIDE LINE SHOWN AT ELEVATION 5.8 PER LOCATION SEAVEY ISLAND IN MAINE DEP HIGHEST ANNUAL TIDE (HAT) LEVELS FOR YEAR 2018.

8) TRASH COLLECTION WILL BE INTERIOR WITH SCHEDULED PICK UP.

SITE DEVELOPMENT 35 BADGERS ISLAND WEST KITTERY, MAINE

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	6/29/23

REVISIONS

STATE OF MAINE JOHN R. CHAGNON No. 2278 PROFESSIONAL LAND SURVEYOR

STATE OF MAINE JOHN R. CHAGNON No. 9580 LICENSED PROFESSIONAL ENGINEER

6.29.23

SCALE 1"=20' AUGUST 2022

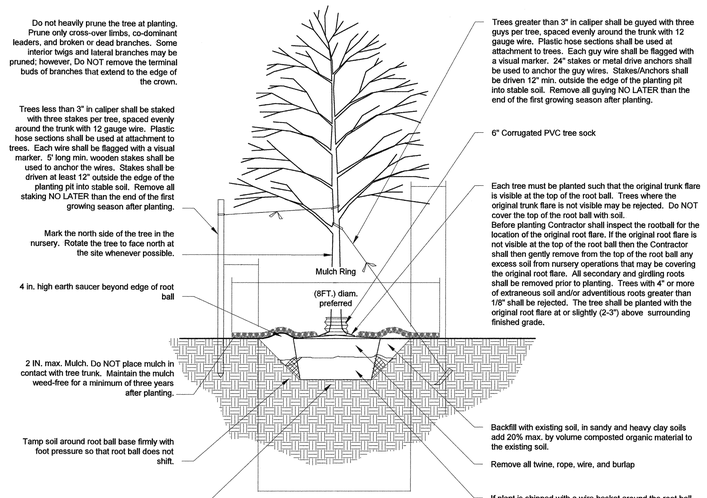
SHORELAND DEVELOPMENT PLAN

C2

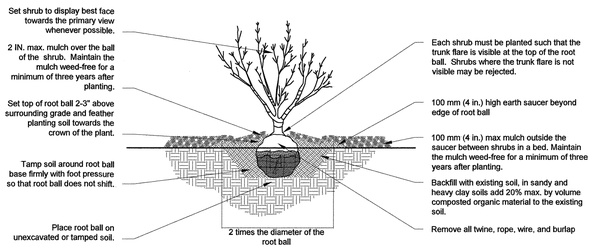
FB 423 PG 1 3050.72 TAX MAP 1 LOT 32

Landscape Notes

1. Design is based on drawings by Ambit Engineering dated 2023-06-27. Drawings may require adjustment due to actual field conditions.
2. This plan is FOR REVIEW purposes ONLY, NOT for Construction. Construction Documents will be provided upon request.
3. The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
4. Erosion Control shall be in place prior to construction.
5. Erosion Control shall comply with State and Local Erosion & Sedimentation Control Practices
6. The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
7. It is the contractor's responsibility to verify drawings provided are to the correct scale prior to any bid, estimate or installation. A graphic scale bar has been provided on each sheet for this purpose. If it is determined that the scale of the drawing is incorrect, the landscape architect will provide a set of drawings at the correct scale, at the request of the contractor.
8. Trees to Remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Snow fence shall be located at the drip line or at the distance in feet from the trunk equal to the diameter of the tree caliper in inches, whichever is greater, and shall be expanded to include any and all surface roots. Do not fill or mulch on the trunk flare. Do not disturb roots. In order to protect the integrity of the roots, branches, trunk and bark of the tree(s) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s). Do not store any refuse or construction materials or portalets within the tree protection area.
9. Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
10. The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call DIGSAFE at 811 or 888-DIG-SAFE (1-888-344-7233.)
11. The Contractor shall procure any required permits prior to construction.
12. Prior to any landscape construction activities Contractor shall test all existing loam and loam from off-site intended to be used for lawns and plant beds using a thorough sampling throughout the supply. Soil testing shall indicate levels of pH, nitrates, macro and micro nutrients, texture, soluble salts, and organic matter. Contractor shall amend all soils to be used for lawns and plant beds per testing results' recommendations and review with Landscape Architect. All loam to be used on site shall be amended as approved by the Landscape Architect prior to placement.
13. Contractor shall notify landscape architect or owner's representative immediately if at any point during demolition or construction a site condition is discovered which may negatively impact the completed project. This includes, but is not limited to, unforeseen drainage problems, unknown subsurface conditions, and discrepancies between the plan and the site. If a Contractor is aware of a potential issue and does not bring it to the attention of the Landscape Architect or Owner's Representative immediately, they may be responsible for the labor and materials associated with correcting the problem.
14. The Contractor shall furnish and plant all plants shown on the drawings and listed thereon. All plants shall be nursery-grown under climatic conditions similar to those in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the American Standard of Nursery Stock, American Standards Institute, Inc. 230 Southern Building, Washington, D.C. 20005.
15. A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.
16. All plants shall be legibly tagged with proper botanical name.
17. Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not affect the right of inspection and rejection during or after the progress of the work. The Owner reserves the right to inspect and/or select all trees at the place of growth and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
18. No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
19. All landscaping shall be provided with the following:
    a. Outside hose attachments spaced a maximum of 150 feet apart, and
    b. An underground irrigation system, or
    c. A temporary irrigation system designed for a two-year period of plant establishment.
21. If an automatic irrigation system is installed, all irrigation valve boxes shall be located within planting bed areas.
22. The contractor is responsible for all plant material from the time their work commences until final acceptance. This includes but is not limited to maintaining all plants in good condition, the security of the plant material once delivered to the site, watering of plants, including seeding and weeding. Plants shall be appropriately watered prior to, during, and after planting. It is the Contractor's responsibility to provide clean water suitable for plant health from off site, should it not be available on site.
23. All disturbed areas will be dressed with 6" of loam and planted as noted on the plans or seeded except plant beds. Plant beds shall be prepared to a depth of 12" with 75% loam and 25% compost.
24. Trees, ground cover, and shrub beds shall be mulched to a depth of 2" with one-year-old, well-composted, shredded native bark not longer than 4" in length and ¼" in width, free of woodchips and sawdust. Mulch for ferns and herbaceous perennials shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 5' diameter min. saucer. Color of mulch shall be black.
25. Drip strip shall extend to 6" min. beyond roof overhang and shall be edged with 3/16" thick metal edger.
26. In no case shall mulch touch the stem of a plant nor shall mulch ever be more than 3" thick total (including previously applied mulch) over the root ball of any plant.
27. Secondary lateral branches of deciduous trees overhanging vehicular and pedestrian travel ways shall be pruned up to a height of 8' to allow clear and safe passage of vehicles and pedestrians under tree canopy. Shrubs and ornamental plantings adjacent to vehicular travel way shall not exceed three feet in height where sightlines would be blocked. If pruning is necessary to maintain the required maximum height, plants shall be pruned to a natural form and shall not be sheared.
28. Snow shall be stored a minimum of 5' from shrubs and trunks of trees.
29. The Landscape Contractor shall guarantee all lawns and plant materials for a period of not fewer than two years. Dead, dying, or diseased planting shall be removed and replaced within the growing season.
30. Landscape Architect is not responsible for the means and methods of the Contractor.



Tree Planting Detail
Scale: NTS



Shrub Planting Detail
Scale: NTS

Plant List

Plant List

TREES

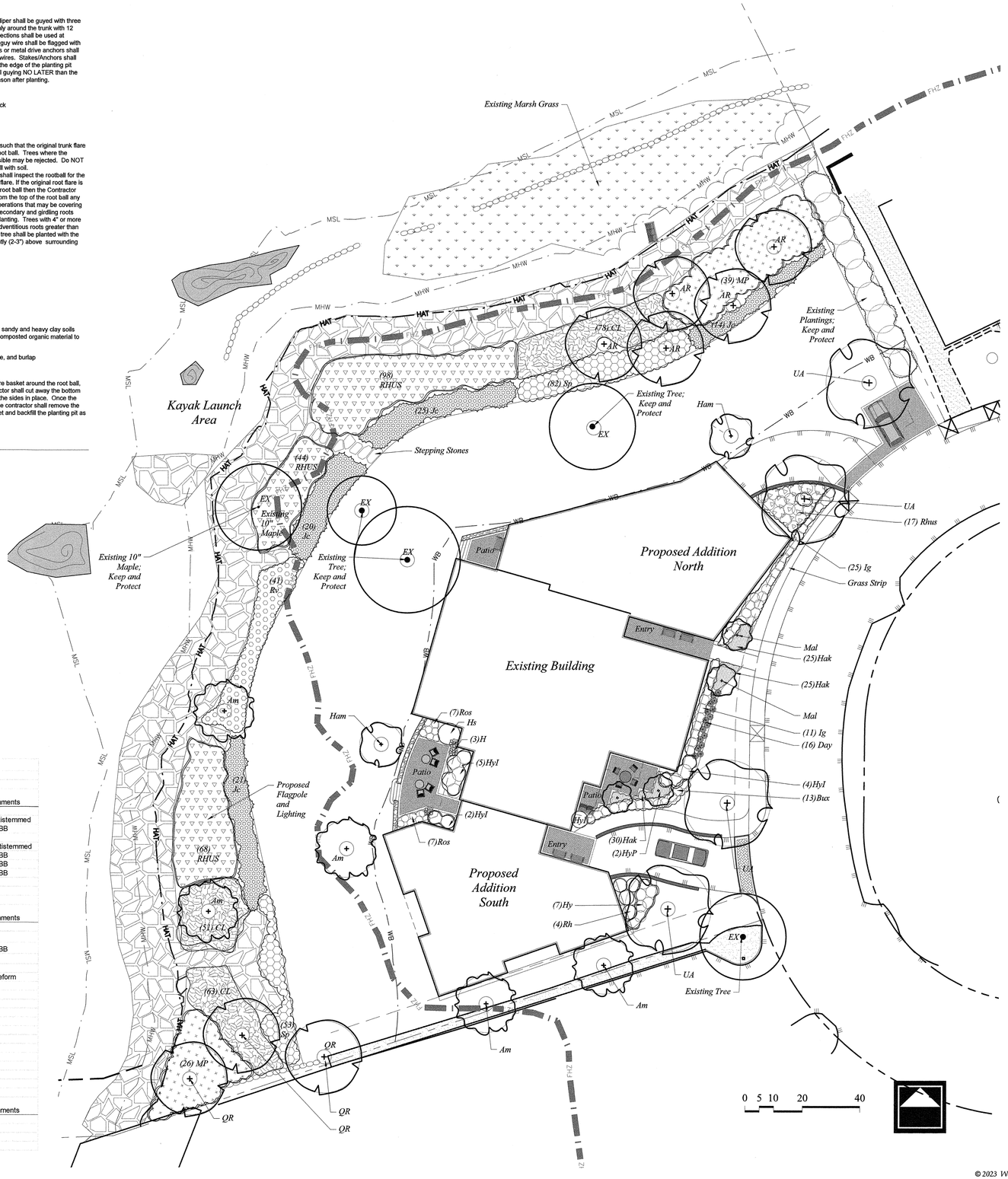
Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Am	*Amelanchier grandiflora 'Autumn Brilliance'*	Autumn Brilliance Serviceberry	5	8-10' ht	BB multistemmed
Ar	*Acer rubrum 'October Glory'*	October Glory Red Maple	5	3" cal.	BB
Ex	*Existing tree to remain*	*Existing tree to remain*			
Ham	*Hamamelis x 'Arnold Promis'*	Arnold Promise Witch Hazel	2	7-8' ht.	BB multistemmed
Mal	*Malus 'Tina'*	Tina Crabapple	2	2.5" cal.	BB
QR	*Quercus rubra*	Northern Red Oak	3	3" cal	BB
UA	*Ulmus americana 'Princeton'*	Princeton Elm	4	3" cal	BB

SHRUBS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
CL	*Clethra alnifolia 'Hummingbird'*	Hummingbird Clethra	192	3 gal	
Hs	*Hibiscus syriacus 'Blue Satin'*	Blue Satin Rose of Sharon	1	5-6 HT.	BB
HY	*Hydrangea macrophylla 'All Summer Beauty'*	All Summer Beauty Hydrangea (Blue	7	3 gal	
HYI	*Hydrangea a. 'Incrediball'*	Incrediball Hydrangea	11	5 gal	
HyP	*Hydrangea paniculata 'Limelight'*	Limelight Hydrangea	2	10 gal	treeform
IG	*Ilex glabra 'Shamrock'*	Shamrock Inkberry	36	5 gal	
JC	*Juniperus communis*	Common Juniper	80	3 gal	
MP	*Myrica pennsylvanica*	Bayberry	65	5 gal	
RH	*Rhododendron chionoides*	Chionioides Rhododendron	4	5 gal	
RHUS	*Rhus aromatica 'Grow Low'*	Grow Low Sumac	227	3 gal	
ROS	*Rosa 'Blush Knockout'*	Blush Knockout Rose	7	3 gal	
ROS	*Rosa 'Apricot Drift'*	Apricot Drift Rose	7	3 gal	
SP	*Spirea latifolia "Pink Mountain'*	Pink Mountain Spirea	135	3 gal	

PERENNIALS, GROUNDCOVERS, VINES and ANNUALS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
DAY	*Daylily mix*	Mixed Daylilies		1 gal	
HAL	*Hakonecloa aurea*				



woodburn & company
LANDSCAPE ARCHITECTURE
103 Kent Place Newmarket, New Hampshire Phone: 603.659.5949

35 Badger's Island West

LANDSCAPE PLAN

for Hampshire Development Corporation
35 Badger's Island West, Kittery, Maine

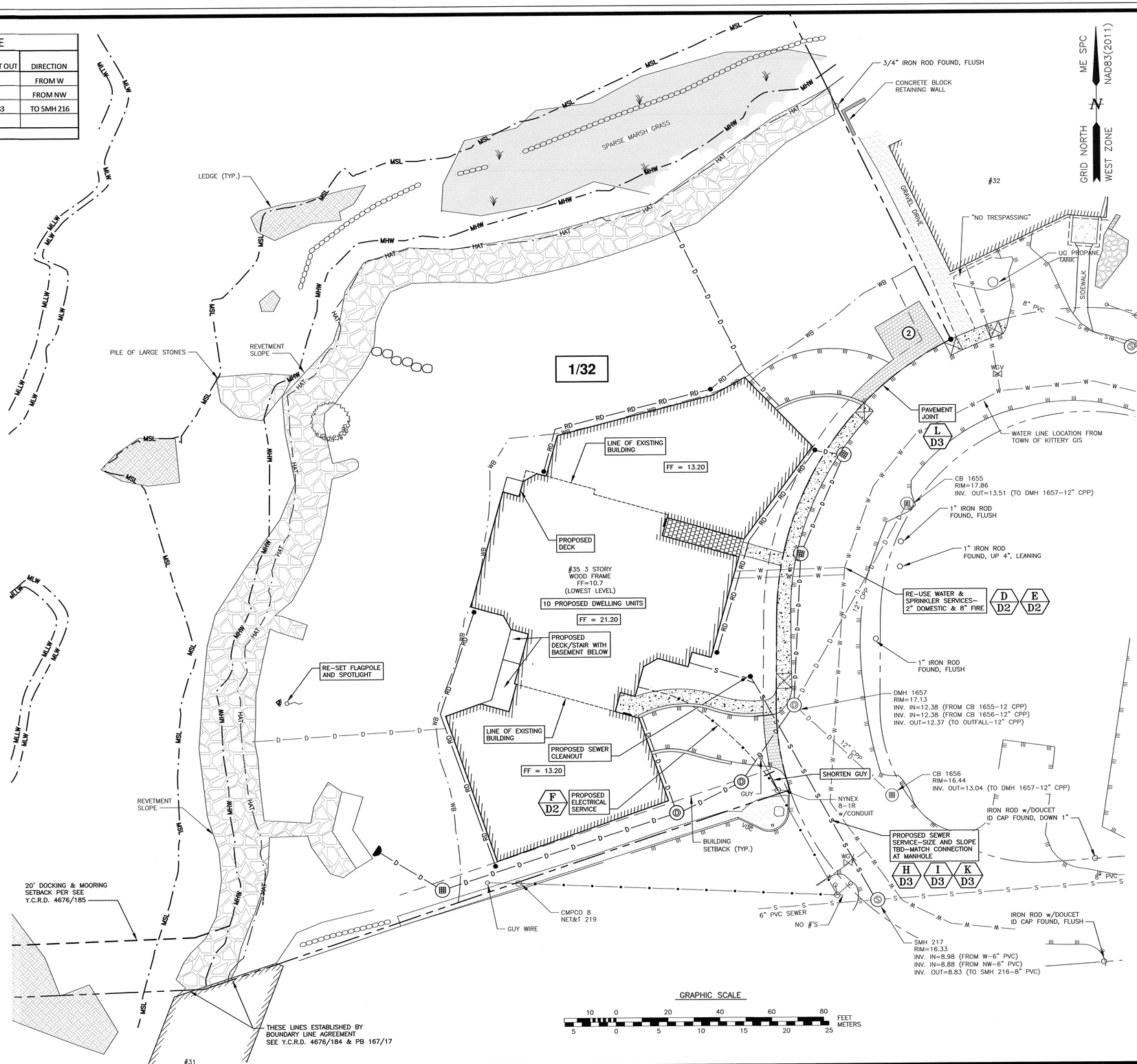
Drawn By:	WSA
Checked By:	RW
Scale:	1"=20'-0"
Date:	2023-05-25 for PB submission
Revisions:	2023-06-29 ISSUED SUBMISSION

L-1

Sheet 1 of 1

SEWER STRUCTURE SCHEDULE

STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT	DIRECTION
SMH 217	EX	16.33	6" PVC	8.98		FROM W
			6" PVC	8.88		FROM NW
			8" PVC		8.83	TO SMH 216



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WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE ''MAINE EROSION AND SEDIMENT CONTROL BMP's'' PUBLISHED BY THE MAINE D.E.P. IN 2016.

4) CONTRACTOR SHALL FIELD VERIFY THE DEPTH OF EXISTING UTILITIES AND COORDINATE WITH THE ENGINEER PRIOR TO CONSTRUCTION OF THE PROPOSED UTILITIES.

5) ALL UTILITIES SHOWN ARE TO REMAIN UNLESS NOTED OTHERWISE.

6) COORDINATE UTILITY CONNECTIONS AND INSTALLATIONS WITH RESPECTIVE UTILITY COMPANIES AND SERVICE PROVIDERS.

7) CONTRACTOR SHALL MAINTAIN EXISTING UTILITY SERVICES TO ADJACENT PROPERTIES DURING CONSTRUCTION. PROVIDE PROPER NOTIFICATION OF ANY SERVICE INTERRUPTIONS.

8) ALL WATER, SEWER, AND ROADWAY WORK TO BE COMPLETED TO KITTERY WATER DISTRICT AND TOWN OF KITTERY STANDARDS. WORK IN BADGER'S ISLAND WEST SUBJECT TO TOWN MORATORIUM.

SITE DEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, MAINE

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	6/29/23

REVISIONS

STATE OF MAINE
JOHN R CHAGNON
No. 6950
LICENSED
PROFESSIONAL ENGINEER
6.29.23

SCALE 1"=20' AUGUST 2022

UTILITY PLAN — **C3**

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32

P:\JOBS\3050-Hampshire_Development\3050.72A-Badgers Island W\DELIVERABLES\2022 Site Permitting\Plans & Specs\Site\3050_72A Site 2022.dwg, 6/29/2023 1:43:47 PM

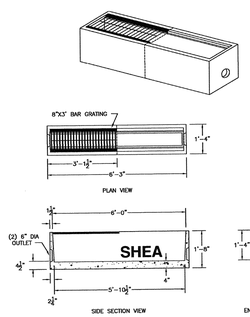
DRAINAGE STRUCTURE SCHEDULE

STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT	DIRECTION
DMH 1657	EX	17.13	18" CPP	12.38	12.37	SW
			12" CPP	12.38		
			12" HDPE	12.48		
TD 1	PROP	13.1	6" PVC	11.77	11.57	SE
TD 2	PROP	13.1	6" PVC	11.77	11.57	NW
DMH 1	PROP	16.0	18" HDPE	10.91	10.81	SW
DMH 2	PROP	14.0	18" HDPE	10.07	9.97	SW
DMH 2	PROP	13.0	6" PVC	10.89		
CB 1	PROP	9.9	18" HDPE	7.63	7.53	NW
CB 2	PROP	16.8	12" HDPE		13.63	S
CB 2	PROP	16.8	6" PVC	14.63		W
CB 3	PROP	18.3	12" HDPE	12.79	12.69	S

PIPE SCHEDULE

PIPE #	PIPE SIZE	LENGTH	SLOPE
P1	18"	30'	0.049
P2	18"	22'	0.034
P3	18"	90'	0.026
P4	18"	25'	0.028
P5	6"	16'	0.014
P6	12"	64'	0.007
P7	12"	8'	0.004
P8	12"	36'	0.023
P9	12"	53'	0.004
P10	6"	14'	0.014
P11	6"	22'	0.040

*ALL PIPE TO BE HDPE/PVC
**P5 AND P10 ARE STRIP DRAINS



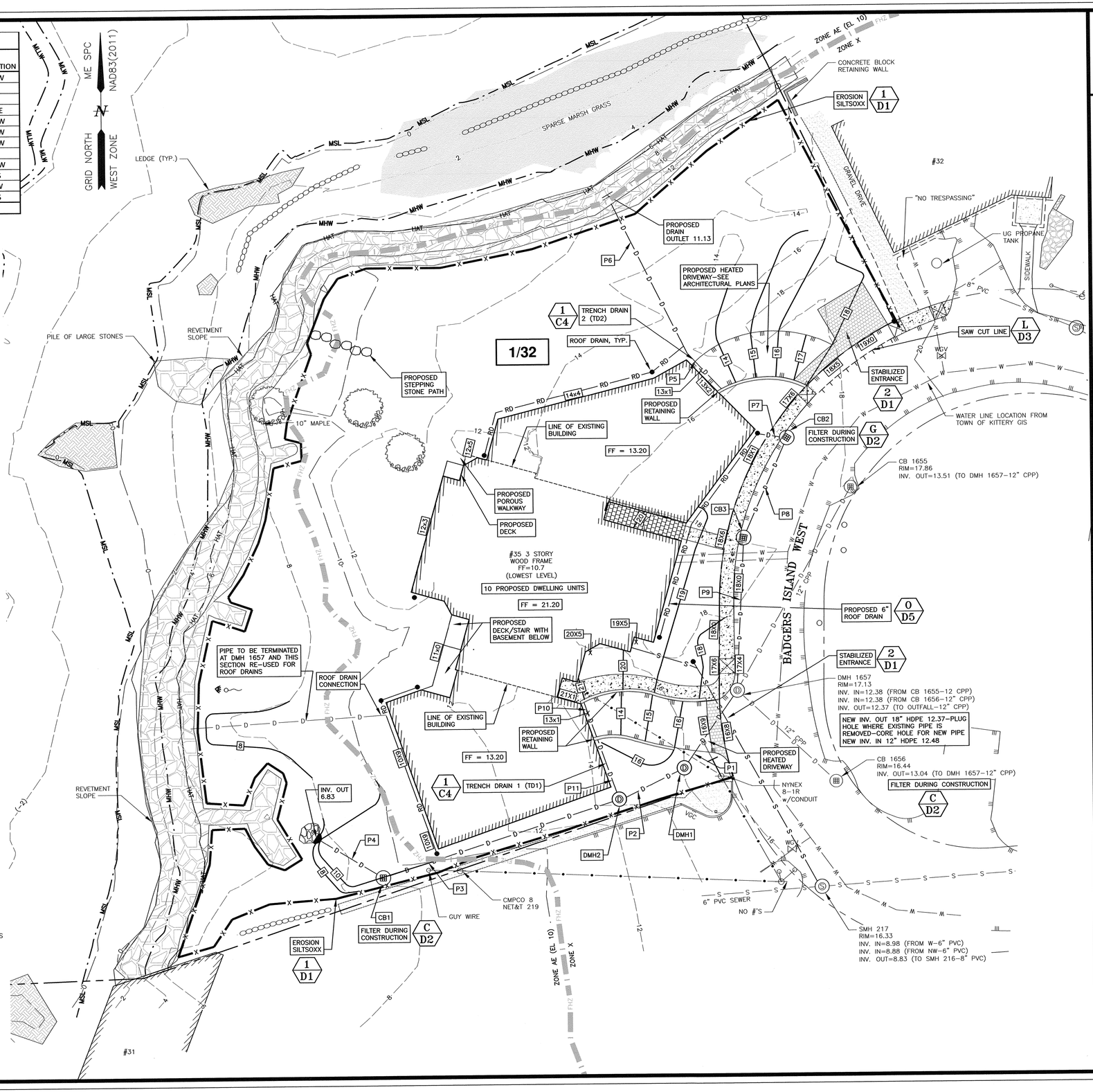
SHEA PRODUCT ID: TD3/TD6
TRENCH DRAIN 8"X16"
WEIGHT (LBS): 711#/1,315#

1/C4 STRIP DRAIN
NTS

GRAPHIC SCALE
10 0 20 40 60 80 FEET
5 0 5 10 15 20 25 METERS

"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

6.29.23
JOHN R. CHAGNON, LLS DATE



AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282
WWW.HALEYWARD.COM

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

4) TOTAL PROJECT DISTURBED AREA 41,535 S.F.

5) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.

SITE DEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, MAINE

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	6/29/23

REVISIONS

STATE OF MAINE JOHN R. CHAGNON No. 9350 LICENSED PROFESSIONAL ENGINEER
STATE OF MAINE JOHN R. CHAGNON No. 1278 PROFESSIONAL LAND SURVEYOR
6.29.23

SCALE 1"=20' AUGUST 2022

GRADING PLAN

C4

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32

DEMOLITION NOTES:

A) THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE DESIGNER. IT IS THE CONTRACTORS' RESPONSIBILITY TO LOCATE UTILITIES AND ANTICIPATE CONFLICTS. CONTRACTOR SHALL REPAIR EXISTING UTILITIES DAMAGED BY THEIR WORK AND RELOCATE EXISTING UTILITIES THAT ARE REQUIRED TO BE RELOCATED PRIOR TO COMMENCING ANY WORK IN THE IMPACTED AREA OF THE PROJECT.

B) ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTORS UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES. THE CONTRACTOR SHALL COORDINATE REMOVAL, RELOCATION, DISPOSAL, OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.

C) ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO THE ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

D) THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES AND CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.

E) SAWCUT AND REMOVE PAVEMENT ONE FOOT OFF PROPOSED EDGE OF PAVEMENT TRENCH IN AREAS WHERE PAVEMENT IS TO BE REMOVED.

F) IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL THE PERMIT APPROVALS.

G) THE CONTRACTOR SHALL OBTAIN AND PAY FOR ADDITIONAL CONSTRUCTION PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR ANY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK.

H) THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, CONCRETE, UTILITIES, VEGETATION, PAVEMENT, AND CONTAMINATED SOIL WITHIN THE WORK LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ANY EXISTING DOMESTIC / IRRIGATION SERVICE WELLS IN THE PROJECT AREA IDENTIFIED DURING THE CONSTRUCTION AND NOT CALLED OUT ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER FOR PROPER CAPPING / RE-USE.

I) ALL WORK WITHIN THE TOWN OF KITTERY RIGHT OF WAY SHALL BE COORDINATED WITH THE TOWN OF KITTERY DEPARTMENT OF PUBLIC WORKS (DPW).

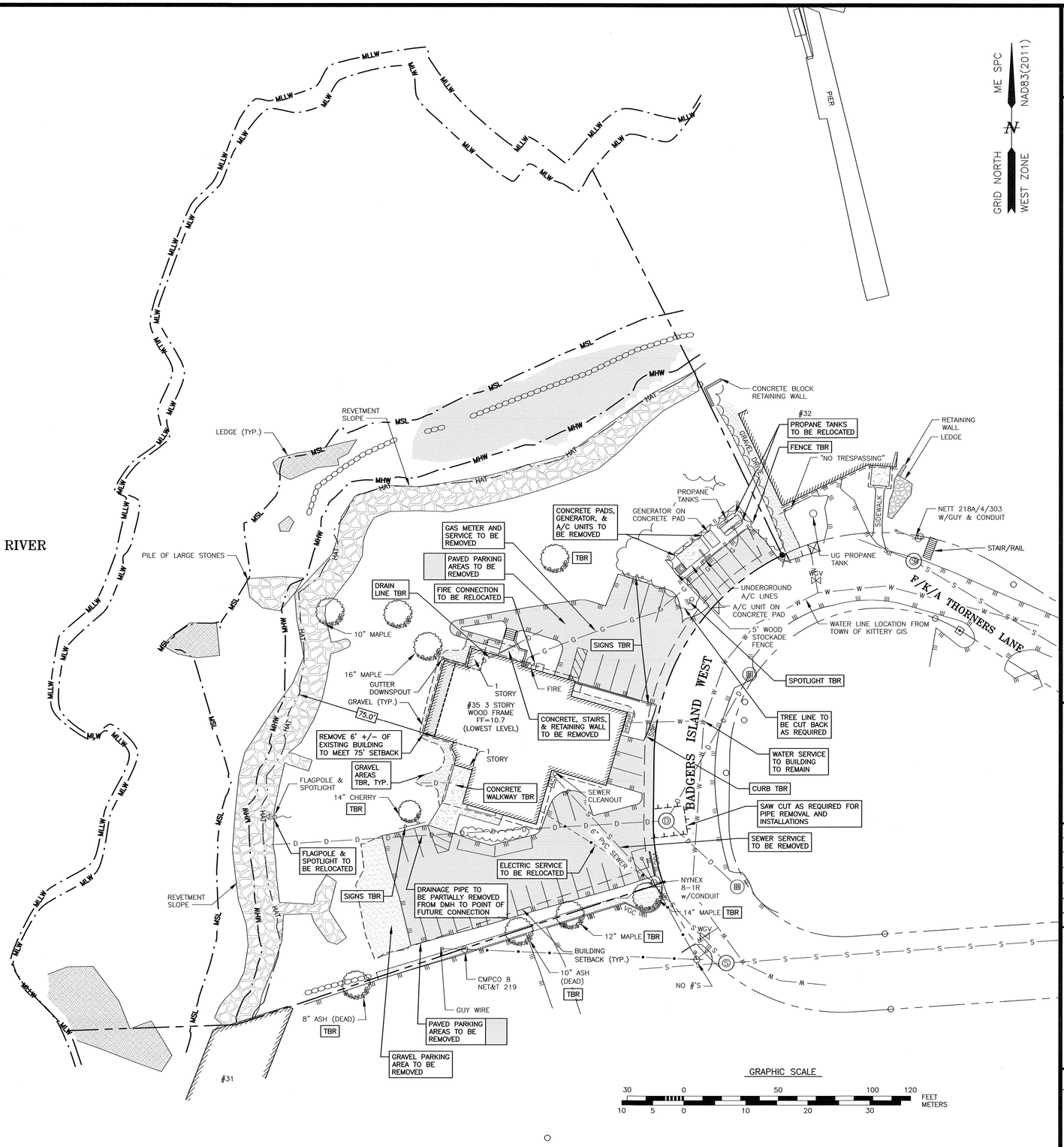
J) REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF-SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

K) CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED, THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR TO REPLACE THEM.

L) PROVIDE INLET PROTECTION BARRIERS AT ALL CATCH BASINS WITHIN CONSTRUCTION LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT. INLET PROTECTION BARRIERS SHALL BE HIGH FLOW SILT SACK BY ACF ENVIRONMENTAL OR APPROVED EQUAL. INSPECT BARRIERS WEEKLY AND AFTER EACH RAIN OF 0.25 INCHES OR GREATER. CONTRACTOR SHALL COMPLETE A MAINTENANCE INSPECTION REPORT AFTER EACH INSPECTION. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE OFTEN IF WARRANTED OR FABRIC BECOMES CLOGGED. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.

M) THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY AND SAFELY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.

N) ANY CONTAMINATED MATERIAL REMOVED DURING THE COURSE OF THE WORK WILL REQUIRE HANDLING IN ACCORDANCE WITH MEDEP REGULATIONS. CONTRACTOR SHALL HAVE A HEALTH AND SAFETY PLAN IN PLACE, AND COMPLY WITH ALL APPLICABLE PERMITS, APPROVALS, AUTHORIZATIONS, AND REGULATIONS



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C) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2014.

SITE DEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, MAINE

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	6/29/23

REVISIONS

STATE OF MAINE
JOHN R. CHAGNON
No. 6950
LICENSED PROFESSIONAL ENGINEER

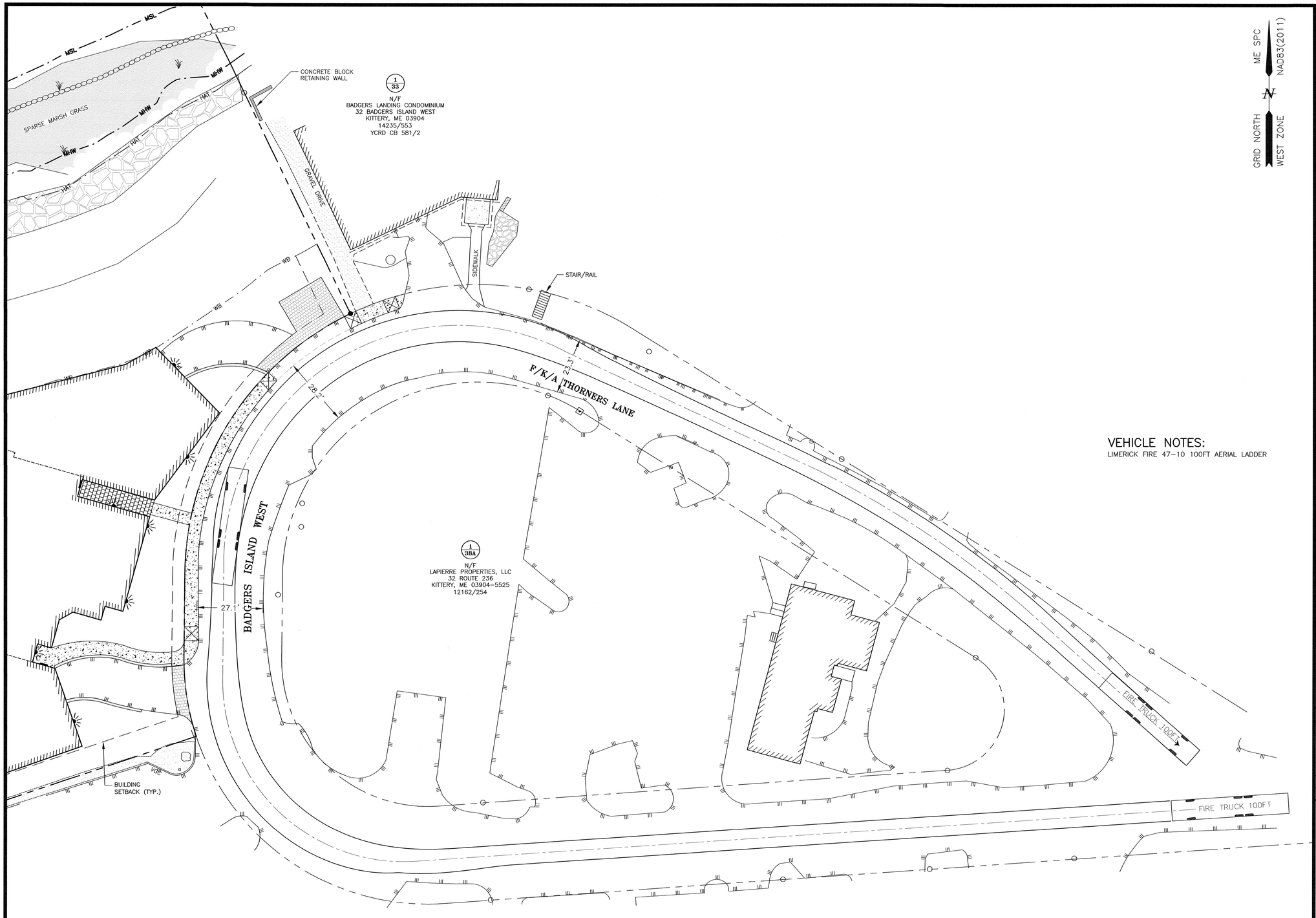
6.29.23

SCALE 1"=30' AUGUST 2021

DEMOLITION PLAN C5

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32

P:\NHS\2019\19-Hampshire_Development\3050.72-Badgers Island W\DWG\REC\3050.72A-Hampshire Development\2022 Site Permitting\Plans & Specs\Dwg\3050_72A Site 2022.dwg, 6/27/2023 9:30:01 AM



VEHICLE NOTES:

LIMERICK FIRE 47-10 100FT AERIAL LADDER

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SITE DEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, MAINE

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	6/29/23

REVISIONS

STATE OF MAINE
JOHN R CHAGNON
No. 6950
LICENSED PROFESSIONAL ENGINEER

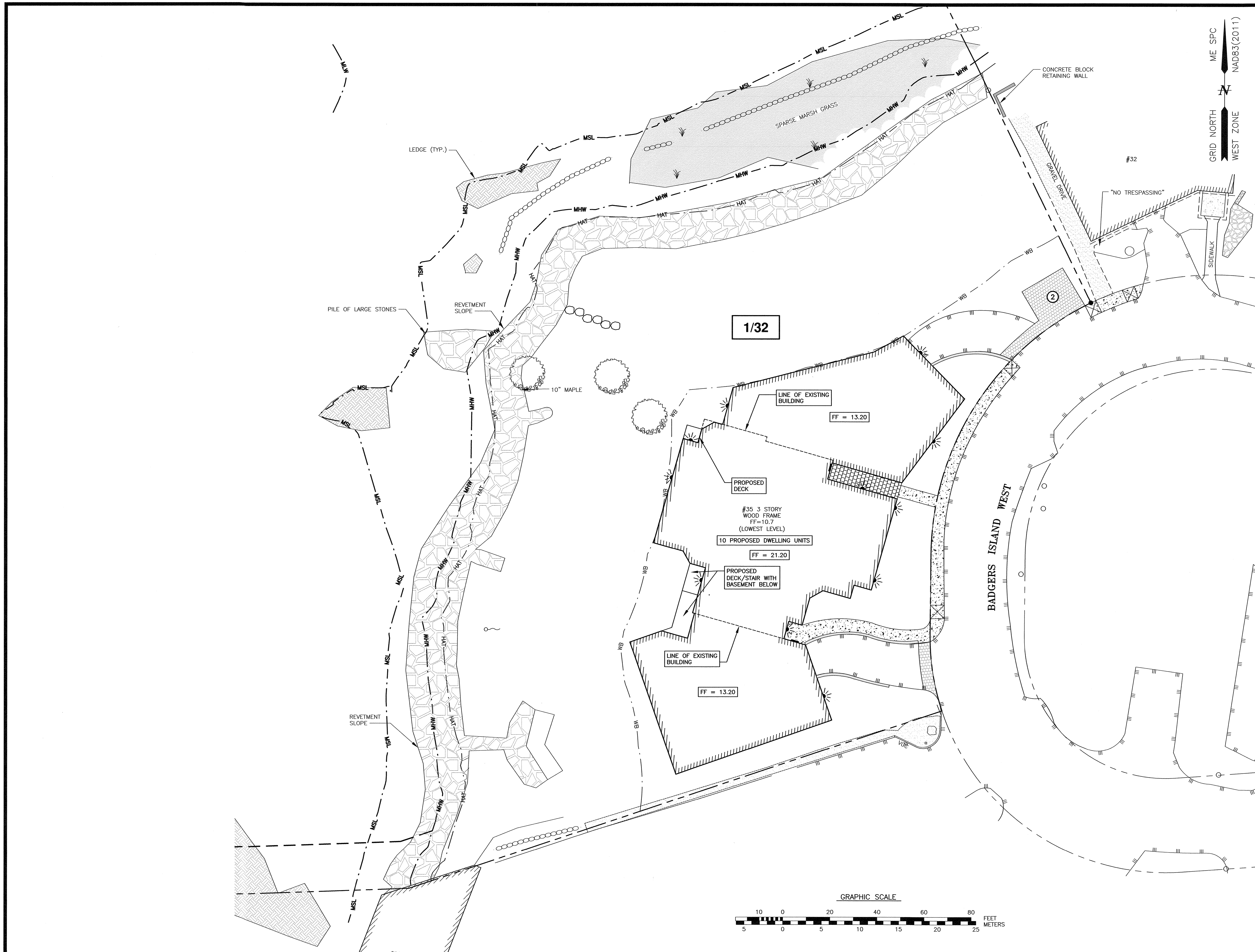
6.29.23

SCALE 1"=20' AUGUST 2022

TURNING TEMPLATE PLAN — **T1**

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32

P:\3050\3050.72\35-Hampshire_Development\3050.72A-Badgers Island W\05-ISC\3050.72A-Hampshire Development2022 Site Permitting\Plans & Specs\Dwg\3050_72A Site 2022.dwg 6/29/2023 11:08:42 AM



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200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

NOTES:

1) PARCEL IS SHOWN ON THE TOWN OF KITTERY ASSESSOR'S MAP 1 AS LOT 32.

2) OWNER OF RECORD:
B.I.W. GROUP, LLC
41 INDUSTRIAL DRIVE, UNIT 20
EXETER, NH 03833
18503/331 (FIRST PARCEL)
PLAN BOOK 22/31 (LOTS 14, 15, 16, & 17)

3) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED LIGHTING ON THE TOWN OF KITTERY ASSESSOR'S MAP 1 AS LOT 32.

SITE DEVELOPMENT 35 BADGERS ISLAND WEST KITTERY, MAINE

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	6/29/23

REVISIONS

SCALE 1"=20' AUGUST 2022

LIGHTING PLAN

C7

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32

EROSION CONTROL NOTES

CONSTRUCTION SEQUENCE

DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE, AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.

INSTALL PERIMETER CONTROLS, i.e., SILT FENCING OR SILTSOXX AROUND THE LIMITS OF DISTURBANCE BEFORE ANY EARTH MOVING OPERATIONS. THE USE OF HAY BALES IS NOT ALLOWED.

CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.

PERFORM CLEARING & GRUBBING

CUT AND GRUB ALL TREES, SHRUBS, SAPLINGS, BRUSH, VINES AND REMOVE OTHER DEBRIS AND RUBBISH AS REQUIRED.

REMOVE PAVEMENT AS NEEDED.

BULLDOZE TOPSOIL INTO STOCKPILES, AND CIRCLE WITH SILT FENCING OR SILTSOXX. IF EROSION IS EXCESSIVE, THEN COVER WITH MULCH.

ROUGH GRADE SITE. IN LANDSCAPED AREAS OUT OF THE WAY OF SUBSEQUENT CONSTRUCTION ACTIVITY, INSTALL TOPSOIL, MULCH, SEED AND FERTILIZE. STABILIZE PER DETAILS.

CONSTRUCT FOUNDATIONS.

LAYOUT AND INSTALL ALL BURIED UTILITIES AND SERVICES TO THE PROPOSED BUILDING FOUNDATIONS. CAP AND MARK TERMINATIONS OR LOG SWING TIES.

CONSTRUCT BUILDING FRAMES.

FINISH GRADE SITE, DRIVEWAY & PARKING SUBBASE GRAVEL IN TWO, COMPACTED LIFTS. PROVIDE TEMPORARY EROSION PROTECTION TO DITCHES AND SWALES IN THE FORM OF MULCHING, JUTE MESH OR DITCH DAMS. CONSTRUCT BINDER COURSE.

BUILDING EXTERIOR WORK & LIGHT FIXTURES.

AFTER BUILDING IS COMPLETED FINISH ALL REMAINING LANDSCAPED WORK.

CONSTRUCT ASPHALT WEARING COURSE.

REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

GENERAL CONSTRUCTION NOTES

THE EROSION CONTROL PROCEDURES SHALL CONFORM TO "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
- A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
- A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR,
- EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

DUST CONTROL: IF TEMPORARY STABILIZATION PRACTICES, SUCH AS TEMPORARY VEGETATION AND MULCHING, DO NOT ADEQUATELY REDUCE DUST GENERATION, APPLICATION OF WATER OR CALCIUM CHLORIDE SHALL BE APPLIED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM OF 0.5" OR GREATER. ALL DAMAGED SILT FENCES SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

AVOID THE USE OF FUTURE OPEN SPACES (LOAM AND SEED AREAS) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ACCESS DRIVES AND PARKING AREAS.

TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS. CONSTRUCT SILT FENCE AROUND TOPSOIL STOCKPILE.

AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. STUMPS SHALL BE DISPOSED BY GRINDING OR FILL IN AN APPROVED FACILITY.

ALL FILLS SHALL BE PLACED AND COMPACTED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.

ALL FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8 INCHES IN THICKNESS UNLESS OTHERWISE NOTED.

FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIAL SHALL NOT BE INCORPORATED INTO FILLS.

FILL MATERIAL SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.

DISTURBED AREAS SHALL BE SEEDED WITHIN 72 HOURS FOLLOWING FINISHED GRADING.

AT NO TIME SHALL ANY DISTURBED AREA REMAIN UNSTABILIZED FOR LONGER THAN 72 HOURS. ALL AREAS WHERE CONSTRUCTION IS NOT COMPLETE WITHIN THIRTY DAYS OF THE INITIAL DISTURBANCE SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

VEGETATIVE PRACTICE

FOR PERMANENT MEASURES AND PLANTINGS:

LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE.

FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 500 POUNDS PER ACRE OF 10-20-20 FERTILIZER.

SEED SHALL BE SOWN AT THE RATES SHOWN IN THE TABLE BELOW. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE, AND SHALL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.

A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE:

GENERAL COVER	PROPORTION	SEEDING RATE
CREEPING RED FESCUE	50%	100 LBS/ACRE
KENTUCKY BLUEGRASS	50%	
SLOPE SEED (USED ON ALL SLOPES GREATER THAN OR EQUAL TO 3:1)		
CREEPING RED FESCUE	42%	
TALL FESCUE	42%	48 LBS/ACRE
BIRDSFOOT TREFOIL	16%	

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PROTECTION OF DISTURBED AREAS:
MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:
PERENNIAL RYE: 0.7 LBS/1,000 S.F.
MULCH: 1.5 TONS/ACRE

MAINTENANCE AND PROTECTION

THE CONTRACTOR SHALL MAINTAIN ALL LOAM & SEED AREAS UNTIL FINAL ACCEPTANCE AT THE COMPLETION OF THE CONTRACT. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, REMOVAL OF STONES AND OTHER FOREIGN OBJECTS OVER 1/2 INCHES IN DIAMETER WHICH MAY APPEAR AND THE FIRST TWO (2) CUTTINGS OF GRASS NO CLOSER THEN TEN (10) DAYS APART. THE FIRST CUTTING SHALL BE ACCOMPLISHED WHEN THE GRASS IS FROM 2 1/2 TO 3 INCHES HIGH. ALL BARE AND DEAD SPOTS WHICH BECOME APPARENT SHALL BE PROPERLY PREPARED, LIMED AND FERTILIZED, AND RESEEDED BY THE CONTRACTOR AT HIS EXPENSE AS MANY TIMES AS NECESSARY TO SECURE GOOD GROWTH. THE ENTIRE AREA SHALL BE MAINTAINED, WATERED AND CUT UNTIL ACCEPTANCE OF THE LAWN BY THE OWNER'S REPRESENTATIVE.

THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT IS DEVELOPING.

TO BE ACCEPTABLE, SEEDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.

SEEDED AREAS WILL BE FERTILIZED AND RESEEDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT.

THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATION IS ESTABLISHED.

THE SILT FENCE BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

SILT FENCING SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE REMOVAL SHALL BE PERMANENTLY SEEDED.

WINTER NOTES

ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL.

INSPECTION AND MAINTENANCE PLAN

INTRODUCTION

THE INTENT OF THIS IS TO PROVIDE HAMPSHIRE DEVELOPMENT A LIST OF PROCEDURES THAT DOCUMENT THE INSPECTION AND MAINTENANCE REQUIREMENTS OF THE STORMWATER MANAGEMENT SYSTEM FOR THIS DEVELOPMENT. SPECIFICALLY, THE PROPOSED CONSTRUCTION DRAINAGE AND ASSOCIATED STRUCTURES ON THE PROJECT SITE (COLLECTIVELY REFERRED TO AS THE "STORMWATER MANAGEMENT SYSTEM")

THE FOLLOWING INSPECTION AND MAINTENANCE PROGRAM IS NECESSARY TO KEEP THE STORMWATER MANAGEMENT SYSTEM FUNCTIONING PROPERLY. THESE MEASURES WILL ALSO HELP MINIMIZE POTENTIAL ENVIRONMENTAL IMPACTS. BY FOLLOWING THE ENCLOSED PROCEDURES, THE OWNER WILL BE ABLE TO MAINTAIN THE FUNCTIONAL DESIGN OF THE STORMWATER MANAGEMENT SYSTEM AND MAXIMIZED ITS ABILITY TO REMOVE SEDIMENT AND OTHER CONTAMINANTS FROM THE SITE GENERATED STORMWATER RUNOFF.

STORMWATER MANAGEMENT SYSTEM COMPONENTS

THE STORMWATER MANAGEMENT SYSTEM IS DESIGNED TO MITIGATE BOTH THE QUANTITY AND QUALITY OF SITE-GENERATED RUNOFF. AS THE RESULT, THE DESIGN INCLUDES THE FOLLOWING ELEMENTS:

NON-STRUCTURAL BMP'S

NON-STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) INCLUDE TEMPORARY AND PERMANENT MEASURES THAT TYPICALLY REQUIRE LESS LABOR AND CAPITAL INPUTS AND ARE INTENDED TO PROVIDE PROTECTION AGAINST EROSION OF SOILS. EXAMPLES OF NON-STRUCTURAL BMP'S ON THIS PROJECT INCLUDE BUT ARE NOT LIMITED TO: TEMPORARY AND PERMANENT MULCHING, TEMPORARY AND PERMANENT GRASS COVER, TREES, SHRUBS AND GROUND COVERS, MISCELLANEOUS LANDSCAPE PLANTINGS, DUST CONTROL, TREE PROTECTION, TOPSOILING, SEDIMENT BARRIERS, AND DURING CONSTRUCTION, STABILIZED CONSTRUCTION ENTRANCES AND CATCH BASIN BASKETS. IN THIS SITE TOTAL IMPERVIOUS AREA IS REDUCED.

STRUCTURAL BMP'S

STRUCTURAL BMP'S REQUIRE MORE SPECIALIZED PERSONNEL TO INSTALL. EXAMPLES ON THE PROJECT INCLUDE BUT ARE NOT LIMITED TO: STORM DRAINS, THE FILTRATION BASIN, THE JELLYFISH FILTER, AND ASSOCIATED OUTLET CONTROL STRUCTURES.

INSPECTION AND MAINTENANCE REQUIREMENTS

THE FOLLOWING SUMMARIZES THE INSPECTION AND MAINTENANCE REQUIREMENTS FOR THE VARIOUS BMP'S THAT MAY BE FOUND ON THIS PROJECT:

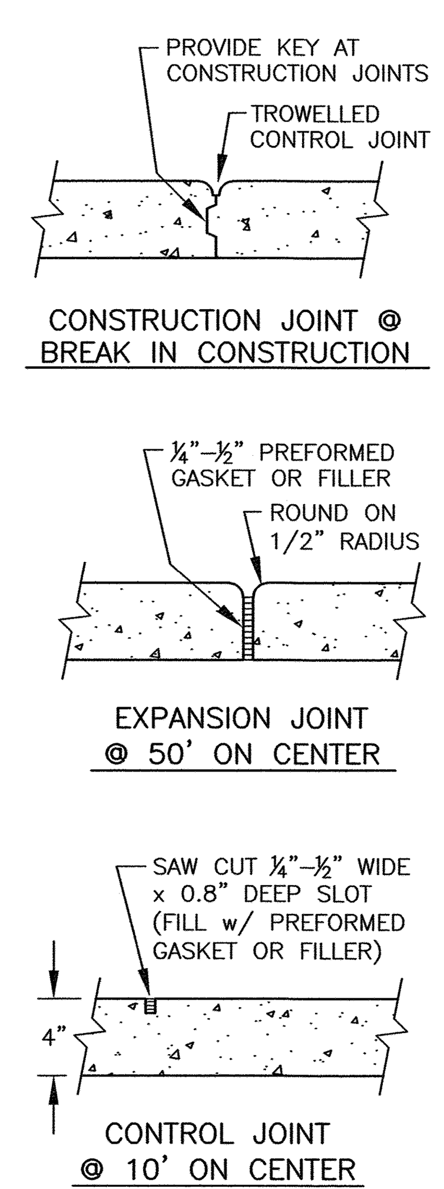
1. GRASSED AREAS: AFTER EACH RAIN EVEN OF 0.5" OR MORE DURING A 24 HOUR PERIOD, INSPECT GRASSED AREAS FOR SIGNS OF DISTURBANCE, SUCH AS EROSION. IF DAMAGED AREAS ARE DISCOVERED, IMMEDIATELY REPAIR THE DAMAGE. REPAIRS MAY INCLUDE ADDING NEW TOPSOIL, LIME, SEED, FERTILIZER AND MULCH.

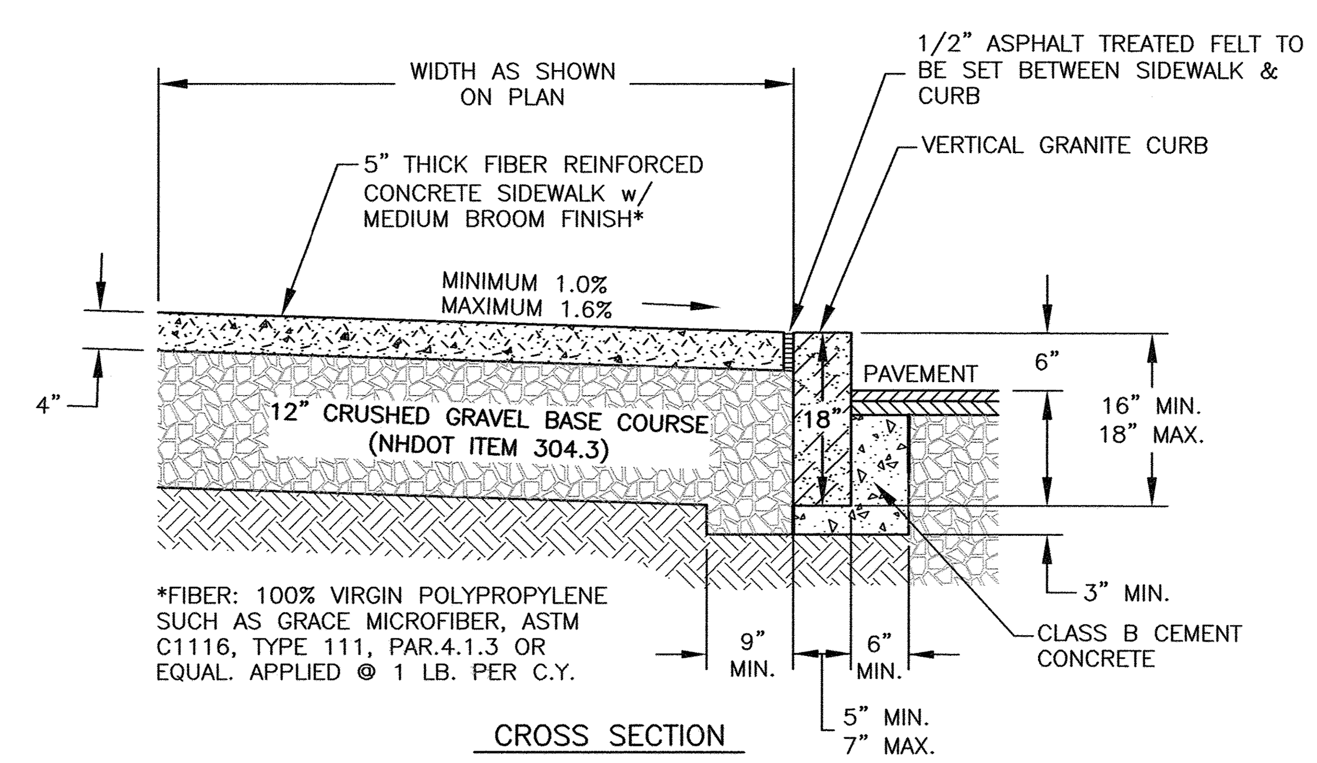
2. PLANTINGS: PLANTING AND LANDSCAPING (TREES, SHRUBS) SHALL BE MONITORED BI-MONTHLY DURING THE FIRST YEAR TO INSURE VIABILITY AND VIGOROUS GROWTH. REPLACE DEAD OR DYING VEGETATION WITH NEW STOCK AND MAKE ADJUSTMENTS TO THE CONDITIONS THAT CAUSED THE DEAD OR DYING VEGETATION. DURING DRYER TIMES OF THE YEAR, PROVIDED WEEKLY WATERING OR IRRIGATION DURING THE ESTABLISHMENT PERIOD OF THE FIRST YEAR. MAKE NECESSARY ADJUSTMENTS TO ENSURE LONG-TERM HEALTH OF VEGETATED COVER, I.E. PROVIDE MORE PERMANENT MULCH OR COMPOST OR OTHER MEANS OF PROTECTION.

3. INVASIVE SPECIES
MONITOR STORMWATER MANAGEMENT SYSTEM FOR SIGNS OF INVASIVE SPECIES GROWTH. IF CAUGHT EARLIER ENOUGH, THEIR ERADICATION IS MUCH EASIER. THE MOST LIKELY PLACES WHERE INVASIONS START ARE IN WETTER, DISTURBED SOILS OR DETENTION PONDS. SPECIES SUCH AS PHRAGMITES AND PURPLE LOOSE-STRIFE ARE COMMON INVADERS IN THESE WETTER AREAS. IF THEY ARE FOUND THEN THE OWNER SHALL CONTACT A WETLAND SCIENTIST WITH EXPERIENCE IN INVASIVE SPECIES CONTROL TO IMPLEMENT A PLAN OF ACTION TO ERADICATE THE INVADERS. MEASURES THAT DO NOT REQUIRE THE APPLICATION OF CHEMICAL HERBICIDES SHOULD BE THE FIRST LINE OF DEFENSE.

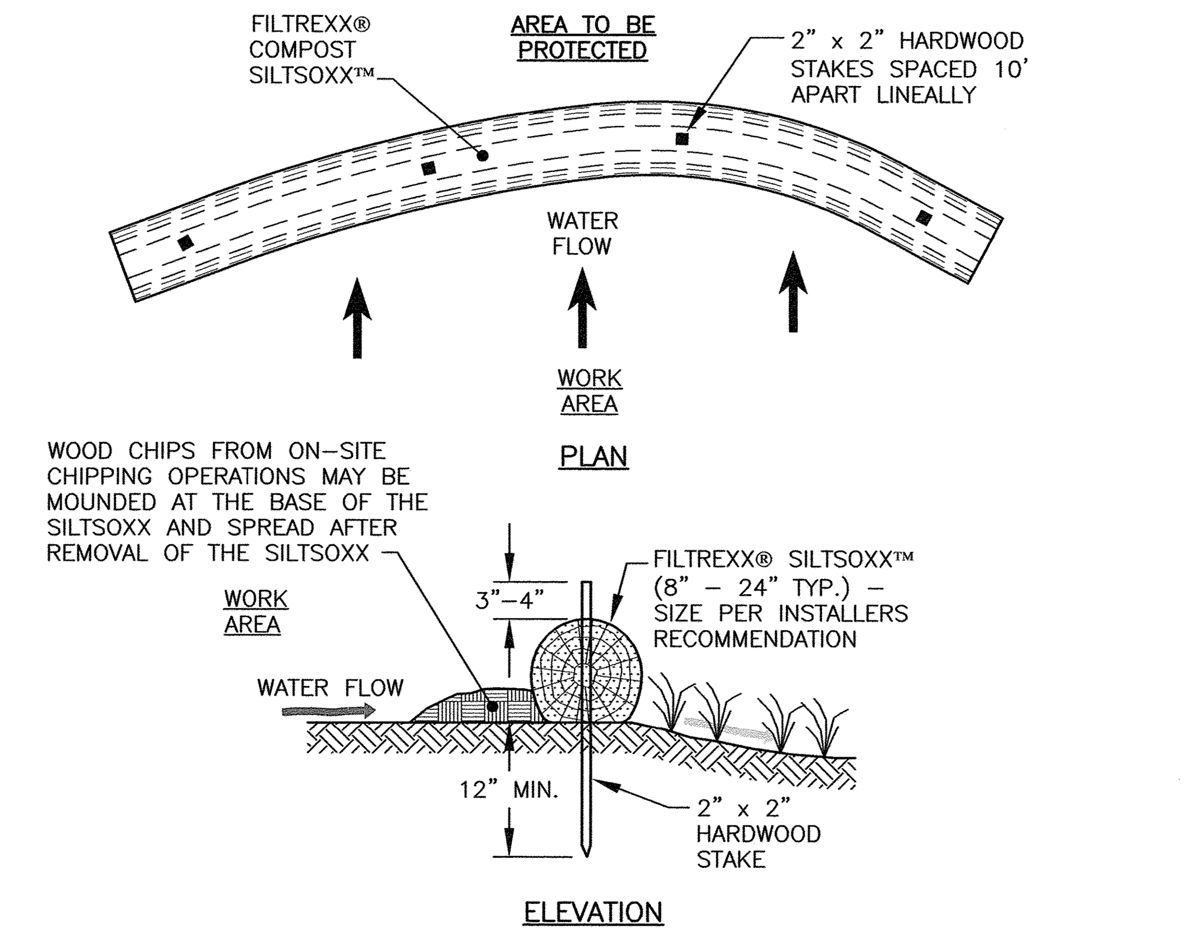
4. JELLYFISH FILTER: REFERENCE SHEET D4 FOR COMPLETE MAINTENANCE DETAILS. FILTER SHOULD BE INSPECTED QUARTERLY FOR THE FIRST YEAR AND YEARLY THEREAFTER AS WELL AS AFTER MAJOR STORM EVENTS, AT MINIMUM. SEDIMENT DEPTHS GREATER THAN 12 INCHES SHOULD BE REMOVED, AS WELL AS FLOATABLES, TRASH AND DEBRIS, AND OIL. THE DECK MUST BE CLEANED AND FREE FROM SEDIMENT DURING INSPECTIONS. FILTER CARTRIDGES SHOULD BE RINSED EVERY 12 MONTHS. FILTER CARTRIDGES SHOULD BE REPLACED AT A MAXIMUM OF 5 YEARS, OR IF THEY FAIL TO RESTORE ADEQUATE HYDRAULIC CAPACITY.

5. DOWNSPOUT FILTERS: REFERENCE SHEET D5 FOR MAINTENANCE SCHEDULE.



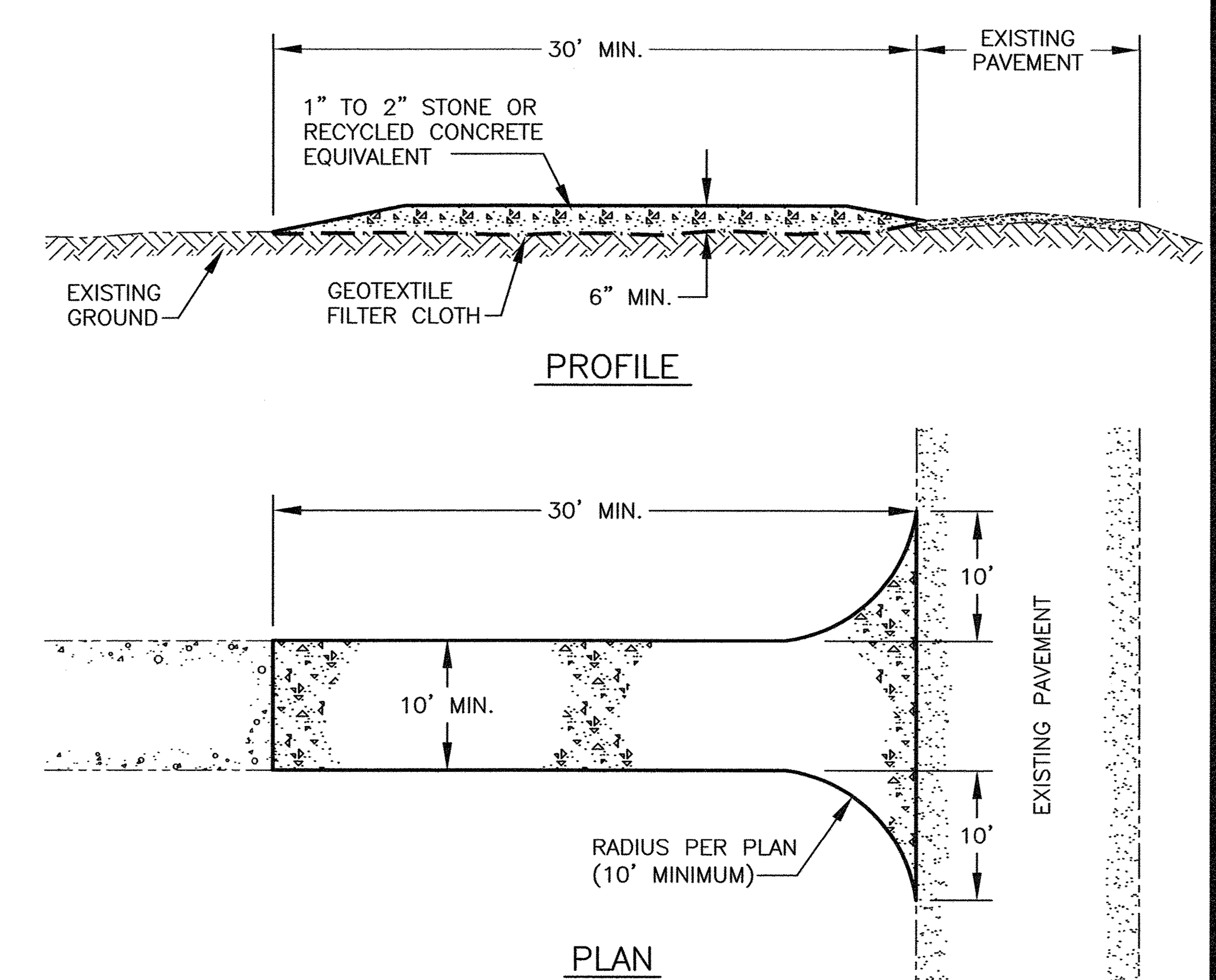


3 / C2 PORTLAND CEMENT CONCRETE SIDEWALK
(WITH VERTICAL GRANITE CURB) NTS



NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILLTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
4. SILTSOXX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

1 / C4 FILTREXX® SILTSOXX™ FILTRATION SYSTEM
(AS NEEDED) NTS



MAINTENANCE

1) MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE GRAVEL AND THE EFFECTIVENESS OF THE GRAVEL PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOP DRESSED WITH NEW STONE. COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.
2) IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT ADEQUATE TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE FILTER STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.

CONSTRUCTION SPECIFICATIONS

1) STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 2 TO 4 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2) THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 30 FEET FOR A SINGLE RESIDENTIAL LOT.
3) THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4) THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICHEVER IS GREATER.
5) GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
6) ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7) THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
8) WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

2 / C4 STABILIZED CONSTRUCTION ENTRANCE
SUBSTITUTE FODS IF DESIRED NTS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

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SITE REDEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, ME

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	6/29/23

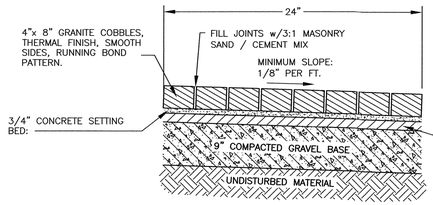
REVISIONS

STATE OF MAINE · JOHN R. CHAGNON · No. 6950 · LICENSED · PROFESSIONAL ENGINEER
6-29-23

SCALE: AS SHOWN DECEMBER 2022

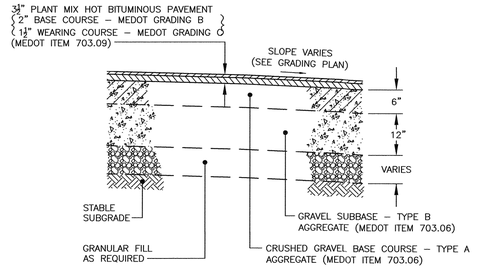
EROSION CONTROL NOTES AND DETAILS D1

FB 423 PG 1 3050.72



A C2 COBBLE BAND

NTS

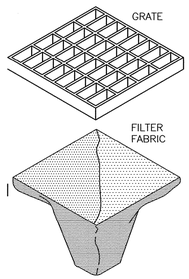


NOTE:
1) AGGREGATE BASE AND SUBBASE COURSES SHALL CONFORM TO SECTIONS 304 AND 703 OF MAINE DOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, APRIL 1995.

2) PLANT MIX HOT BITUMINOUS PAVEMENT SHALL CONFORM TO SECTIONS 401, 403, 702 AND 703 OF MAINE DOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, APRIL 1995.

B C2 TYPICAL PAVEMENT CROSS–SECTION

NTS



1) INLET BASKETS SHALL BE INSTALLED IMMEDIATELY AFTER CATCH BASIN CONSTRUCTION IS COMPLETE AND SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.

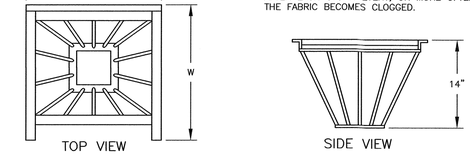
2) FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND, SHALL EXTEND AT LEAST 6" PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.

3) THE FILTER FABRIC SHALL BE A GEOTEXTILE FABRIC; POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE, OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
- –RAB STRENGTH: 45 LB. MIN. IN ANY PRINCIPAL DIRECTION (ASTM D1682)
- –MULLEN BURST STRENGTH: MIN. 60 psi (ASTM D774)

4) THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND A MINIMUM PERMEABILITY OF 120 gpm/s.f. (MULTIPLY THE PERMITTIVITY IN SEC.–1 FROM ASTM 54491–85 CONSTANT HEAD TEST USING THE CONVERSION FACTOR OF 74.)

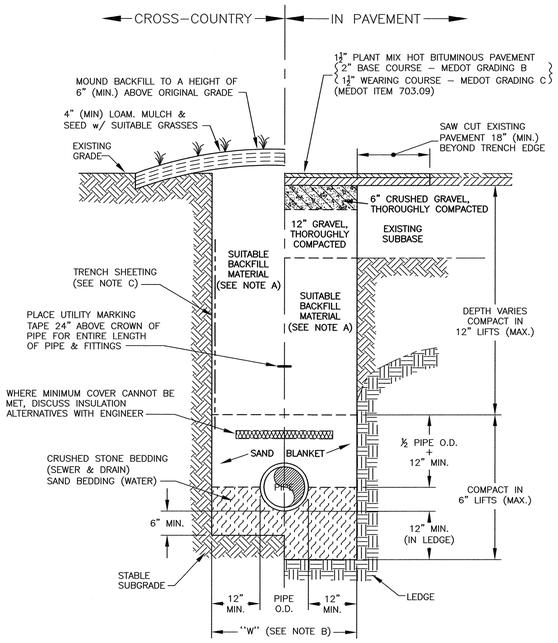
5) THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING.

6) SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.



C C4 CATCH BASIN INLET BASKET

NTS



D C3 TYPICAL PIPE TRENCH

NTS

TRENCH NOTES:
A) TRENCH BACKFILL:
– IN PAVED AREAS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIALS DEEMED TO BE UNACCEPTABLE BY THE ENGINEER.

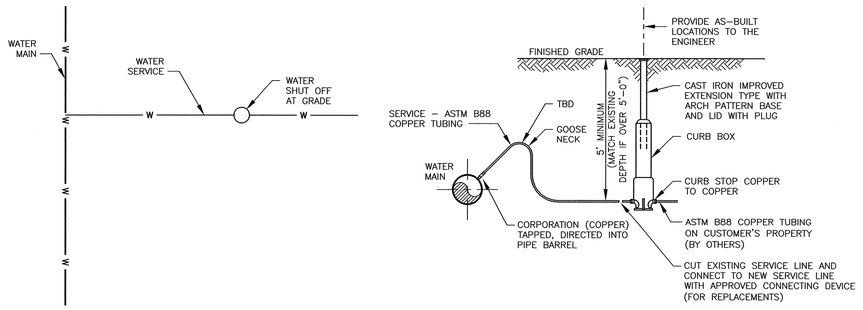
– IN CROSS–COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE.

B) "W" = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D..

C) TRENCH SHEETING:
IF REQUIRED. WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID–DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.

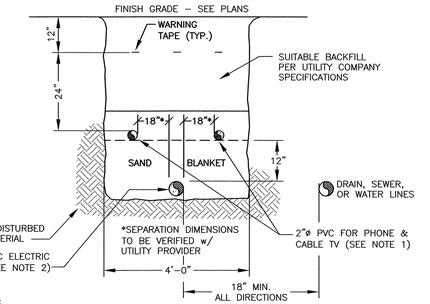
D) MINIMUM PIPE COVER FOR UTILITY MAINS (UNLESS GOVERNED BY OTHER CODES):
- 6' MINIMUM FOR SEWER
- 3' MINIMUM FOR STORMWATER DRAINS
- 5' MINIMUM FOR WATER MAINS

E) ALL PAVEMENT CUTS SHALL BE REPAIRED BY THE INFRARED HEAT METHOD.



E C3 TYPICAL WATER SERVICE CONNECTION

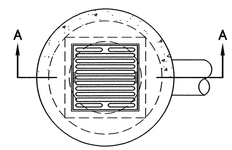
NTS



NOTES:
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCH. 40 FOR THE REMAINDER.
2) NORMAL CONDUIT SIZES FOR CMP ARE 3 INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4 INCH FOR THREE PHASE SECONDARY, AND 5 INCH FOR THREE PHASE PRIMARY.
3) ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST REVISION)
4) INSTALL A 200# PULL ROPE FOR EACH CONDUIT
5) VERIFY ALL CONDUIT SPECIFICATIONS WITH UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION.

F C3 UTILITY TRENCH
ELECTRIC/PHONE/CABLE

NTS



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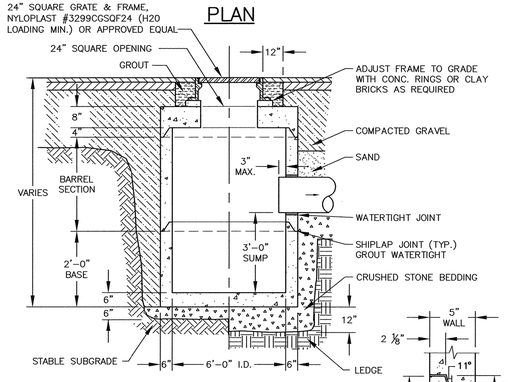

SECTION A – A

DETAIL OF SHIPLAP JOINT

NOTES:
1. CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS & SHALL BE PLACED IN THE CENTER THIRD OF WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.

G C4 REINFORCED CONCRETE CATCH BASIN
(IF NEEDED)

NTS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282
WWW.HALEYWARD.COM

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SITE REDEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, ME

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	6/29/23

REVISIONS

STATE OF MAINE
JOHN R. CHAGNON
No. 9850
LICENSED
PROFESSIONAL ENGINEER

6.29.23

SCALE: AS SHOWN

DECEMBER 2022

DETAILS

D2

FB 423 PG 1

3050.72

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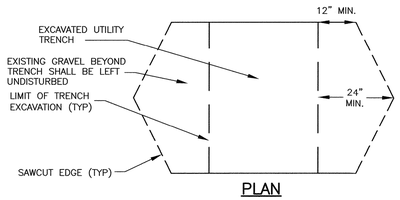

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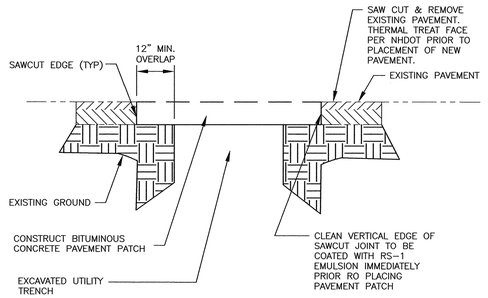


SECTION

NOTES

1. MACHINE CUT EXISTING PAVEMENT.
2. ALL TEMPORARY, DAMAGED OR DEFECTIVEPAVEMENT SHALL BE REMOVED PRIOR TO PLACEMENT OF PERMANENT TRENCH REPAIRS.
3. DIAMOND PATCHES, SHALL BE REQUIRED FOR ALL TRENCHES CROSSING ROADWAY, DIAMOND PATCHES SHALL MEET NH DOT REQUIREMENTS.

H / C3 TRENCH PATCH NTS

SERVICE CONNECTION NOTES:

1) SEE NOTES FOR SERVICE CONNECTION REQUIREMENTS.

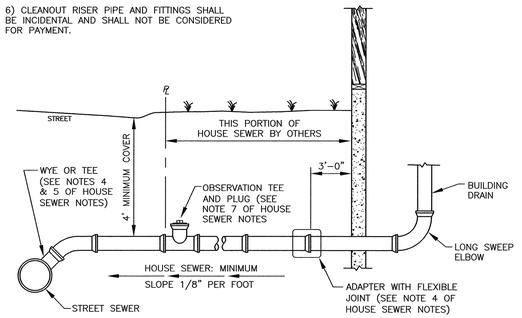
2) SERVICE CONNECTION SHALL BE INSTALLED BELOW WATER MAIN WHERE POSSIBLE.

3) CLEANOUTS SHALL BE INSTALLED AT EACH SERVICE CONNECTION.

4) REBAR SHALL BE PLACED AT SIDE OF CLEANOUT.

5) CLEANOUT SHALL BE USED TO PLUG AND TEST ALL NEW LATERALS WITH MINIMAL INTERRUPTION TO OPERATION OF HOMEOWNER SANITARY SYSTEM.

6) CLEANOUT RISER PIPE AND FITTINGS SHALL BE INCIDENTAL AND SHALL NOT BE CONSIDERED FOR PAYMENT.



I / C3 TYPICAL SEWER SERVICE CONNECTION NTS

HOUSE SEWER NOTES

1) MINIMUM PIPE SIZE FOR HOUSE SERVICE SHALL BE FOUR INCHES.

2) PIPE AND JOINT MATERIALS:

A. PLASTIC SEWER PIPE

1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 To T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITE WALL)	8" THROUGH 15"

*PVC: POLYVINYL CHLORIDE
*ABS: ACRYLONITRILE-BUTADIENE-STYRENE

2. JOINT SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON BELL AND SPIGOT TYPE.

ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680. POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).

JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.

B. DUCTILE IRON PIPE, FITTINGS AND JOINTS.

1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:

A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.

A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND LINED MOLDS FOR WATER OR OTHER LIQUIDS.

2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:

A21.11 RUBBER GASKET JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS.

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) HOUSE SEWER INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND REFILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES. THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/8th INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

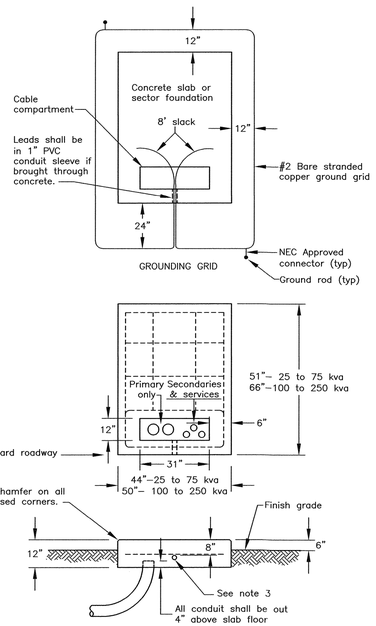
6) TESTING: THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)

A. AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.

B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER, TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.

C. DRY FLUORESCENE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUNDWATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWN STREAM MANHOLE.

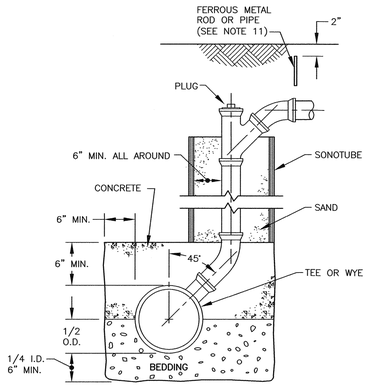
LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.



NOTES

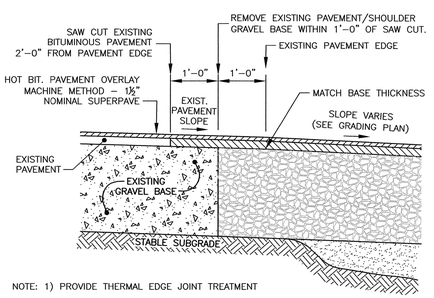
1. See sheet "Requirements for Padmounted Transformer Slab Details".
2. All reinforcing to be #6 bars.
3. 1" PVC conduit sleeve for ground grid leads.
4. The ground grid shall be supplied and installed by the customer and is to be buried at least 12" below grade. Eight feet of extra wire for each ground grid leg shall be left exposed in the cable compartment to allow for the connection to the transfomer. the two 8' ground rods may be either galvanized steel or copperweld and they shall be connected to the grid with NEC approved connectors.

J / C3 TRANSFORMER PAD CMP - IF NEEDED NTS



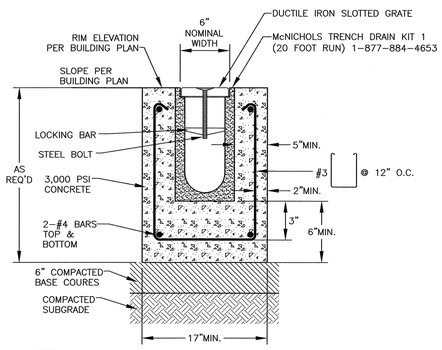
NO BACKFILLING BEFORE CONCRETE HAS TAKEN INITIAL SET (7 HRS. MIN.). BACKFILLING TO BE BROUGHT UP EVENLY ON ALL SIDES.

K / C3 SEWER CHIMNEY IF NEEDED NTS



NOTE: 1) PROVIDE THERMAL EDGE JOINT TREATMENT

L / C3 PAVEMENT JOINT DETAIL NTS



M / C6 EVAPORATION TRENCH DETAIL NTS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282
WWW.HALEYWARD.COM

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

SITE REDEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, ME

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	6/29/23

REVISIONS

STATE OF MAINE
JOHN R. CHAGNON
No. 8950
LICENSED
PROFESSIONAL ENGINEER
6.29.23

SCALE: AS SHOWN DECEMBER 2022

DETAILS

D3

FB 423 PG 1

3050.72

P:\NHS\3050.72A-Kittery_Badgers Island W\3050.72A-Badgers Island W-REDEVELOPMENT\2022 Site Permitting\Plans & Specs\Dwg\3050.72A Details 2022.dwg 6/29/2023 1:46:14 PM

WINTER HOLBEN
architecture + design

MEMORANDUM

Date:	July 6, 2023
To:	Planning Board
Subject:	Project Narrative – 35 Badgers Island West
CC to:	

The application for the property at 35 Badgers shows the owner's (B.I.W. Group, LLC) intention to redevelop the existing structure through renovations and additions to change a former office building into a multi-unit residential structure.

The existing structure will be renovated to remove the footprint out of the shoreline setback. Additionally, the upper level will be expanded to match the lower levels' footprint and a 4:12 pitch roof will replace the majority of the existing roof structure. Two secondary structure additions will be constructed on the north and south side of the existing to provide parking (below the grade level) and additional living units above. Both additions will be below 40' in height and are designed to complement the main building's geometry.

In general, the design ties into with the shipbuilding history of the site with the primary 3-story structure and then gets more expressive with the secondary 2-story wing additions. The additions pull from the natural form of the blue heron poised for flight that creates a subtle balance to the overall building form. Currently, innovative siding options that layer material in an oversized shingle are being explored to create the appearance of a feathered wing.

Basic Zoning Information

Site Address:		35 Badgers Island West, Kittery, Maine
Zone:		MU-BI (mixed use – Badgers Island)
Overlay Districts:		OZ-SL – Shoreland Overlay OZ-RP – Resource Protection Overlay OZ-CFMU – commercial fisheries/Maritime Activities Overlay (not applicable for this project)
Permitted Uses:		Dwelling, Multi-Family Note: this use is allowable in the OZ-SL so long as the structure is outside of the 75' setback from the water.
Dimensional Requirements:	Min. land area:	3,000 sf per dwelling unit for the first 2 units, then 6,000 sf per dwelling unit (see note 1).
	Min. lot:	6,000 sf.
	Min. frontage:	50'
	Front yard:	5'
	Side yard:	10'
	Max ht.:	40'
	Setback from water:	75'
	Min. open space:	40%

Required Parking:	1.5 space per dwelling unit minimum – per 16.4.24(4), special parking standards.

Kittery Design Handbook Information (architecture)

Façade Design (ref. LUDC 16.12 – see note 2) - Essentially, the front of the building should look like the front. Main entry door(s) should be clearly defined. Distinguishing features/architectural elements are recommended at points of entry.

Blank walls in an MU district – no façade may extend for more than 50' horizontally without incorporating an architectural feature such as pilaster, windows, cornices, porches, offsets, etc.

Building Materials (ref. LUDC 16.12 – see note 2) – Encouraged/acceptable materials include brick, clapboards, shakes, stone, and vertical boards. Modern materials that mimic/reflect the traditional materials are also acceptable. Metal, EIFS, and exposed concrete are materials that are discouraged with stucco, adobe, sheet metal, concrete block, concrete, plywood, and particle board prohibited in MU districts.

Roof in an MU district – The roof pitch for the prominent structure must have a minimum pitch of 4:12 with the acceptable forms to include: gamble, gambrel, and hip. Flat, shed, and applied mansards are not an acceptable roof form. The roof material should be either asphalt or a low reflectance metal material. Any equipment mounted on the roof should be screened from the public view.

(note 1) – Current site is listed at 58,985 sf +/-, per the minimum land requirement, this area is capable of supporting 10 dwelling units.

(note 2) – The referenced Land Use Development Code section 16.12 cannot be located in the current Kittery Land Use Code (stops at 16.10).

RESIDENTIAL CONVERSION

35 BADGERS ISLAND WEST

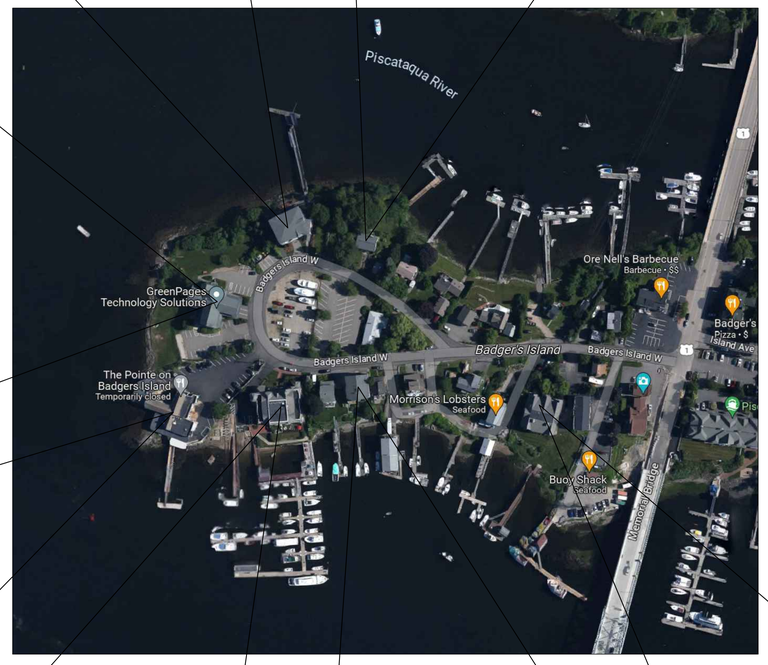
KITTERY, MAINE 03904

SITE CONTEXT:

32 BADGERS ISLAND WEST

28 BADGERS ISLAND WEST

35 BADGERS ISLAND WEST - PROJECT SITE



31 BADGERS ISLAND WEST

27 BADGERS ISLAND WEST

23 BADGERS ISLAND WEST

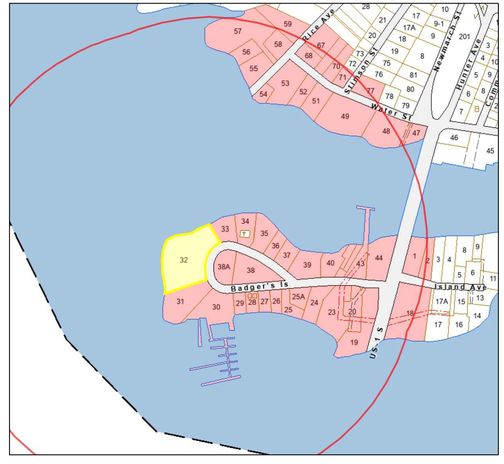
9 BADGERS ISLAND WEST

PROJECT DESCRIPTION:

RENOVATION AND ADDITIONS TO A FORMER OFFICE BUILDING TO CONVERT THE SITE INTO NEW CONDOMINIUM UNITS. WORK WILL INCLUDE:

- CREATION OF TWO SEPARATE ENCLOSED PARKING AREAS FOR THE BUILDING RESIDENTS.
- RENOVATION OF THE EXISTING BUILDING, INCLUDING ROOF MODIFICATIONS, TO CONSTRUCT SIX CONDOMINIUM UNITS WITHIN THIS AREA.
- CONSTRUCTION OF BUILDING ADDITIONS TO THE NORTH AND SOUTH OF THE EXISTING STRUCTURE FOR FOUR CONDOMINIUM UNITS (TWO IN EACH ADDITION).
- DEVELOPMENT OF AN ENTRY BETWEEN THE SOUTH ADDITION AND EXISTING BUILDING FOR A NEW ELEVATOR AND STAIR TO SERVE THAT ADDITION.

DRAWING INDEX:



SITE ABUTTERS WITHIN 1000' OF SITE

7 WALLINGFORD SQUARE
UNIT 2099
KITTERY, ME 03904
207.994.3104
WINTER HOLBEN

MAP OF BADGERS ISLAND

MAP SHOWS THE FERNALD AND PETTIGREW SHIPYARD (1850) - CURRENT SITE OCCUPIES A PORTION OF THIS AREA.

PORTSMOUTH NAVAL SHIPYARD

(BADGERS ISLAND BUILT SHIPS FOR THE NAVY BETWEEN 1776-1799)

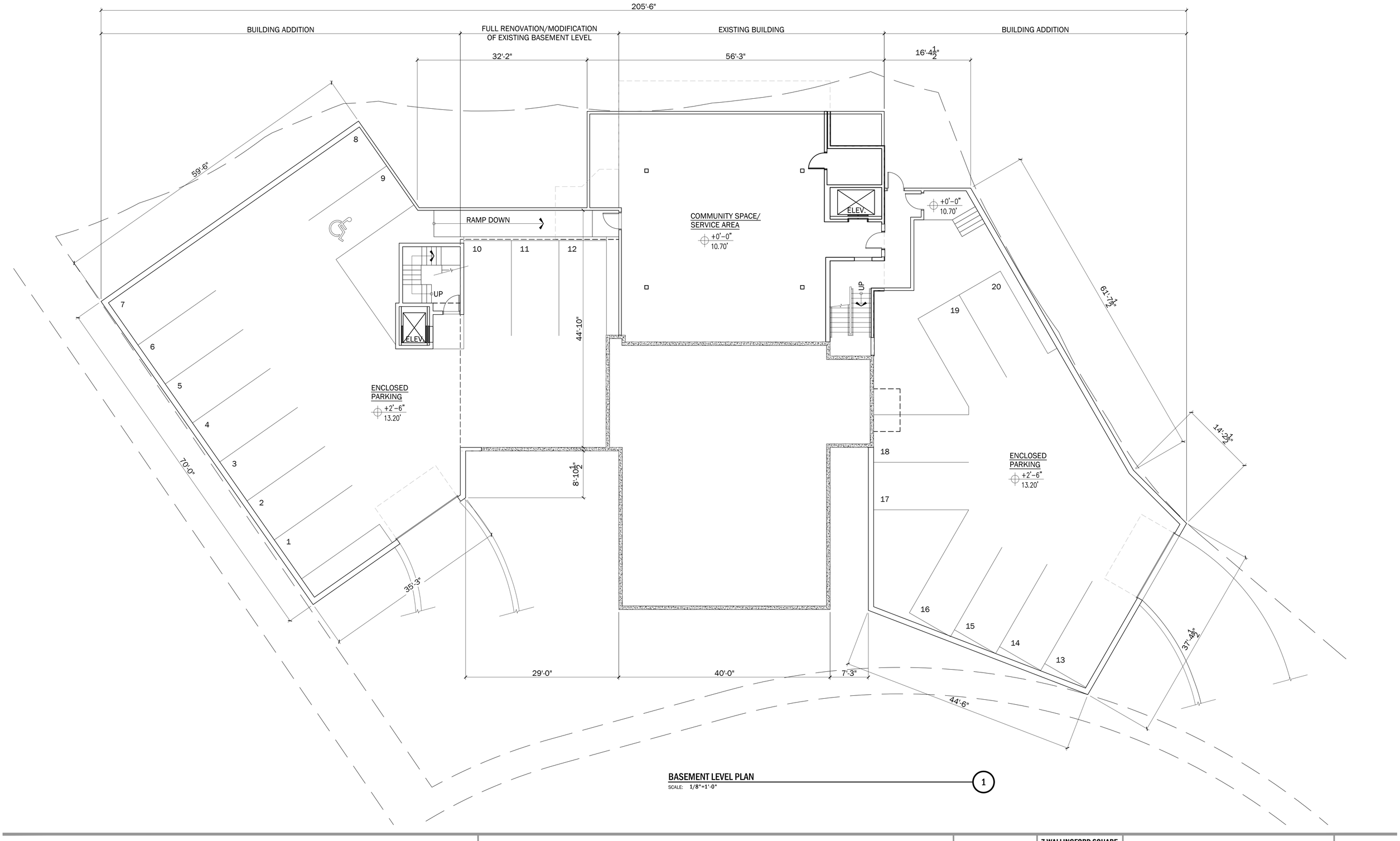
NAVAL YARD - EARLY 1900s.

NAVAL YARD - 1814

USS RANGER

USS RANGER IN 1778 - BUILT BY JAMES HACKETT ON BADGERS ISLAND IN 1777

DRAWING OF THE USS RANGER



BASEMENT LEVEL PLAN
SCALE: 1/8"=1'-0"

1

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UNIT 2099
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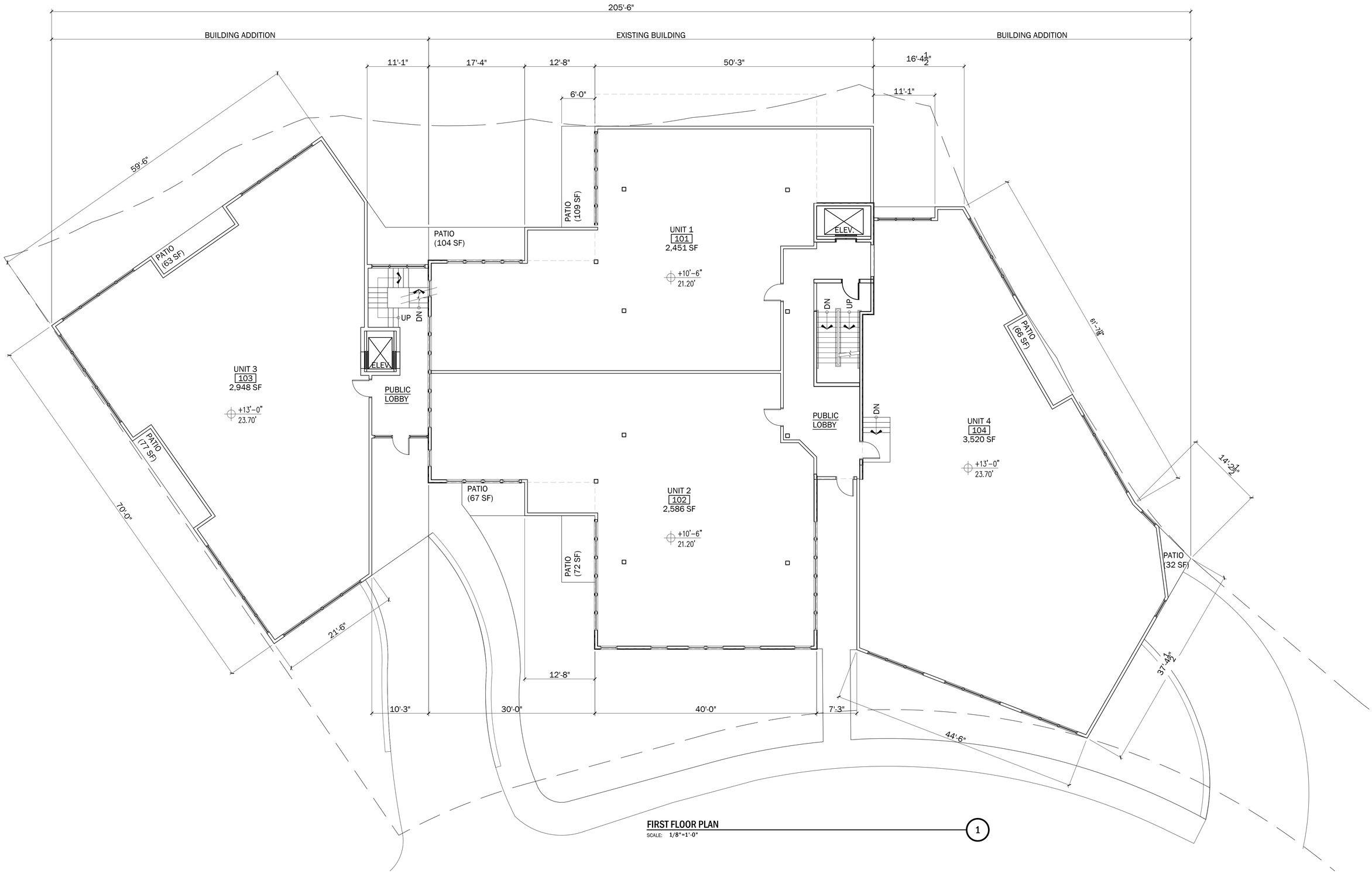
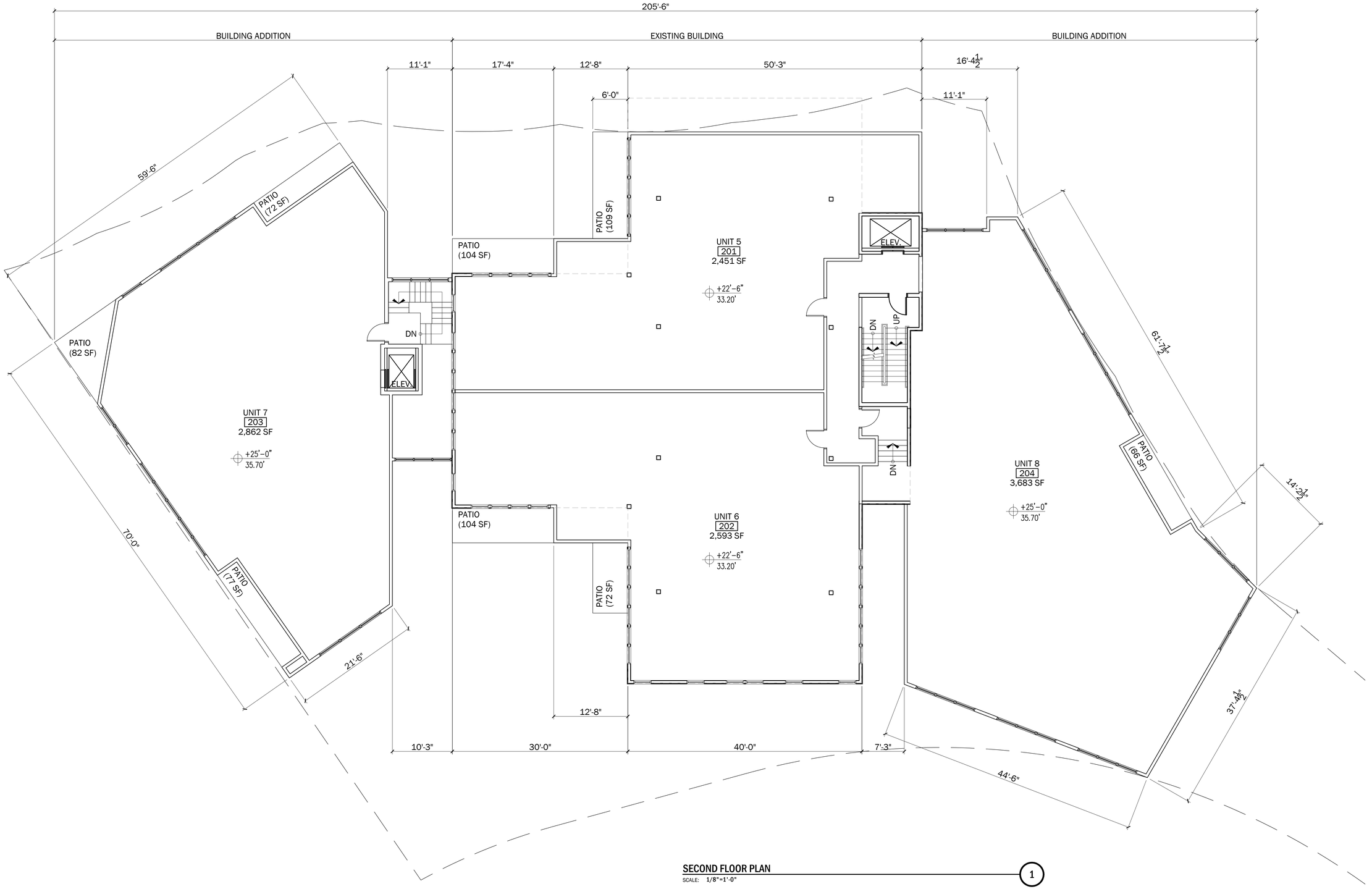
207.994.3104
WINTER HOLBEN



FIRST FLOOR PLAN
SCALE: 1/8"=1'-0"

1

7 WALLINGFORD SQUARE
UNIT 2099
KITTERY, ME 03904
207.994.3104
WINTER HOLBEN



SECOND FLOOR PLAN

SCALE: 1/8"=1'-0"

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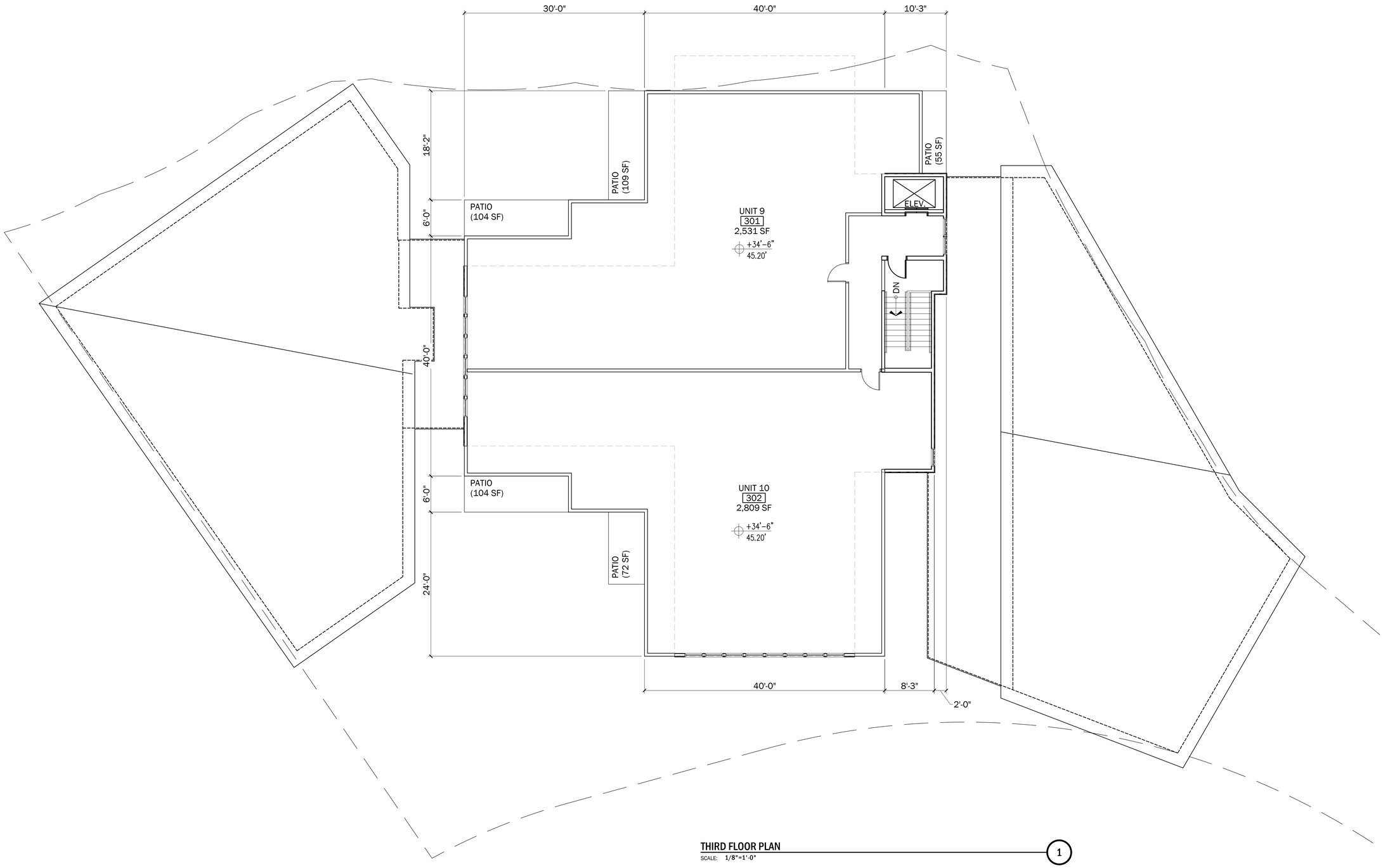
KITTERY, ME 03904
207.994.3104

WINTER HOLBEN



THIRD FLOOR PLAN
SCALE: 1/8"=1'-0"

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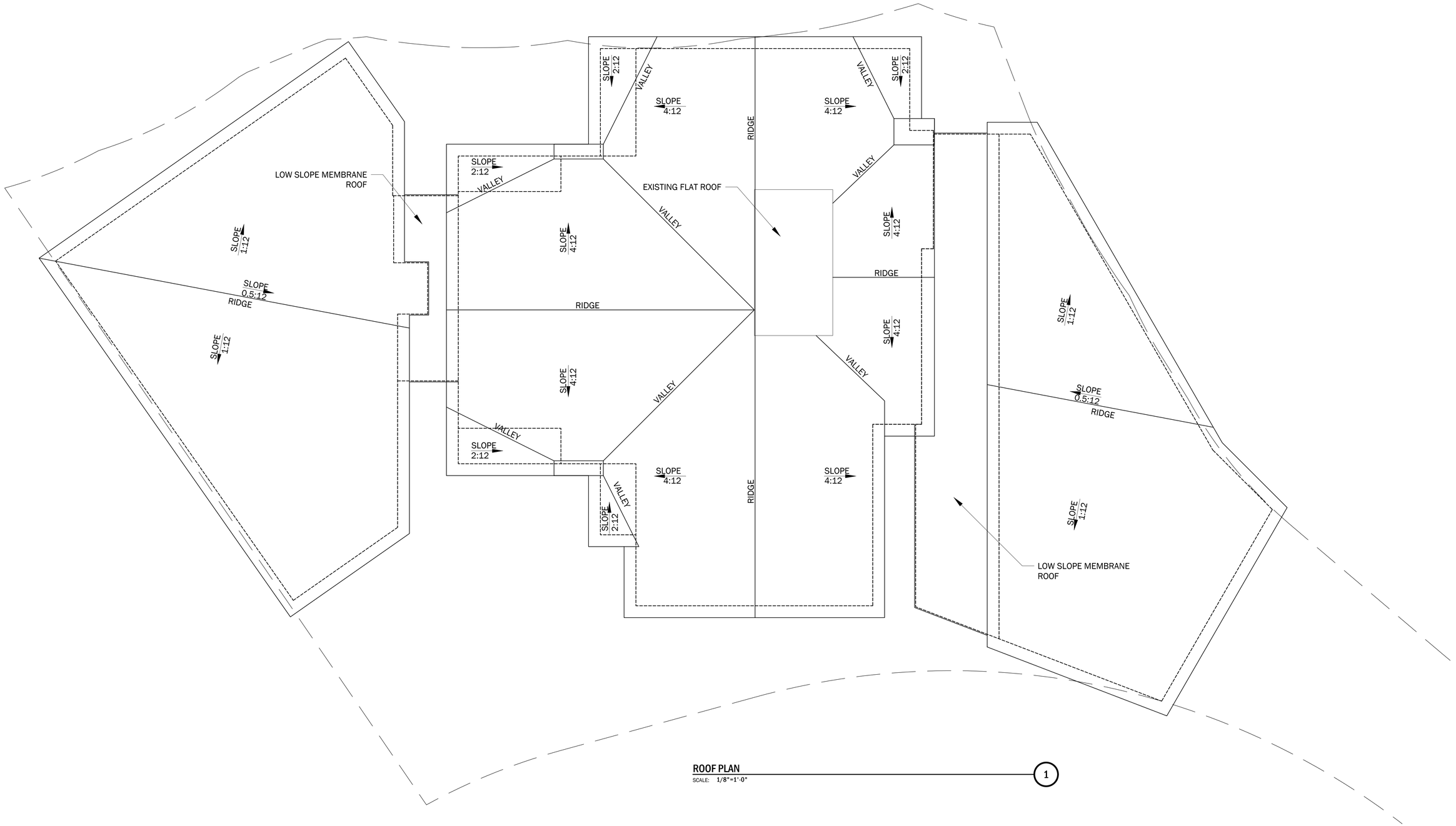

ROOF PLAN
SCALE: 1/8"=1'-0"

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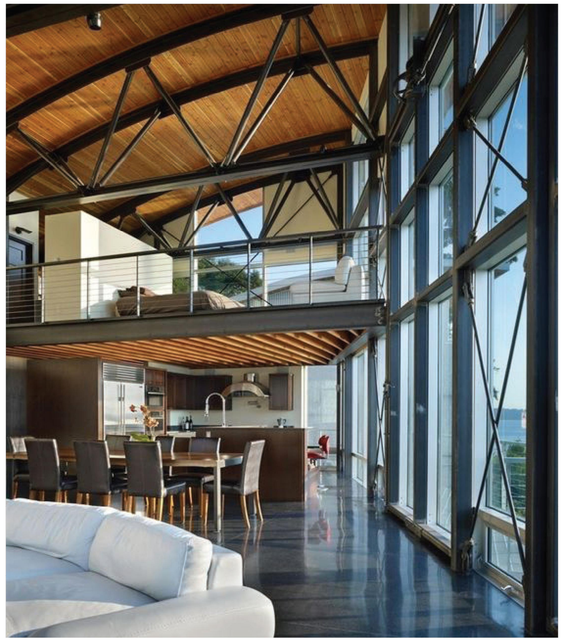
7 WALLINGFORD SQUARE
UNIT 2099
KITTERY, ME 03904
207.994.3104
WINTER HOLBEN

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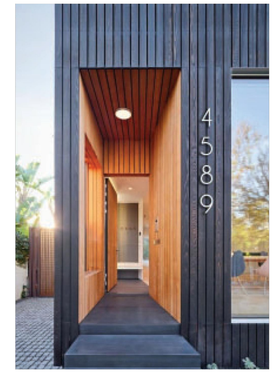
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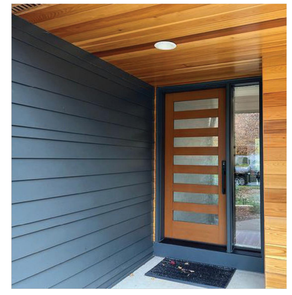

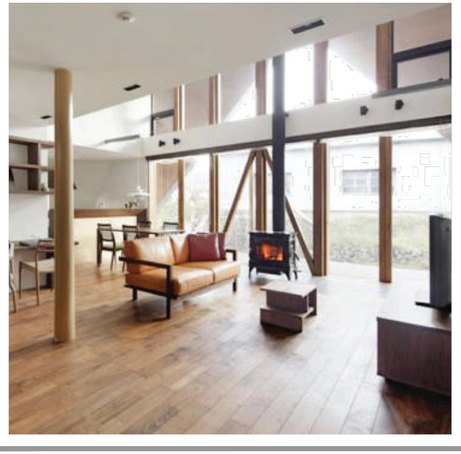


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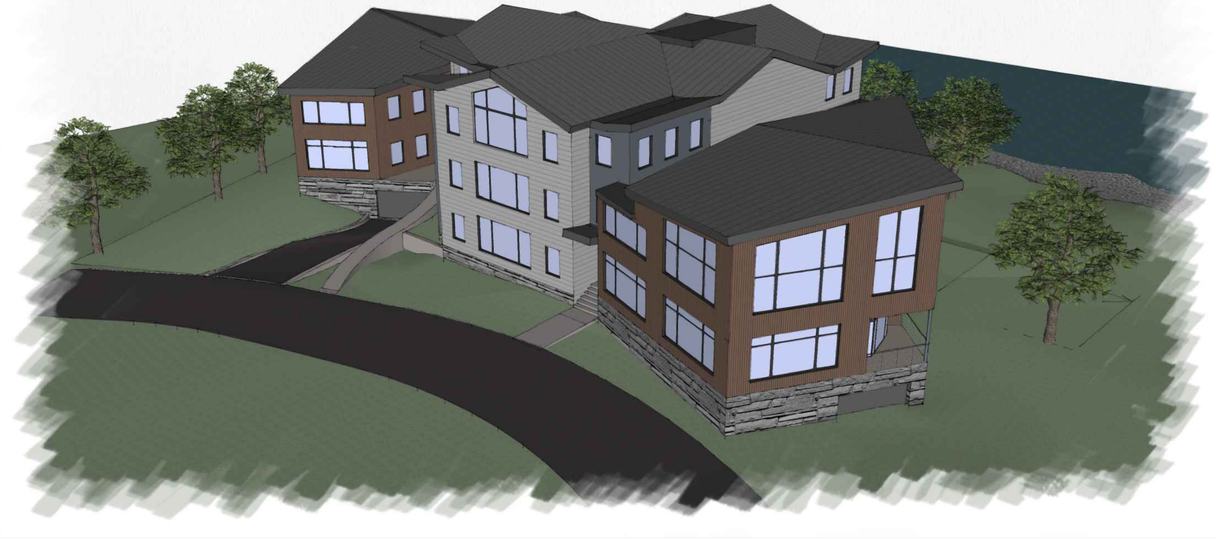
EAST EXTERIOR ELEVATION 1
SCALE: N.T.S.



AERIAL LOOKING SOUTHWEST 2
SCALE: N.T.S.

BADGERS ISLAND WEST - NORTH APPROACH 3
SCALE: N.T.S.

BADGERS ISLAND WEST - SOUTH APPROACH 4
SCALE: N.T.S.

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UNIT 2099
KITTERY, ME 03904
207.994.3104
WINTER HOLBEN

WEST EXTERIOR ELEVATION 1
SCALE: N.T.S.

AERIAL LOOKING NORTHEAST 2
SCALE: N.T.S.

RIVER VIEW LOOKING SOUTH EAST 3
SCALE: N.T.S.

RIVER VIEW LOOKING NORTH EAST 4
SCALE: N.T.S.

7 WALLINGFORD SQUARE
UNIT 2099
KITTERY, ME 03904
207.994.3104
WINTER HOLBEN

DRAINAGE ANALYSIS

SITE DEVELOPMENT

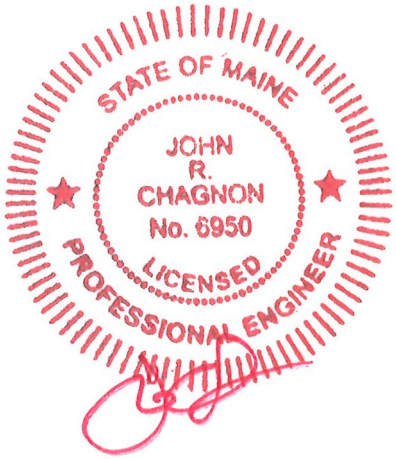
35 BADGERS ISLAND WEST
KITTERY, ME

PREPARED FOR
HAMPSHIRE DEVELOPMENT

19 JANUARY 2023
AMENDED: 29 JUNE 2023

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3
Portsmouth, NH 03801
Phone: 603.430.9282; Fax: 603.436.2315
E-mail: jchagnon@haleyward.com
(Ambit Job Number 5010135.3050.72A)



6-29-2023

TABLE OF CONTENTS

REPORT

APPENDIX

EXECUTIVE SUMMARY

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the Site Redevelopment at the property known as 35 Badgers Island West in Kittery, ME. The site is shown on the Town of Kittery Assessor's Tax Map 1 as Lot 32. The total size of the study area of on-site and adjacent flows is 104,634± square-feet (2.402 acres) and the drainage area including off-site flows (piped) is 147,126± square-feet (3.378 acres).

For the modelling process, this report utilized extreme precipitation values from the Northeast Regional Climate Center of Cornell University for the 2, 10, and 25-Year storm events.

The development will provide for building additions and associated utilities. The development has the potential to increase stormwater runoff to adjacent properties and should be designed in a manner to prevent that occurrence. The site contains an existing building and parking lot. The parking will be removed and replaced with the proposed structures, leading to a net decrease in contributing impervious area. The net decrease, as well as adhering to construction BMPs will offset the stormwater impact caused by the construction of the redevelopment.

INTRODUCTION / PROJECT DESCRIPTION

This drainage report is designed to assist the owner, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the Town of Kittery, ME Assessor's Tax Map 1 as Lot 32. Bounding the site to the east is the cul-de-sac of Badger's Island West. Bounding the site to the west is the Piscataqua River. Bounding the site to the north is a condominium. Bounding the site to the south is a private business. A vicinity map is included in the Appendix to this report.

The proposed project includes two building additions, associated parking and utilities. This report uses the design to calculate the future impervious coverage of the proposed lot, as required by the Town.

This report includes information about the existing site and the proposed site necessary to analyze stormwater runoff and to design any required mitigation. The report includes impervious surface analyses and the associated operations and maintenance manual. The report will provide a narrative of the stormwater runoff. Proposed stormwater management and treatment structures and methods will also be described, as well as erosion and sediment control practices. To fully understand the proposed site development the reader should also review a complete site plan set in addition to this report.

SITE SPECIFIC INFORMATION

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 2301710008D (effective date July 3, 1986), the proposed development is located in Zone C and is determined to be inside of the 0.2% annual chance floodplain. A copy of the FIRM map is included in the Appendix.

PRE AND POST-DEVELOPMENT DRAINAGE

In the pre-development condition, the site has been analyzed as three subcatchment basins (E1, E2, and E2a) based on localized topography and discharge location. Subcatchment E1 contains the north half of the property and flows toward the west boundary of Badgers Island (Discharge Point 1 or DP1). Subcatchment E2 contains the south half of the property and flows toward DP1. Subcatchment E2a contains area east of the property and flows in closed pipes toward DP1 through a drainage network located in Subcatchment E2. Proposed subcatchments P1, P2, and P2a occupy the same approximate space as subcatchments E1, E2, and E2a respectively and flow to the same discharge point. Subcatchment P2a is slightly larger than E2a (due to the proposed sidewalk) and is run through a modified drainage network. The subcatchments were analyzed for peak discharges using HydroCAD.

Table 1: Impervious Surfaces Analysis

Structure	Pre-Construction Impervious (S.F.)	Post-Construction Impervious (S.F.)
Main Structure	5,922	13,231
Decks/Stairs	0	264
Pavement/Cobbles	12,289	2,133
Gravel	2,277	0
Retaining Walls	86	114
Concrete Pads/Steps/Sidewalk	957	456
Patios/Walkways	0	218
Revetment/Riprap	5,392	5,392
Total	26,923	21,808
Lot Size	54,883	54,883
% Devegetated Area	49.1%	39.7%

Table 2: Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	2-Year Runoff (CFS)	10-Year Runoff (CFS)	25-Year Runoff (CFS)
E1	71,648	6.9	92	6.23	10.13	13.15
E2	36,164	5.0	93	3.43	5.51	7.11
E2a	39,314	6.7	96	3.75	5.83	7.44
P1	65,504	7.2	91	5.48	9.03	11.79
P2	30,375	5.0	90	2.63	4.40	5.77
P2a	51,243	6.7	96	4.89	7.59	9.70

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. The Drainage patterns are shown on the attached Subcatchment Plans.

Table 3: Pre-Development to Post-Development Comparison

	Q2 (CFS)		Q10 (CFS)		Q25 (CFS)		
Design Point	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Description**
DP1	13.22	12.81	21.18	20.73	27.35	26.88	Piscataqua River

In the developed condition, the site will see a net reduction in impervious surfaces. As a result, discharge point DP1 will experience a net decrease in peak discharge for all design storms in the proposed condition.

OFFSITE INFRASTRUCTURE CAPACITY

There is an overall reduction in off-site flow due to the reduction in impervious surfaces proposed by the project. Any Town infrastructure utilized by the project, in particular drainage networks, will not see a change in peak flows from the existing conditions, as the receiving infrastructure is upstream of the proposed development. As a result, there is no anticipated negative impact to Town infrastructure.

EROSION AND SEDIMENT CONTROL PRACTICES

The erosion potential for this site as it exists is moderate due to the construction proposed in areas that are erodible when exposed. During construction, the major potential for erosion is wind and stormwater runoff. The contractor will be required to inspect and maintain all necessary erosion control measures, as well as installing any additional measures as required. All erosion control practices shall conform to "The Maine Stormwater Management Design Manual." Some examples of erosion and sediment control measures to be utilized for this project during construction may include:

- Silt Soxx (or approved alternative) located at the toe of disturbed slopes
- Stabilized construction entrance at access point to the site
- Temporary mulching and seeding for disturbed areas
- Spraying water over disturbed areas to minimize wind erosion

After construction, permanent stabilization will be accomplished by permanent seeding, landscaping, and compacting/surfacing the access drives with pavement.

CONCLUSION

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. With the reduction in impervious surfaces the post-development quality of the site runoff will be sufficiently increased to mitigate any issues caused by the proposed construction. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project.

REFERENCES

1. Town of Kittery, ME. Land Use Development Code, Amended January 24, 2022.
2. Maine Department of Environmental Protection, *Maine Stormwater Management Design Manual (Volumes I-III)*, March 2016.
3. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.0* copyright 2013.

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

Existing Subcatchments Plan

B.I.W. GROUP, LLC
35 BADGERS ISLAND WEST
KITTERY, MAINE

JOB NUMBER: 5010135.3050.72A
SCALE: 1" = 100'
SUBMITTED: 06-29-2023

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

Proposed Subcatchments Plan

B.I.W. GROUP, LLC
35 BADGERS ISLAND WEST
KITTERY, MAINE

JOB NUMBER: 5010135.3050.72A
SCALE: 1" = 100'
SUBMITTED: 06-29-2023

APPENDIX A

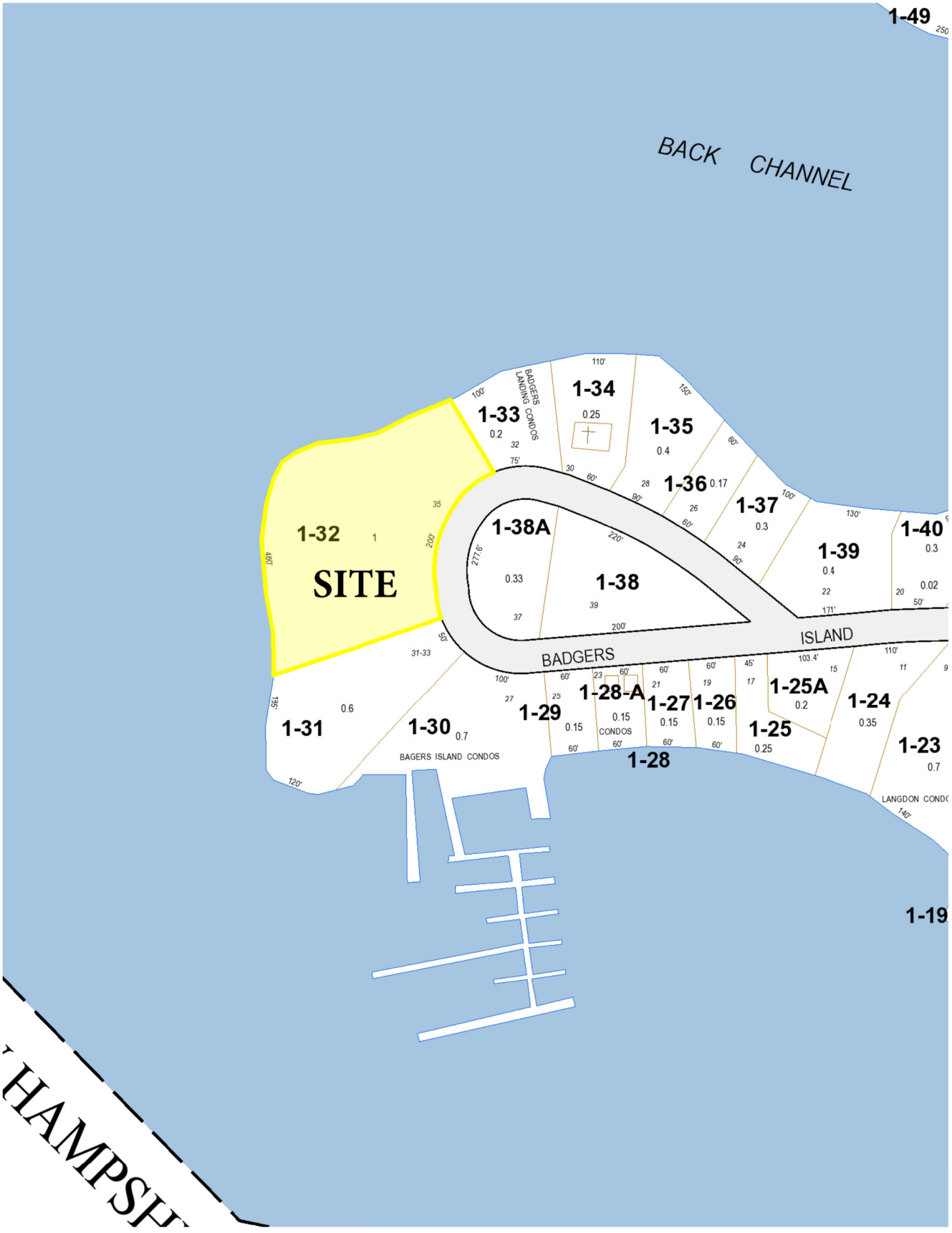
VICINITY (TAX) MAP

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

Tax Map

B.I.W. GROUP, LLC
35 BADGERS ISLAND WEST
KITTERY, MAINE

JOB NUMBER: 3050.72A
NTS
SUBMITTED: 08-18-2022



APPENDIX B

FEMA FIRM MAP

APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
KITTERY, MAINE
YORK COUNTY

PANEL 8 OF 10

(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230171 0008 D

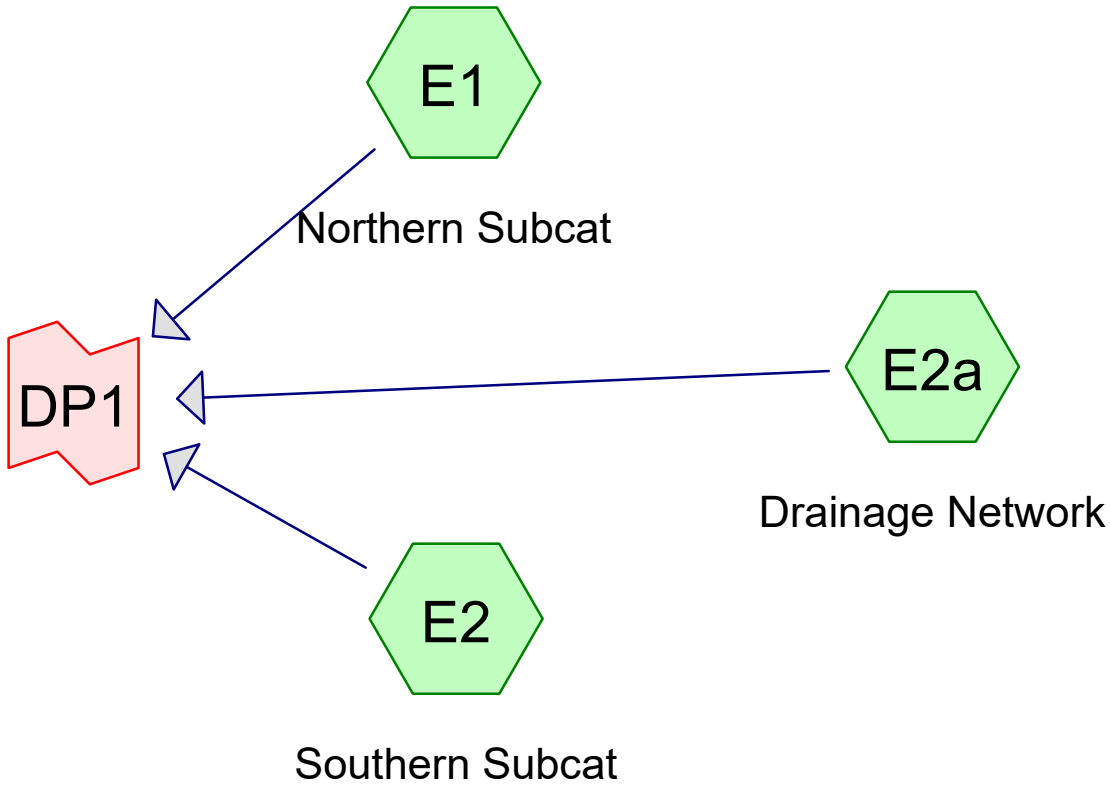
MAP REVISED:
JULY 3, 1986

Federal Emergency Management Agency

APPENDIX C

HYDROCAD DRAINAGE

ANALYSIS CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for Existing Conditions 2023-01-18 David T
Prepared by Ambit Engineering, Printed 2023-01-19

Project Notes

Defined 5 rainfall events from output (39) IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.20	2
2	10-yr	Type II 24-hr		Default	24.00	1	4.86	2
3	25-yr	Type II 24-hr		Default	24.00	1	6.16	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.676	80	>75% Grass cover, Good, HSG D (E1, E2, E2a)
0.156	96	Gravel surface, HSG D (E1, E2)
1.160	98	Paved parking, HSG D (E1, E2, E2a)
0.166	98	Roofs, HSG D (E1, E2, E2a)
0.097	98	Water Surface, 0% imp, HSG D (E1)
0.924	98	Water Surface, HSG D (E1, E2)
0.199	77	Woods, Good, HSG D (E1)
3.378	**93**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
3.378	HSG D	E1, E2, E2a
0.000	Other	
3.378		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.676	0.000	0.676	>75% Grass cover, Good	E1, E2, E2a
0.000	0.000	0.000	0.156	0.000	0.156	Gravel surface	E1, E2
0.000	0.000	0.000	1.160	0.000	1.160	Paved parking	E1, E2, E2a
0.000	0.000	0.000	0.166	0.000	0.166	Roofs	E1, E2, E2a
0.000	0.000	0.000	0.924	0.000	0.924	Water Surface	E1, E2
0.000	0.000	0.000	0.097	0.000	0.097	Water Surface, 0% imp	E1
0.000	0.000	0.000	0.199	0.000	0.199	Woods, Good	E1
0.000	**0.000**	**0.000**	**3.378**	**0.000**	**3.378**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: Northern Subcat Runoff Area=71,648 sf 55.59% Impervious Runoff Depth>2.20"
Flow Length=585' Slope=0.0374 '/' Tc=6.9 min CN=92 Runoff=6.23 cfs 0.302 af

Subcatchment E2: Southern Subcat Runoff Area=36,164 sf 64.89% Impervious Runoff Depth>2.29"
Tc=5.0 min CN=93 Runoff=3.43 cfs 0.159 af

Subcatchment E2a: Drainage Network Runoff Area=39,314 sf 88.35% Impervious Runoff Depth>2.57"
Flow Length=411' Slope=0.0155 '/' Tc=6.7 min CN=96 Runoff=3.75 cfs 0.193 af

Link DP1: below 1,000.00 cfs Inflow=13.22 cfs 0.654 af
Primary=13.22 cfs 0.654 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 3.378 ac Runoff Volume = 0.654 af Average Runoff Depth = 2.32"
33.37% Pervious = 1.127 ac 66.63% Impervious = 2.250 ac

Summary for Subcatchment E1: Northern Subcat

Runoff = 6.23 cfs @ 11.98 hrs, Volume= 0.302 af, Depth> 2.20"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.20"

Area (sf)	CN	Description
15,046	80	>75% Grass cover, Good, HSG D
3,894	96	Gravel surface, HSG D
1,192	98	Paved parking, HSG D
8,075	98	Paved parking, HSG D
2,924	98	Roofs, HSG D
8,671	77	Woods, Good, HSG D
27,640	98	Water Surface, HSG D
4,206	98	Water Surface, 0% imp, HSG D
71,648	92	Weighted Average
31,817		44.41% Pervious Area
39,831		55.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	585	0.0374	1.41		**Lag/CN Method,**

Summary for Subcatchment E2: Southern Subcat

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.43 cfs @ 11.95 hrs, Volume= 0.159 af, Depth> 2.29"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.20"

Area (sf)	CN	Description
9,817	80	>75% Grass cover, Good, HSG D
2,880	96	Gravel surface, HSG D
7,292	98	Paved parking, HSG D
3,568	98	Roofs, HSG D
12,607	98	Water Surface, HSG D
36,164	93	Weighted Average
12,697		35.11% Pervious Area
23,467		64.89% Impervious Area

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

Summary for Subcatchment E2a: Drainage Network

Runoff = 3.75 cfs @ 11.97 hrs, Volume= 0.193 af, Depth> 2.57"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.20"

Area (sf)	CN	Description
4,581	80	>75% Grass cover, Good, HSG D
33,992	98	Paved parking, HSG D
741	98	Roofs, HSG D
39,314	96	Weighted Average
4,581		11.65% Pervious Area
34,733		88.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	411	0.0155	1.03		**Lag/CN Method,**

Summary for Link DP1:

Inflow Area = 3.378 ac, 66.63% Impervious, Inflow Depth > 2.32" for 2-yr event
Inflow = 13.22 cfs @ 11.97 hrs, Volume= 0.654 af
Primary = 13.22 cfs @ 11.97 hrs, Volume= 0.654 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: Northern Subcat Runoff Area=71,648 sf 55.59% Impervious Runoff Depth>3.71"
Flow Length=585' Slope=0.0374 '/' Tc=6.9 min CN=92 Runoff=10.13 cfs 0.508 af

Subcatchment E2: Southern Subcat Runoff Area=36,164 sf 64.89% Impervious Runoff Depth>3.80"
Tc=5.0 min CN=93 Runoff=5.51 cfs 0.263 af

Subcatchment E2a: Drainage Network Runoff Area=39,314 sf 88.35% Impervious Runoff Depth>4.08"
Flow Length=411' Slope=0.0155 '/' Tc=6.7 min CN=96 Runoff=5.83 cfs 0.307 af

Link DP1: below 1,000.00 cfs Inflow=21.18 cfs 1.078 af
Primary=21.18 cfs 1.078 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 3.378 ac Runoff Volume = 1.078 af Average Runoff Depth = 3.83"
33.37% Pervious = 1.127 ac 66.63% Impervious = 2.250 ac

Summary for Subcatchment E1: Northern Subcat

Runoff = 10.13 cfs @ 11.98 hrs, Volume= 0.508 af, Depth> 3.71"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.86"

Area (sf)	CN	Description
15,046	80	>75% Grass cover, Good, HSG D
3,894	96	Gravel surface, HSG D
1,192	98	Paved parking, HSG D
8,075	98	Paved parking, HSG D
2,924	98	Roofs, HSG D
8,671	77	Woods, Good, HSG D
27,640	98	Water Surface, HSG D
4,206	98	Water Surface, 0% imp, HSG D
71,648	92	Weighted Average
31,817		44.41% Pervious Area
39,831		55.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	585	0.0374	1.41		**Lag/CN Method,**

Summary for Subcatchment E2: Southern Subcat

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.51 cfs @ 11.95 hrs, Volume= 0.263 af, Depth> 3.80"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.86"

Area (sf)	CN	Description
9,817	80	>75% Grass cover, Good, HSG D
2,880	96	Gravel surface, HSG D
7,292	98	Paved parking, HSG D
3,568	98	Roofs, HSG D
12,607	98	Water Surface, HSG D
36,164	93	Weighted Average
12,697		35.11% Pervious Area
23,467		64.89% Impervious Area

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

Summary for Subcatchment E2a: Drainage Network

Runoff = 5.83 cfs @ 11.97 hrs, Volume= 0.307 af, Depth> 4.08"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.86"

Area (sf)	CN	Description
4,581	80	>75% Grass cover, Good, HSG D
33,992	98	Paved parking, HSG D
741	98	Roofs, HSG D
39,314	96	Weighted Average
4,581		11.65% Pervious Area
34,733		88.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	411	0.0155	1.03		**Lag/CN Method,**

Summary for Link DP1:

Inflow Area = 3.378 ac, 66.63% Impervious, Inflow Depth > 3.83" for 10-yr event
Inflow = 21.18 cfs @ 11.97 hrs, Volume= 1.078 af
Primary = 21.18 cfs @ 11.97 hrs, Volume= 1.078 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: Northern Subcat Runoff Area=71,648 sf 55.59% Impervious Runoff Depth>4.89"
Flow Length=585' Slope=0.0374 '/' Tc=6.9 min CN=92 Runoff=13.15 cfs 0.671 af

Subcatchment E2: Southern Subcat Runoff Area=36,164 sf 64.89% Impervious Runoff Depth>4.99"
Tc=5.0 min CN=93 Runoff=7.11 cfs 0.345 af

Subcatchment E2a: Drainage Network Runoff Area=39,314 sf 88.35% Impervious Runoff Depth>5.27"
Flow Length=411' Slope=0.0155 '/' Tc=6.7 min CN=96 Runoff=7.44 cfs 0.396 af

Link DP1: below 1,000.00 cfs Inflow=27.35 cfs 1.412 af
Primary=27.35 cfs 1.412 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 3.378 ac Runoff Volume = 1.412 af Average Runoff Depth = 5.02"
33.37% Pervious = 1.127 ac 66.63% Impervious = 2.250 ac

Summary for Subcatchment E1: Northern Subcat

Runoff = 13.15 cfs @ 11.98 hrs, Volume= 0.671 af, Depth> 4.89"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=6.16"

Area (sf)	CN	Description
15,046	80	>75% Grass cover, Good, HSG D
3,894	96	Gravel surface, HSG D
1,192	98	Paved parking, HSG D
8,075	98	Paved parking, HSG D
2,924	98	Roofs, HSG D
8,671	77	Woods, Good, HSG D
27,640	98	Water Surface, HSG D
4,206	98	Water Surface, 0% imp, HSG D
71,648	92	Weighted Average
31,817		44.41% Pervious Area
39,831		55.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	585	0.0374	1.41		**Lag/CN Method,**

Summary for Subcatchment E2: Southern Subcat

[49] Hint: Tc<2dt may require smaller dt

Runoff = 7.11 cfs @ 11.95 hrs, Volume= 0.345 af, Depth> 4.99"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=6.16"

Area (sf)	CN	Description
9,817	80	>75% Grass cover, Good, HSG D
2,880	96	Gravel surface, HSG D
7,292	98	Paved parking, HSG D
3,568	98	Roofs, HSG D
12,607	98	Water Surface, HSG D
36,164	93	Weighted Average
12,697		35.11% Pervious Area
23,467		64.89% Impervious Area

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

Summary for Subcatchment E2a: Drainage Network

Runoff = 7.44 cfs @ 11.97 hrs, Volume= 0.396 af, Depth> 5.27"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=6.16"

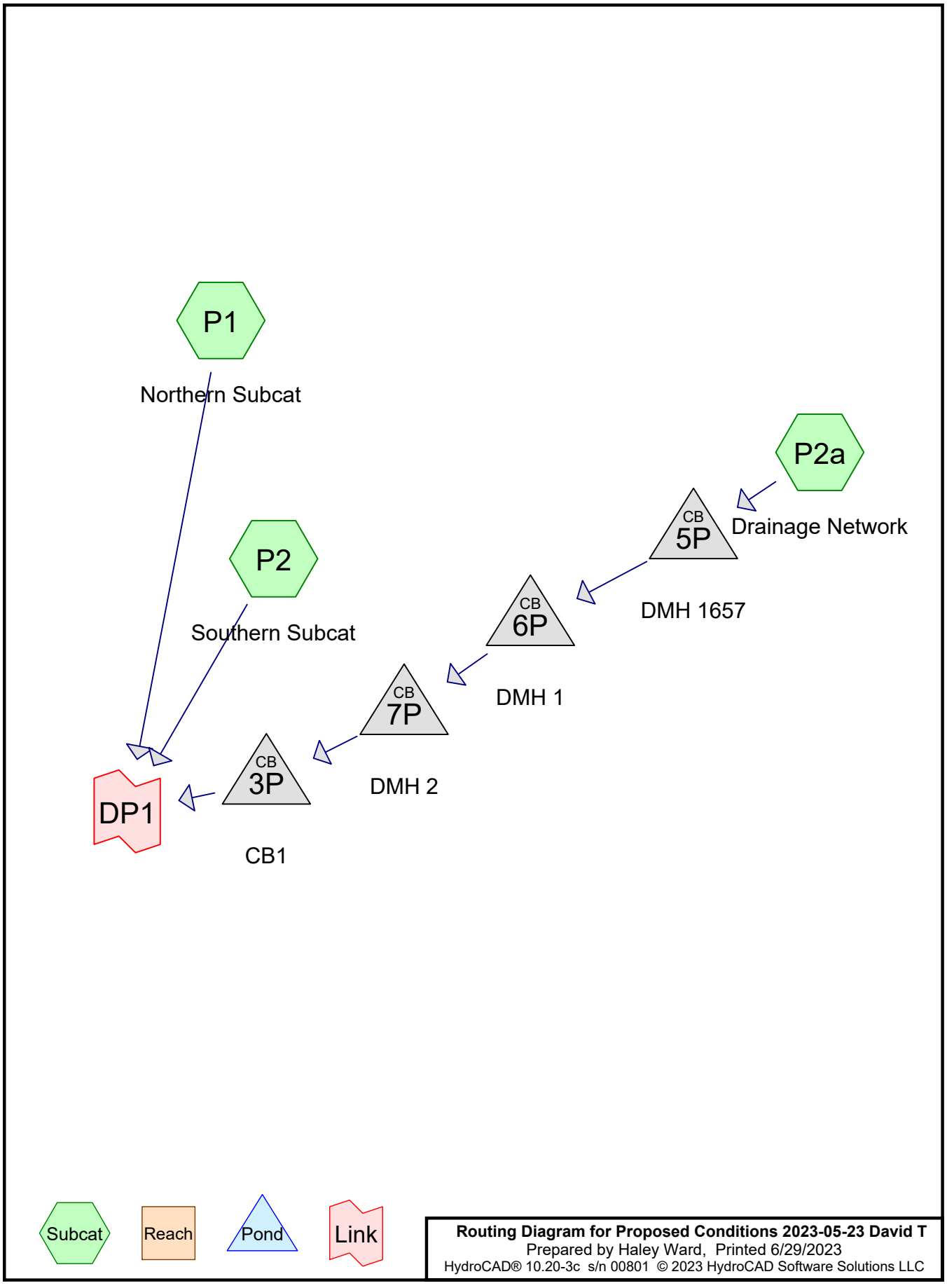
Area (sf)	CN	Description
4,581	80	>75% Grass cover, Good, HSG D
33,992	98	Paved parking, HSG D
741	98	Roofs, HSG D
39,314	96	Weighted Average
4,581		11.65% Pervious Area
34,733		88.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	411	0.0155	1.03		**Lag/CN Method,**

Summary for Link DP1:

Inflow Area = 3.378 ac, 66.63% Impervious, Inflow Depth > 5.02" for 25-yr event
Inflow = 27.35 cfs @ 11.97 hrs, Volume= 1.412 af
Primary = 27.35 cfs @ 11.97 hrs, Volume= 1.412 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Routing Diagram for Proposed Conditions 2023-05-23 David T
Prepared by Haley Ward, Printed 6/29/2023

Project Notes

Defined 5 rainfall events from output (39) IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	3.20	2
2	10-yr	Type II 24-hr		Default	24.00	1	4.86	2
3	25-yr	Type II 24-hr		Default	24.00	1	6.16	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.998	80	>75% Grass cover, Good, HSG D (P1, P2, P2a)
0.109	96	Gravel surface, HSG D (P1, P2)
0.923	98	Paved parking, HSG D (P1, P2a)
0.323	98	Roofs, HSG D (P1, P2, P2a)
0.097	98	Water Surface, 0% imp, HSG D (P1)
0.924	98	Water Surface, HSG D (P1, P2)
0.004	77	Woods, Good, HSG D (P1)
3.377	**93**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
3.377	HSG D	P1, P2, P2a
0.000	Other	
3.377		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.998	0.000	0.998	>75% Grass cover, Good	P1, P2, P2a
0.000	0.000	0.000	0.109	0.000	0.109	Gravel surface	P1, P2
0.000	0.000	0.000	0.923	0.000	0.923	Paved parking	P1, P2a
0.000	0.000	0.000	0.323	0.000	0.323	Roofs	P1, P2, P2a
0.000	0.000	0.000	0.924	0.000	0.924	Water Surface	P1, P2
0.000	0.000	0.000	0.097	0.000	0.097	Water Surface, 0% imp	P1
0.000	0.000	0.000	0.004	0.000	0.004	Woods, Good	P1
0.000	**0.000**	**0.000**	**3.377**	**0.000**	**3.377**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	3P	7.63	7.53	25.1	0.0040	0.013	0.0	24.0	0.0	
2	5P	12.37	10.91	30.0	0.0487	0.013	0.0	18.0	0.0	
3	6P	10.81	10.07	22.0	0.0336	0.013	0.0	18.0	0.0	
4	7P	9.97	7.63	90.0	0.0260	0.013	0.0	18.0	0.0	

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: Northern Subcat Runoff Area=65,504 sf 51.54% Impervious Runoff Depth=2.26"
Flow Length=585' Slope=0.0374 '/' Tc=7.2 min CN=91 Runoff=5.48 cfs 0.283 af

Subcatchment P2: Southern Subcat Runoff Area=30,375 sf 53.50% Impervious Runoff Depth=2.17"
Tc=5.0 min CN=90 Runoff=2.63 cfs 0.126 af

Subcatchment P2a: Drainage Network Runoff Area=51,243 sf 86.84% Impervious Runoff Depth=2.75"
Flow Length=411' Slope=0.0155 '/' Tc=6.7 min CN=96 Runoff=4.89 cfs 0.270 af

Pond 3P: CB1 Peak Elev=8.80' Inflow=4.89 cfs 0.270 af
24.0" Round Culvert n=0.013 L=25.1' S=0.0040 '/' Outflow=4.89 cfs 0.270 af

Pond 5P: DMH 1657 Peak Elev=13.46' Inflow=4.89 cfs 0.270 af
18.0" Round Culvert n=0.013 L=30.0' S=0.0487 '/' Outflow=4.89 cfs 0.270 af

Pond 6P: DMH 1 Peak Elev=11.90' Inflow=4.89 cfs 0.270 af
18.0" Round Culvert n=0.013 L=22.0' S=0.0336 '/' Outflow=4.89 cfs 0.270 af

Pond 7P: DMH 2 Peak Elev=11.06' Inflow=4.89 cfs 0.270 af
18.0" Round Culvert n=0.013 L=90.0' S=0.0260 '/' Outflow=4.89 cfs 0.270 af

Link DP1: below 1,000.00 cfs Inflow=12.81 cfs 0.679 af
Primary=12.81 cfs 0.679 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 3.377 ac Runoff Volume = 0.679 af Average Runoff Depth = 2.41"
35.76% Pervious = 1.208 ac 64.24% Impervious = 2.170 ac

Summary for Subcatchment P1: Northern Subcat

Runoff = 5.48 cfs @ 11.98 hrs, Volume= 0.283 af, Depth= 2.26"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.20"

Area (sf)	CN	Description
3,570	96	Gravel surface, HSG D
27,640	98	Water Surface, HSG D
4,206	98	Water Surface, 0% imp, HSG D
173	77	Woods, Good, HSG D
2,614	98	Roofs, HSG D
23,795	80	>75% Grass cover, Good, HSG D
3,506	98	Paved parking, HSG D
65,504	91	Weighted Average
31,744		48.46% Pervious Area
33,760		51.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	585	0.0374	1.35		**Lag/CN Method,**

Summary for Subcatchment P2: Southern Subcat

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.63 cfs @ 11.95 hrs, Volume= 0.126 af, Depth= 2.17"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.20"

Area (sf)	CN	Description
1,183	96	Gravel surface, HSG D
12,607	98	Water Surface, HSG D
3,643	98	Roofs, HSG D
12,942	80	>75% Grass cover, Good, HSG D
30,375	90	Weighted Average
14,125		46.50% Pervious Area
16,250		53.50% Impervious Area

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

Summary for Subcatchment P2a: Drainage Network

Runoff = 4.89 cfs @ 11.97 hrs, Volume= 0.270 af, Depth= 2.75"
Routed to Pond 5P : DMH 1657

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.20"

Area (sf)	CN	Description
7,806	98	Roofs, HSG D
6,746	80	>75% Grass cover, Good, HSG D
36,691	98	Paved parking, HSG D
51,243	96	Weighted Average
6,746		13.16% Pervious Area
44,497		86.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	411	0.0155	1.03		**Lag/CN Method,**

Summary for Pond 3P: CB1

[79] Warning: Submerged Pond 7P Primary device # 1 OUTLET by 1.15'

Inflow Area = 1.176 ac, 86.84% Impervious, Inflow Depth = 2.75" for 2-yr event
Inflow = 4.89 cfs @ 11.97 hrs, Volume= 0.270 af
Outflow = 4.89 cfs @ 11.97 hrs, Volume= 0.270 af, Atten= 0%, Lag= 0.0 min
Primary = 4.89 cfs @ 11.97 hrs, Volume= 0.270 af
Routed to Link DP1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 8.80' @ 11.97 hrs
Flood Elev= 9.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	7.63'	**24.0" Round Culvert** L= 25.1' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.63' / 7.53' S= 0.0040 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

Primary OutFlow Max=4.76 cfs @ 11.97 hrs HW=8.78' (Free Discharge)
1=Culvert (Barrel Controls 4.76 cfs @ 3.67 fps)

Summary for Pond 5P: DMH 1657

Inflow Area = 1.176 ac, 86.84% Impervious, Inflow Depth = 2.75" for 2-yr event
Inflow = 4.89 cfs @ 11.97 hrs, Volume= 0.270 af
Outflow = 4.89 cfs @ 11.97 hrs, Volume= 0.270 af, Atten= 0%, Lag= 0.0 min
Primary = 4.89 cfs @ 11.97 hrs, Volume= 0.270 af
Routed to Pond 6P : DMH 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 13.46' @ 11.97 hrs
Flood Elev= 17.13'

Device	Routing	Invert	Outlet Devices
#1	Primary	12.37'	**18.0" Round Culvert** L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 12.37' / 10.91' S= 0.0487 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=4.76 cfs @ 11.97 hrs HW=13.44' (Free Discharge)
1=Culvert (Inlet Controls 4.76 cfs @ 3.52 fps)

Summary for Pond 6P: DMH 1

[79] Warning: Submerged Pond 5P Primary device # 1 OUTLET by 0.97'

Inflow Area = 1.176 ac, 86.84% Impervious, Inflow Depth = 2.75" for 2-yr event
Inflow = 4.89 cfs @ 11.97 hrs, Volume= 0.270 af
Outflow = 4.89 cfs @ 11.97 hrs, Volume= 0.270 af, Atten= 0%, Lag= 0.0 min
Primary = 4.89 cfs @ 11.97 hrs, Volume= 0.270 af
Routed to Pond 7P : DMH 2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.90' @ 11.97 hrs
Flood Elev= 14.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	10.81'	**18.0" Round Culvert** L= 22.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.81' / 10.07' S= 0.0336 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=4.76 cfs @ 11.97 hrs HW=11.88' (Free Discharge)
1=Culvert (Inlet Controls 4.76 cfs @ 3.52 fps)

Summary for Pond 7P: DMH 2

[79] Warning: Submerged Pond 6P Primary device # 1 INLET by 0.23'

Inflow Area = 1.176 ac, 86.84% Impervious, Inflow Depth = 2.75" for 2-yr event
Inflow = 4.89 cfs @ 11.97 hrs, Volume= 0.270 af
Outflow = 4.89 cfs @ 11.97 hrs, Volume= 0.270 af, Atten= 0%, Lag= 0.0 min
Primary = 4.89 cfs @ 11.97 hrs, Volume= 0.270 af
Routed to Pond 3P : CB1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.06' @ 11.97 hrs
Flood Elev= 13.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	9.97'	**18.0" Round Culvert** L= 90.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.97' / 7.63' S= 0.0260 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=4.76 cfs @ 11.97 hrs HW=11.04' (Free Discharge)
1=Culvert (Inlet Controls 4.76 cfs @ 3.52 fps)

Summary for Link DP1:

Inflow Area = 3.377 ac, 64.24% Impervious, Inflow Depth = 2.41" for 2-yr event
Inflow = 12.81 cfs @ 11.97 hrs, Volume= 0.679 af
Primary = 12.81 cfs @ 11.97 hrs, Volume= 0.679 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: Northern Subcat Runoff Area=65,504 sf 51.54% Impervious Runoff Depth=3.85"
Flow Length=585' Slope=0.0374 '/' Tc=7.2 min CN=91 Runoff=9.03 cfs 0.482 af

Subcatchment P2: Southern Subcat Runoff Area=30,375 sf 53.50% Impervious Runoff Depth=3.74"
Tc=5.0 min CN=90 Runoff=4.40 cfs 0.217 af

Subcatchment P2a: Drainage Network Runoff Area=51,243 sf 86.84% Impervious Runoff Depth=4.39"
Flow Length=411' Slope=0.0155 '/' Tc=6.7 min CN=96 Runoff=7.59 cfs 0.431 af

Pond 3P: CB1 Peak Elev=9.14' Inflow=7.59 cfs 0.431 af
24.0" Round Culvert n=0.013 L=25.1' S=0.0040 '/' Outflow=7.59 cfs 0.431 af

Pond 5P: DMH 1657 Peak Elev=13.91' Inflow=7.59 cfs 0.431 af
18.0" Round Culvert n=0.013 L=30.0' S=0.0487 '/' Outflow=7.59 cfs 0.431 af

Pond 6P: DMH 1 Peak Elev=12.35' Inflow=7.59 cfs 0.431 af
18.0" Round Culvert n=0.013 L=22.0' S=0.0336 '/' Outflow=7.59 cfs 0.431 af

Pond 7P: DMH 2 Peak Elev=11.51' Inflow=7.59 cfs 0.431 af
18.0" Round Culvert n=0.013 L=90.0' S=0.0260 '/' Outflow=7.59 cfs 0.431 af

Link DP1: below 1,000.00 cfs Inflow=20.73 cfs 1.130 af
Primary=20.73 cfs 1.130 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 3.377 ac Runoff Volume = 1.130 af Average Runoff Depth = 4.02"
35.76% Pervious = 1.208 ac 64.24% Impervious = 2.170 ac

Summary for Subcatchment P1: Northern Subcat

Runoff = 9.03 cfs @ 11.98 hrs, Volume= 0.482 af, Depth= 3.85"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.86"

Area (sf)	CN	Description
3,570	96	Gravel surface, HSG D
27,640	98	Water Surface, HSG D
4,206	98	Water Surface, 0% imp, HSG D
173	77	Woods, Good, HSG D
2,614	98	Roofs, HSG D
23,795	80	>75% Grass cover, Good, HSG D
3,506	98	Paved parking, HSG D
65,504	91	Weighted Average
31,744		48.46% Pervious Area
33,760		51.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	585	0.0374	1.35		**Lag/CN Method,**

Summary for Subcatchment P2: Southern Subcat

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.40 cfs @ 11.95 hrs, Volume= 0.217 af, Depth= 3.74"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.86"

Area (sf)	CN	Description
1,183	96	Gravel surface, HSG D
12,607	98	Water Surface, HSG D
3,643	98	Roofs, HSG D
12,942	80	>75% Grass cover, Good, HSG D
30,375	90	Weighted Average
14,125		46.50% Pervious Area
16,250		53.50% Impervious Area

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

Summary for Subcatchment P2a: Drainage Network

Runoff = 7.59 cfs @ 11.97 hrs, Volume= 0.431 af, Depth= 4.39"
Routed to Pond 5P : DMH 1657

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.86"

Area (sf)	CN	Description
7,806	98	Roofs, HSG D
6,746	80	>75% Grass cover, Good, HSG D
36,691	98	Paved parking, HSG D
51,243	96	Weighted Average
6,746		13.16% Pervious Area
44,497		86.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	411	0.0155	1.03		**Lag/CN Method,**

Summary for Pond 3P: CB1

[79] Warning: Submerged Pond 7P Primary device # 1 OUTLET by 1.49'

Inflow Area = 1.176 ac, 86.84% Impervious, Inflow Depth = 4.39" for 10-yr event
Inflow = 7.59 cfs @ 11.97 hrs, Volume= 0.431 af
Outflow = 7.59 cfs @ 11.97 hrs, Volume= 0.431 af, Atten= 0%, Lag= 0.0 min
Primary = 7.59 cfs @ 11.97 hrs, Volume= 0.431 af
Routed to Link DP1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 9.14' @ 11.97 hrs
Flood Elev= 9.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	7.63'	**24.0" Round Culvert** L= 25.1' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.63' / 7.53' S= 0.0040 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

Primary OutFlow Max=7.39 cfs @ 11.97 hrs HW=9.11' (Free Discharge)
1=Culvert (Barrel Controls 7.39 cfs @ 4.12 fps)

Summary for Pond 5P: DMH 1657

Inflow Area = 1.176 ac, 86.84% Impervious, Inflow Depth = 4.39" for 10-yr event
Inflow = 7.59 cfs @ 11.97 hrs, Volume= 0.431 af
Outflow = 7.59 cfs @ 11.97 hrs, Volume= 0.431 af, Atten= 0%, Lag= 0.0 min
Primary = 7.59 cfs @ 11.97 hrs, Volume= 0.431 af
Routed to Pond 6P : DMH 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 13.91' @ 11.97 hrs
Flood Elev= 17.13'

Device	Routing	Invert	Outlet Devices
#1	Primary	12.37'	**18.0" Round Culvert** L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 12.37' / 10.91' S= 0.0487 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=7.38 cfs @ 11.97 hrs HW=13.87' (Free Discharge)
1=Culvert (Inlet Controls 7.38 cfs @ 4.17 fps)

Summary for Pond 6P: DMH 1

[79] Warning: Submerged Pond 5P Primary device # 1 OUTLET by 1.41'

Inflow Area = 1.176 ac, 86.84% Impervious, Inflow Depth = 4.39" for 10-yr event
Inflow = 7.59 cfs @ 11.97 hrs, Volume= 0.431 af
Outflow = 7.59 cfs @ 11.97 hrs, Volume= 0.431 af, Atten= 0%, Lag= 0.0 min
Primary = 7.59 cfs @ 11.97 hrs, Volume= 0.431 af
Routed to Pond 7P : DMH 2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 12.35' @ 11.97 hrs
Flood Elev= 14.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	10.81'	**18.0" Round Culvert** L= 22.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.81' / 10.07' S= 0.0336 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=7.38 cfs @ 11.97 hrs HW=12.31' (Free Discharge)
1=Culvert (Inlet Controls 7.38 cfs @ 4.18 fps)

Summary for Pond 7P: DMH 2

[79] Warning: Submerged Pond 6P Primary device # 1 INLET by 0.67'

Inflow Area = 1.176 ac, 86.84% Impervious, Inflow Depth = 4.39" for 10-yr event
Inflow = 7.59 cfs @ 11.97 hrs, Volume= 0.431 af
Outflow = 7.59 cfs @ 11.97 hrs, Volume= 0.431 af, Atten= 0%, Lag= 0.0 min
Primary = 7.59 cfs @ 11.97 hrs, Volume= 0.431 af
Routed to Pond 3P : CB1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11.51' @ 11.97 hrs
Flood Elev= 13.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	9.97'	**18.0" Round Culvert** L= 90.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.97' / 7.63' S= 0.0260 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=7.38 cfs @ 11.97 hrs HW=11.47' (Free Discharge)
1=Culvert (Inlet Controls 7.38 cfs @ 4.18 fps)

Summary for Link DP1:

Inflow Area = 3.377 ac, 64.24% Impervious, Inflow Depth = 4.02" for 10-yr event
Inflow = 20.73 cfs @ 11.97 hrs, Volume= 1.130 af
Primary = 20.73 cfs @ 11.97 hrs, Volume= 1.130 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1: Northern Subcat Runoff Area=65,504 sf 51.54% Impervious Runoff Depth=5.11"
Flow Length=585' Slope=0.0374 '/' Tc=7.2 min CN=91 Runoff=11.79 cfs 0.641 af

Subcatchment P2: Southern Subcat Runoff Area=30,375 sf 53.50% Impervious Runoff Depth=5.00"
Tc=5.0 min CN=90 Runoff=5.77 cfs 0.291 af

Subcatchment P2a: Drainage Network Runoff Area=51,243 sf 86.84% Impervious Runoff Depth=5.69"
Flow Length=411' Slope=0.0155 '/' Tc=6.7 min CN=96 Runoff=9.70 cfs 0.557 af

Pond 3P: CB1 Peak Elev=9.38' Inflow=9.70 cfs 0.557 af
24.0" Round Culvert n=0.013 L=25.1' S=0.0040 '/' Outflow=9.70 cfs 0.557 af

Pond 5P: DMH 1657 Peak Elev=14.41' Inflow=9.70 cfs 0.557 af
18.0" Round Culvert n=0.013 L=30.0' S=0.0487 '/' Outflow=9.70 cfs 0.557 af

Pond 6P: DMH 1 Peak Elev=12.85' Inflow=9.70 cfs 0.557 af
18.0" Round Culvert n=0.013 L=22.0' S=0.0336 '/' Outflow=9.70 cfs 0.557 af

Pond 7P: DMH 2 Peak Elev=12.01' Inflow=9.70 cfs 0.557 af
18.0" Round Culvert n=0.013 L=90.0' S=0.0260 '/' Outflow=9.70 cfs 0.557 af

Link DP1: below 1,000.00 cfs Inflow=26.88 cfs 1.489 af
Primary=26.88 cfs 1.489 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 3.377 ac Runoff Volume = 1.489 af Average Runoff Depth = 5.29"
35.76% Pervious = 1.208 ac 64.24% Impervious = 2.170 ac

Summary for Subcatchment P1: Northern Subcat

Runoff = 11.79 cfs @ 11.98 hrs, Volume= 0.641 af, Depth= 5.11"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=6.16"

Area (sf)	CN	Description
3,570	96	Gravel surface, HSG D
27,640	98	Water Surface, HSG D
4,206	98	Water Surface, 0% imp, HSG D
173	77	Woods, Good, HSG D
2,614	98	Roofs, HSG D
23,795	80	>75% Grass cover, Good, HSG D
3,506	98	Paved parking, HSG D
65,504	91	Weighted Average
31,744		48.46% Pervious Area
33,760		51.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	585	0.0374	1.35		**Lag/CN Method,**

Summary for Subcatchment P2: Southern Subcat

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.77 cfs @ 11.95 hrs, Volume= 0.291 af, Depth= 5.00"
Routed to Link DP1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=6.16"

Area (sf)	CN	Description
1,183	96	Gravel surface, HSG D
12,607	98	Water Surface, HSG D
3,643	98	Roofs, HSG D
12,942	80	>75% Grass cover, Good, HSG D
30,375	90	Weighted Average
14,125		46.50% Pervious Area
16,250		53.50% Impervious Area

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

Summary for Subcatchment P2a: Drainage Network

Runoff = 9.70 cfs @ 11.97 hrs, Volume= 0.557 af, Depth= 5.69"
Routed to Pond 5P : DMH 1657

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=6.16"

Area (sf)	CN	Description
7,806	98	Roofs, HSG D
6,746	80	>75% Grass cover, Good, HSG D
36,691	98	Paved parking, HSG D
51,243	96	Weighted Average
6,746		13.16% Pervious Area
44,497		86.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	411	0.0155	1.03		**Lag/CN Method,**

Summary for Pond 3P: CB1

[79] Warning: Submerged Pond 7P Primary device # 1 OUTLET by 1.73'

Inflow Area = 1.176 ac, 86.84% Impervious, Inflow Depth = 5.69" for 25-yr event
Inflow = 9.70 cfs @ 11.97 hrs, Volume= 0.557 af
Outflow = 9.70 cfs @ 11.97 hrs, Volume= 0.557 af, Atten= 0%, Lag= 0.0 min
Primary = 9.70 cfs @ 11.97 hrs, Volume= 0.557 af
Routed to Link DP1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 9.38' @ 11.97 hrs
Flood Elev= 9.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	7.63'	**24.0" Round Culvert** L= 25.1' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 7.63' / 7.53' S= 0.0040 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

Primary OutFlow Max=9.44 cfs @ 11.97 hrs HW=9.35' (Free Discharge)
1=Culvert (Barrel Controls 9.44 cfs @ 4.40 fps)

Summary for Pond 5P: DMH 1657

Inflow Area = 1.176 ac, 86.84% Impervious, Inflow Depth = 5.69" for 25-yr event
Inflow = 9.70 cfs @ 11.97 hrs, Volume= 0.557 af
Outflow = 9.70 cfs @ 11.97 hrs, Volume= 0.557 af, Atten= 0%, Lag= 0.0 min
Primary = 9.70 cfs @ 11.97 hrs, Volume= 0.557 af
Routed to Pond 6P : DMH 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 14.41' @ 11.97 hrs
Flood Elev= 17.13'

Device	Routing	Invert	Outlet Devices
#1	Primary	12.37'	**18.0" Round Culvert** L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 12.37' / 10.91' S= 0.0487 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=9.44 cfs @ 11.97 hrs HW=14.35' (Free Discharge)
1=Culvert (Inlet Controls 9.44 cfs @ 5.34 fps)

Summary for Pond 6P: DMH 1

[79] Warning: Submerged Pond 5P Primary device # 1 INLET by 0.43'

Inflow Area = 1.176 ac, 86.84% Impervious, Inflow Depth = 5.69" for 25-yr event
Inflow = 9.70 cfs @ 11.97 hrs, Volume= 0.557 af
Outflow = 9.70 cfs @ 11.97 hrs, Volume= 0.557 af, Atten= 0%, Lag= 0.0 min
Primary = 9.70 cfs @ 11.97 hrs, Volume= 0.557 af
Routed to Pond 7P : DMH 2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 12.85' @ 11.97 hrs
Flood Elev= 14.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	10.81'	**18.0" Round Culvert** L= 22.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 10.81' / 10.07' S= 0.0336 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=9.44 cfs @ 11.97 hrs HW=12.79' (Free Discharge)
1=Culvert (Inlet Controls 9.44 cfs @ 5.34 fps)

Summary for Pond 7P: DMH 2

[79] Warning: Submerged Pond 6P Primary device # 1 INLET by 1.15'

Inflow Area = 1.176 ac, 86.84% Impervious, Inflow Depth = 5.69" for 25-yr event
Inflow = 9.70 cfs @ 11.97 hrs, Volume= 0.557 af
Outflow = 9.70 cfs @ 11.97 hrs, Volume= 0.557 af, Atten= 0%, Lag= 0.0 min
Primary = 9.70 cfs @ 11.97 hrs, Volume= 0.557 af
Routed to Pond 3P : CB1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 12.01' @ 11.97 hrs
Flood Elev= 13.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	9.97'	**18.0" Round Culvert** L= 90.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.97' / 7.63' S= 0.0260 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=9.44 cfs @ 11.97 hrs HW=11.95' (Free Discharge)
1=Culvert (Inlet Controls 9.44 cfs @ 5.34 fps)

Summary for Link DP1:

Inflow Area = 3.377 ac, 64.24% Impervious, Inflow Depth = 5.29" for 25-yr event
Inflow = 26.88 cfs @ 11.97 hrs, Volume= 1.489 af
Primary = 26.88 cfs @ 11.97 hrs, Volume= 1.489 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

APPENDIX D

INSPECTION & LONG TERM MAINTENANCE PLAN

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

INSPECTION & LONG-TERM MAINTENANCE PLAN
FOR
SITE DEVELOPMENT

35 BADGERS ISLAND WEST
KITTERY, ME

Introduction

The intent of this plan is to provide Hampshire Development (herein referred to as "owner") with a list of procedures that document the inspection and maintenance requirements of the stormwater management system for this development. Specifically, the proposed closed drainage network and associated drainage structures (collectively referred to as the "Stormwater Management System"). The contact information for the owner shall be kept current, and if there is a change of ownership of the property this plan must be transferred to the new owner.

The following inspection and maintenance program is necessary to keep the stormwater management system functioning properly and will help in maintaining a high quality of stormwater runoff to minimize potential environmental impacts. By following the enclosed procedures, the owner will be able to maintain the functional design of the stormwater management system and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Annual Report

The owner shall prepare an annual Inspection & Maintenance Report. The report shall include a summary of the system's maintenance and repair by transmission of the Inspection & Maintenance Log and other information as required. A copy of the report shall be delivered annually by July 1st to the Kittery Code Enforcement Officer.

Inspection & Maintenance Checklist/Log

The following pages contain the Stormwater Management System Inspection & Maintenance Requirements and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner as a guideline for performing the inspection and maintenance of the Stormwater Management System. This is a guideline and should be periodically reviewed for conformance with current practice and standards.

Stormwater Management System Components

The Stormwater Management System is designed to mitigate the quality of site-generated stormwater runoff. As a result, the design includes the following elements:

Non-Structural BMPs

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project include but are not limited to:

- Temporary and Permanent mulching
- Temporary and Permanent grass cover
- Trees
- Shrubs and ground covers
- Miscellaneous landscape plantings
- Dust control
- Tree protection
- Topsoiling
- Sediment barriers
- Stabilized construction entrance
- Catch basin basket

Structural BMPs

Structural BMPs are more labor and capital-intensive structures or installations that require more specialized personnel to install. Examples on this project include but are not limited to:

- Storm Drains with Deep Sumps
- Permeable Pavers

Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMP's that may be found on this project.

1. **Grassed areas (until established):** After each rain event of 0.5" or more during a 24-hour period, inspect grassed areas for signs of disturbance, such as erosion. If damaged areas are discovered, immediately repair the damage. Repairs may include adding new topsoil, lime, seed, fertilizer and mulch.
2. **Plantings**: Planting and landscaping (trees, shrubs) shall be monitored bi-monthly during the first year to insure viability and vigorous growth. Replace dead or dying vegetation with new stock and make adjustments to the conditions that caused the dead or dying vegetation. During dryer times of the year, provide weekly watering or irrigation during the establishment period of the first year. Make the necessary adjustments to ensure long-term health of the vegetated covers, i.e. provide

more permanent mulch or compost or other means of protection.

3. **Storm Drains:** Monitor accumulation of debris in catch basins monthly or after significant rain events. Remove sediments when they accumulate within the outlet pipe. During construction, maintain inlet protection until all roadways and parking areas have been stabilized. Prior to the end of construction, inspect the drains and basins for accumulations and remove and clean by jet-vacuuming.
4. **Permeable Pavers:** Ensure that sediments do not enter and plug pavement. Remove sediments, trash, and debris, as necessary. Repair porous installations as necessary to maintain functionality. Vacuum at least twice annually.

Pollution Prevention

The following pollution prevention activities shall be undertaken to minimize potential impacts on stormwater runoff quality. The Contractor is responsible for all activities during construction. The Owner is responsible thereafter.

Spill Procedures

Any discharge of waste oil or other pollutant shall be reported immediately to the Maine Department of Environmental Protection (Maine DEP). The Contractor/Owner will be responsible for any incident of groundwater contamination resulting from the improper discharge of pollutants to the stormwater system, and may be required by Maine DEP to remediate incidents that may impact groundwater quality. If the property ownership is transferred, the new owner will be informed of the legal responsibilities associated with operation of the stormwater system, as indicated above.

Sanitary Facilities

Sanitary facilities shall be provided during all phases of construction.

Material Storage

No on site trash facility is provided until homes are constructed. The contractors are required to remove trash from the site. Hazardous material storage is prohibited.

Material Disposal

All waste material, trash, sediment, and debris shall be removed from the site and disposed of in accordance with applicable local, state, and federal guidelines and regulations. Removed sediments shall be if necessary dewatered prior to disposal.

Invasive Species

Monitor the Stormwater Management System for signs of invasive species growth. If caught early, their eradication is much easier. The most likely places where invasions start is in wetter, disturbed soils or detention ponds. Species such as phragmites and purple loose-strife are common invaders in these wetter areas. If they are found, the owner shall refer to the Invasive Plants List created by the Maine Department of Agriculture, Conservation & Forestry or contact a wetlands scientist with experience in invasive species control to implement a plan of action for eradication. Measures that do not require the application of chemical herbicides should be the first line of defense.

Figure 1: Lythrum salicaria, Purple Loosestrife. Photo by Liz West.

Figure 2: Phragmites australis. Photo by Le Loup Gris

Maine Advisory List of Invasive Plants - 2019 revision

Common Name	Scientific Name	Ranking
American water lotus	*Nelumbo lutea*	Severely invasive
Amur honeysuckle*	*Lonicera maackii*	Severely invasive
Asiatic bittersweet*	*Celastrus orbiculatus*	Severely invasive
Bella honeysuckle*	*Lonicera x bella*	Severely invasive
Black locust*	*Robinia pseudoacacia*	Severely invasive
Black swallowwort	*Cynanchum louiseae*	Severely invasive
Bohemian knotweed	*Fallopia x bohemica*	Severely invasive
Brazilian waterweed**	*Egeria densa*	Severely invasive
Canada thistle	*Cirsium arvense*	Severely invasive
Chinese yam	*Dioscorea polystachya*	Severely invasive
Chocolate vine; five-leaf akebia	*Akebia quinata*	Severely invasive
Common buckthorn	*Rhamnus cathartica*	Severely invasive
Common reed	*Phragmites australis*	Severely invasive
Curly pondweed**	*Potamogeton crispus*	Severely invasive
Eurasian milfoil**	*Myriophyllum spicatum*	Severely invasive
European alder	*Alnus glutinosa*	Severely invasive
European frog's bit**	*Hydrocharis morsus-ranae*	Severely invasive
False indigo*	*Amorpha fruticosa*	Severely invasive
Fanwort**	*Cabomba caroliniana*	Severely invasive
Flowering rush	*Butomus umbellatus*	Severely invasive
Garlic mustard*	*Alliaria petiolata*	Severely invasive
Giant knotweed	*Fallopia sachalinensis*	Severely invasive
Glossy buckthorn*	*Frangula alnus*	Severely invasive
Goutweed*	*Aegopodium podagraria*	Severely invasive
Hydrilla**	*Hydrilla verticillata*	Severely invasive
Inflated bladderwort	*Utricularia inflata*	Severely invasive
Japanese barberry*	*Berberis thunbergii*	Severely invasive
Japanese honeysuckle*	*Lonicera japonica*	Severely invasive
Japanese knotweed*	*Fallopia japonica*	Severely invasive
Japanese stilt grass*	*Microstegium vimineum*	Severely invasive
Morrow's honeysuckle*	*Lonicera morrowii*	Severely invasive
Ornamental jewelweed*	*Impatiens glandulifera*	Severely invasive
Pale swallowwort	*Cynanchum rossicum*	Severely invasive
Parrot feather**	*Myriophyllum aquaticum*	Severely invasive
Porcelainberry*	*Ampelopsis glandulosa*	Severely invasive
Reed canary grass	*Phalaris arundinacea*	Severely invasive
Slender-leaved naiad**	*Najas minor*	Severely invasive
Starry stonewort	*Nitellopsis obtusa*	Severely invasive
Starwort	*Callitriche stagnalis*	Severely invasive
Tall pepperwort	*Lepidium latifolium*	Severely invasive
Tartarian honeysuckle*	*Lonicera tatarica*	Severely invasive
Tree of heaven*	*Ailanthus altissima*	Severely invasive
Variable milfoil**	*Myriophyllum heterophyllum*	Severely invasive
Water chestnut**	*Trapa natans*	Severely invasive
Water lettuce	*Pistia stratiotes*	Severely invasive

**Plant regulated by the Do Not Sell list, Horticulture Program, DACF*

***Aquatic plant regulated by Maine DEP*

Maine Advisory List of Invasive Plants - 2019 revision

Common Name	Scientific Name	Ranking
Water soldier	*Stratiotes aloides*	Severely invasive
Wavyleaf basketgrass	*Oplismenus hirtellus ssp. undulatifolius*	Severely invasive
White cottonwood*	*Populus alba*	Severely invasive
Wineberry	*Rubus phoenicolasias*	Severely invasive
Winged euonymous*	*Euonymus alatus*	Severely invasive
Yellow floating heart**	*Nymphoides peltata*	Severely invasive
Yellow iris*	*Iris pseudacorus*	Severely invasive
Amur cork tree*	*Phellodendron amurense*	Very invasive
Amur maple*	*Acer ginnala*	Very invasive
Autumn olive*	*Elaeagnus umbellata*	Very invasive
Black jetbead	*Rhodotypos scandens*	Very invasive
Border privet	*Ligustrum obtusifolium*	Very invasive
California privet	*Ligustrum ovalifolium*	Very invasive
Callery ("Bradford") pear	*Pyrus calleryana*	Very invasive
Common barberry*	*Berberis vulgaris*	Very invasive
Creeping buttercup	*Ranunculus repens*	Very invasive
Dame's rocket*	*Hesperis matronalis*	Very invasive
English water grass	*Glyceria maxima*	Very invasive
European blackberry	*Rubus fruticosus*	Very invasive
Giant hogweed	*Heracleum mantegazzianum*	Very invasive
Hairy willow-herb	*Epilobium hirsutum*	Very invasive
Hardy kiwi	*Actinidia arguta*	Very invasive
Japanese hops	*Humulus japonicus*	Very invasive
Kudzu	*Pueraria lobata*	Very invasive
Leafy spurge	*Euphorbia esula*	Very invasive
Lesser celandine	*Ficaria verna*	Very invasive
Linden arrowwood	*Viburnum dilatatum*	Very invasive
Mile-a-minute vine*	*Persicaria perfoliata*	Very invasive
Multiflora rose*	*Rosa multiflora*	Very invasive
Narrowleaf bittercress	*Cardamine impatiens*	Very invasive
Norway maple*	*Acer platanoides*	Very invasive
Oriental photinia	*Photinia villosa*	Very invasive
Privet*	*Ligustrum vulgare*	Very invasive
Purple loosestrife*	*Lythrum salicaria*	Very invasive
Rugosa rose	*Rosa rugosa*	Very invasive
Water forget-me-not	*Myosotis scorpioides*	Very invasive
Wintercreeper	*Euonymus fortunei*	Very invasive
Yam-leaved virgin's bower	*Clematis terniflora*	Very invasive
Bicolor lespedeza, two-colored bush-clover	*Lespedeza bicolor*	Invasive, habitat-specific threats
Brown knapweed	*Centaurea jacea*	Invasive, habitat-specific threats
Chinese bindweed*	*Fallopia baldschuanica*	Invasive, habitat-specific threats
Chinese bush-clover	*Lespedeza cuneata*	Invasive, habitat-specific threats
Coltsfoot	*Tussilago farfara*	Invasive, habitat-specific threats

**Plant regulated by the Do Not Sell list, Horticulture Program, DACF*

***Aquatic plant regulated by Maine DEP*

Maine Advisory List of Invasive Plants - 2019 revision

Common Name	Scientific Name	Ranking
Dalmation toadflax	*Linaria dalmatica*	Invasive, habitat-specific threats
February daphne; paradise plant	*Daphne mezereum*	Invasive, habitat-specific threats
Fine-leaved sheep fescue	*Festuca filiformis*	Invasive, habitat-specific threats
Gray willow	*Salix cinerea*	Invasive, habitat-specific threats
Japanese tree lilac	*Syringa reticulata*	Invasive, habitat-specific threats
Mudmat	*Glossostigma cleistanthum*	Invasive, habitat-specific threats
One-rowed watercress	*Nasturtium microphyllum*	Invasive, habitat-specific threats
Oriental lady's thumb smartweed	*Persicaria longiseta*	Invasive, habitat-specific threats
Russian olive	*Elaeagnus angustifolia*	Invasive, habitat-specific threats
Siberian elm	*Ulmus pumila*	Invasive, habitat-specific threats
Siebold viburnum	*Viburnum sieboldii*	Invasive, habitat-specific threats
Spotted knapweed	*Centaurea stoebe*	Invasive, habitat-specific threats
Watercress	*Nasturtium officinale*	Invasive, habitat-specific threats
Wood blue grass	*Poa nemoralis*	Invasive, habitat-specific threats
Woodland angelica	*Angelica sylvestris*	Invasive, habitat-specific threats
Bittersweet or climbing nightshade	*Solanum dulcamara*	Potential to be invasive, monitor
Bull thistle	*Cirsium vulgare*	Potential to be invasive, monitor
Common mugwort*	*Artemisia vulgaris*	Potential to be invasive, monitor
Common valerian	*Valeriana officinalis*	Potential to be invasive, monitor
Creeping jenny	*Lysimachia nummularia*	Potential to be invasive, monitor
Cypress spurge*	*Euphorbia cyparissias*	Potential to be invasive, monitor
Princess tree*	*Paulownia tomentosa*	Potential to be invasive, monitor
Small carpgrass	*Arthraxon hispidus*	Potential to be invasive, monitor
Sycamore maple	*Acer pseudoplatanus*	Potential to be invasive, monitor
Western lupine	*Lupinus polyphyllus*	Potential to be invasive, monitor
Wild parsnip	*Pastinaca sativa*	Potential to be invasive, monitor
Yellow hornpoppy	*Glaucium flavum*	Potential to be invasive, monitor

Also evaluated in 2018; not meeting criteria for inclusion as invasive:

Common Name	Scientific Name	Outcome
Canada bluegrass, flat-stemmed bluegrass	*Poa compressa*	Not invasive at this time
Wild thyme	*Thymus pulegioides*	Not invasive at this time
European spindle-tree	*Euonymus europaeus*	Insufficient data to evaluate
False spiraea	*Sorbaria sorbifolia*	Insufficient data to evaluate
Fly honeysuckle	*Lonicera xylosteum*	Insufficient data to evaluate
Great watercress, great yellow-cress	*Rorippa amphibia*	Insufficient data to evaluate
Japanese fuki	*Petasites japonicus*	Insufficient data to evaluate
Wall lettuce	*Mycelis muralis*	Insufficient data to evaluate

**Plant regulated by the Do Not Sell list, Horticulture Program, DACF*

***Aquatic plant regulated by Maine DEP*

CATCH BASIN BASKET CONSTRUCTION MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Check for damage to basket -Remove sediment from basket	Within 24 hours of rainfall, Daily during extended rainfall	*-Repair basket as necessary to prevent particles from reaching drainage system, or to prevent flooding.* *-Empty basket after every storm, or if clogged.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

CLOSED DRAINAGE STRUCTURE LONG-TERM MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Outlet Control Structures *-Drain Manholes* *-Catch Basins*	Every other Month	*Check for erosion or short-circuiting* *Check for sediment accumulation* *Check for floatable contaminants*
-Drainage Pipes	1 time per 2 years	*Check for sediment accumulation/clogging, or soiled runoff.* *Check for erosion at outlets.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

PERMEABLE PAVER LONG-TERM MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Inspect surface for the occurrence of sediment, trash, debris, or structural damage. *-Check for surface ponding*	Frequently in first few months following construction, Bi-annually after	*-Ensure that sediments do not enter and plug surface. Remove sediments, trash, and debris, as necessary.* *-Repair porous installations as necessary to maintain functionality.* *-Vacuum surface at least twice annually.* *-Prevent vehicles with muddy wheels from accessing permeable surface.*
-No winter sanding permitted *-Minimize application of salt*	Continuous practice	

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

STABILIZED CONSTRUCTION ENTRANCE CONSTRUCTION MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
ENTRANCE SURFACE *-Check for sediment accumulation/clogging of stone* *-Check Vegetative filter strips*	After heavy rains, as necessary	*-Top dress pad with new stone.* *-Replace stone completely if completely clogged.* *-Maintain vigorous stand of vegetation.*
WASHING FACILITIES (if applicable) *-Monitor Sediment Accumulation*	As often as necessary	*-Remove Sediments from traps.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

APPENDIX E

TABLES, CHARTS, ETC.

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.755 degrees West
Latitude	43.082 degrees North
Elevation	0 feet
Date/Time	Mon, 25 Jul 2022 15:42:48 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.65	2.92	**1yr**	2.35	2.81	3.22	3.94	4.54	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.48	3.20	3.57	**2yr**	2.84	3.43	3.93	4.67	5.32	**2yr**
5yr	0.37	0.58	0.73	0.97	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.14	4.06	4.57	**5yr**	3.59	4.40	5.03	5.93	6.69	**5yr**
10yr	0.41	0.65	0.82	1.11	1.45	1.89	**10yr**	1.25	1.73	2.23	2.89	3.74	4.86	5.52	**10yr**	4.30	5.31	6.07	7.09	7.96	**10yr**
25yr	0.48	0.76	0.97	1.34	1.77	2.34	**25yr**	1.53	2.14	2.78	3.63	4.73	6.16	7.09	**25yr**	5.45	6.81	7.79	9.00	10.03	**25yr**
50yr	0.54	0.86	1.10	1.54	2.07	2.76	**50yr**	1.79	2.53	3.29	4.32	5.65	7.37	8.57	**50yr**	6.52	8.24	9.40	10.79	11.95	**50yr**
100yr	0.60	0.97	1.25	1.77	2.42	3.26	**100yr**	2.09	2.98	3.90	5.15	6.76	8.83	10.36	**100yr**	7.81	9.96	11.35	12.93	14.24	**100yr**
200yr	0.67	1.10	1.43	2.05	2.82	3.83	**200yr**	2.44	3.51	4.61	6.12	8.07	10.58	12.52	**200yr**	9.36	12.04	13.72	15.50	16.97	**200yr**
500yr	0.80	1.31	1.71	2.48	3.48	4.76	**500yr**	3.00	4.38	5.76	7.70	10.20	13.44	16.10	**500yr**	11.90	15.48	17.62	19.72	21.43	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.73	0.88	**1yr**	0.63	0.86	0.93	1.33	1.68	2.23	2.47	**1yr**	1.98	2.38	2.86	3.19	3.89	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.05	3.44	**2yr**	2.70	3.31	3.82	4.54	5.08	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.12	2.73	3.78	4.17	**5yr**	3.34	4.01	4.71	5.52	6.22	**5yr**
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.56	1.80	2.39	3.06	4.36	4.84	**10yr**	3.86	4.65	5.42	6.39	7.17	**10yr**
25yr	0.44	0.67	0.83	1.18	1.56	1.90	**25yr**	1.35	1.86	2.10	2.75	3.53	4.71	5.86	**25yr**	4.17	5.63	6.61	7.75	8.64	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.16	**50yr**	1.52	2.12	2.34	3.07	3.92	5.32	6.75	**50yr**	4.71	6.50	7.67	8.99	9.97	**50yr**
100yr	0.53	0.81	1.01	1.46	2.00	2.47	**100yr**	1.73	2.41	2.62	3.41	4.34	5.98	7.79	**100yr**	5.30	7.49	8.89	10.43	11.50	**100yr**
200yr	0.59	0.89	1.12	1.63	2.27	2.81	**200yr**	1.96	2.75	2.93	3.78	4.78	6.71	8.97	**200yr**	5.93	8.63	10.30	12.13	13.29	**200yr**
500yr	0.68	1.01	1.31	1.90	2.70	3.36	**500yr**	2.33	3.28	3.41	4.31	5.43	7.80	10.82	**500yr**	6.90	10.41	12.52	14.82	16.09	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.20	2.98	3.16	**1yr**	2.63	3.04	3.57	4.37	5.03	**1yr**
2yr	0.34	0.52	0.64	0.86	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.52	3.42	3.70	**2yr**	3.02	3.56	4.09	4.84	5.62	**2yr**
5yr	0.40	0.62	0.76	1.05	1.34	1.62	**5yr**	1.15	1.58	1.88	2.54	3.25	4.33	4.96	**5yr**	3.84	4.77	5.37	6.37	7.15	**5yr**
10yr	0.47	0.72	0.89	1.24	1.61	1.98	**10yr**	1.39	1.93	2.28	3.11	3.96	5.33	6.21	**10yr**	4.72	5.97	6.83	7.84	8.75	**10yr**
25yr	0.58	0.88	1.09	1.56	2.05	2.57	**25yr**	1.77	2.51	2.96	4.07	5.16	7.76	8.35	**25yr**	6.87	8.03	9.17	10.34	11.41	**25yr**
50yr	0.67	1.02	1.27	1.83	2.46	3.13	**50yr**	2.12	3.06	3.60	5.00	6.33	9.71	10.48	**50yr**	8.60	10.08	11.48	12.73	13.97	**50yr**
100yr	0.79	1.19	1.50	2.16	2.96	3.81	**100yr**	2.56	3.73	4.38	6.16	7.78	12.15	13.14	**100yr**	10.75	12.64	14.37	15.71	17.10	**100yr**
200yr	0.92	1.39	1.76	2.55	3.56	4.65	**200yr**	3.07	4.55	5.34	7.59	9.56	15.24	16.50	**200yr**	13.49	15.86	18.02	19.37	20.93	**200yr**
500yr	1.15	1.71	2.20	3.19	4.54	6.04	**500yr**	3.92	5.90	6.94	10.03	12.60	20.59	22.29	**500yr**	18.23	21.44	24.31	25.55	27.36	**500yr**

Powered by ACIS Northeast Regional Climate Center

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3, Portsmouth, NH 03801
Phone (603) 430-9282 Fax 436-2315

23 May 2023

Jason Garnham, Director of Planning and Development
Town of Kittery
200 Rogers Road, Kittery, ME 03904

Re: Preliminary Site Plan Review Application; Conversion to Residential
Tax Map 1, Lot 32, 35 Badgers Island West
Response to CMA Comments

Dear Jason:

On behalf of BIW Inc. we hereby submitted revised plans and supporting material for **Preliminary Site Plan Review Approval** to address the comments from the May 18, 2023, review letter from CMA Engineers. The review was of our April 6, 2023, submission. The Planning Board, at your April 27, 2023, meeting, voted to schedule a Public Hearing for the May 25, 2023, Planning Board. The comments were just received on May 18th. While we understand there is limited time to review our response prior to the meeting, we would like the opportunity to walk the Board through our response at the meeting. The specific comments, repeated below with our responses in bold text, are as follows:

Cover

1. The legend should be updated to apply to the plans. **We have edited the Legend to be site specific.**

Sheet C1 – Existing Conditions Plan

1. The legend should be updated to apply to the plans. **We have edited the Legend to be site specific.** Is the Devegetated Coverage Calculation necessary on this sheet? **We would like to leave it on as it provides added information about the existing site condition.**

Sheet C2 – Shoreland Development Plan

1. It is not clear why the proposed building and driveway need to encroach into the wetland buffer. **The project proposes minor intrusions into the wetland buffer and includes a reduction in the total buffer impact. The placement of the existing building on the property and the desire to revise the surface parking to underground parking create the need to impact the buffer to accomplish the project goals.**

L-1 – Conceptual Landscape Plan

1. The proposed building configuration including driveways and walkways is different than what is shown on the plans. How does this change the landscape plan? **The landscape plan will be revised to the current site layout and Ironwood comments addressed.**

Sheet C3 – Utility Plan

1. The leader "Sewer Line to be Relocated" is confusing because it shows the existing and proposed sewer with leaders to both without a clear difference in the line types. Call out the new service separately (with the pipe size, material, and slope). **Done.** Is the invert out of the manhole the same? **Yes.** There should be details, notes, etc. on abandoning the old penetration, reconfiguring the manhole invert trough, if necessary, etc. **Notes have been added to the plans in this regard.**
2. Callout the new underground service run. **Done.**
3. The leader "Re-Use Water and Sprinkler Services" points to one water service. What is the size? **Noted on plan.** Is there capacity for domestic use and fire suppression in this one service? **There are 2 services, we will work with the water department to confirm adequacy. There will be a net deduction in fixtures with the building conversion, including the addition.**
4. The location of the sewer cleanout should be shown on the plans. **Added to the plan.**

Sheet C4 – Grading Plan

1. What are the details of the proposed heated driveway? **The heated driveway will be serviced by a heated zone from the building HVAC system, therefore this detail will be perfected once the building design goes to construction drawings, after site approval.**
2. Provide details and notes on termination of the existing pipe out of DMH #1657 proposed to be reused for roof drains. **Plans have been updated.**

Sheet C5 – Demolition Plan

1. There is a leader indicating "Sewer Service to Remain" but Sheet C3 indicates it is to be relocated. **Noted to be REMOVED.**
2. The existing drainage pipe that is to be partially removed should be shown and called out to be removed on the plan. **Done.**
3. The plans indicate that the "Gas…Service to be Relocated" but it is not shown elsewhere on the plans. **Gas service will be eliminated.**
4. The limit of demolition should be expanded to include new pipe connection to DMH 1657. **Done.**

Sheet T1 – Turning Template

1. The applicant has provided a turning template for the existing roadway, but none for the proposed site redevelopment. Does the fire department require proof of on-site access? **The Fire Department has not indicated a need to access the site in that way for firefighting.**

Sheet C7 – Lighting Plan

1. The plan should provide lighting calculations (illuminance), fixture type, mounting height, etc. **Once the building layout is determined, the final design will be accomplished, and the information will be provided.**

D2 – Details

1. Provide a detail for trench patch in Badger's Island West. **See Detail H on Sheet D3.**

We have the following comments on the drainage analysis:

1. While the drainage analysis shows that a reduction in impervious surface, and therefore stormwater flows is achieved in the developed condition, we note that neither the existing or proposed piping, structures, trench drains, permeable pavers and other treatment devices are modeled. We note that the existing piping is 12", which is the minimum pipe size allowed by the Ordinances. The capacity of the system in its existing and proposed configuration should be analyzed. **We believe the analysis, at this point, shows the general run-off reduction achieved with the impervious surface area improvements. The analysis will be re-run after the layout is confirmed and stormwater will be routed, and the analysis provided.**
2. In the Executive Summary, the lot size is described as 104,634 +/- square-feet (2.402 acres) and listed as 58,985 square-feet (1.354 acres). **The lot size is an incorrect term in the Executive Summary and should be corrected to say the "Study area of on-site and adjacent flows"… is 104,634 and the "included off-site" associated drainage area is 147,12... The drainage analysis wording will be corrected. The area that is modelled in the analysis is correct.**
3. Below Table 2, the text indicates "A plan sheet detailing the subcatchments and direction of runoff are included in the Appendix." We note that there are two figures (pre and post development) attached to the body of the report. **The reference below the table should be corrected to "The Drainage patterns are shown on the attached Subcatchment Plans".**
4. A component of the stormwater design improvements is the use of a Jellyfish stormwater filter. There is no discussion on the filter, other than its location in the Pre- and Post-Development Drainage section and a mention in the conclusion. A discussion of the purpose and benefits of the practice would be useful. **The April 6 submitted application package included an entire section devoted to information about the Jellyfish system, including how the system works, performance testing results, system configurations, Maine State DEP approval, and system maintenance. The application material proposes that as a part of the development proposal, the applicant is willing to install the Jellyfish Filter system on an existing untreated outfall which drains adjacent property, including the town road.**
5. The proposed subcatchments plan should include CB1 and CB2. **Those are shown as yellow circles on the plan and can be more specifically labelled.**
6. Has the condition of the existing structures (namely DMH #1657) been assessed? What size is DMH #1657? Is there room in the structure for another pipe penetration? **This will be reviewed, and a report issued for final approval, once the layout of the site is confirmed.**
7. For the existing 12"CPP that is proposed to be reused for roof drains, there is a leader indicating "pipe to be removed." What portion of the pipe is to remain? **See Demolition Plan clarification.** How is it removed/terminated at DMH #1657? **This will be reviewed for final approval to determine if replacement of the manhole is required.** What is the proposed connection from the roof drain to the reused section of pipe? **The connection proposed is a tee connection(s). A detail will be added.**
8. DMH2 in the Drainage Structure Schedule on Sheet C4 is missing the invert in for P8. **Added.**
9. CB2 does not have an invert out in the Drainage Structure Schedule on Sheet C4. **This has been shown (number was in the wrong column).**
10. What size are the proposed roof drains? Please provide details. **See Detail on Sheet D5.**

11. The site plans include a permeable paver patio and walkway. Have test pits and/or infiltration tests been completed on the existing soils to assess infiltration capacity? **The sites can be reviewed, and the information provided.** In addition, there are no details provided for the permeable pavers (select materials, piping, etc.) **Detail added to Sheet C2.**
12. The source of the rainfall event amounts should be included. **The rainfall information is attached and will be added to the revised Analysis.**
13. The Inspection & Long-Term Maintenance Plan should indicate that reports are required to be submitted to Code Enforcement Officer by July 1. **The report list the requirement as "annually", we can add the exact date to the revision.**
14. Under the Permeable paver section in the Inspection & Long-Term Maintenance Plan, outlet structures and appurtenances are referenced. Please clarify. **The wording should read "Repair porous installations as necessary to maintain functionality".**
15. The Permeable Paver Long-Term Maintenance Sheet references permeable pavement. **The "pavement" wording will be replaced with "surface".**
16. Has the jellyfish filter been designed in accordance with the specifications in the January 21, 2015, letter from Maine DEP? Are there design calculations or a project specific certification of compliance? **The specific design for this site will be provided after the layout is established.**

We hope that the Board agrees that this project will be a benefit to the community, and the environment. **We hope that the Planning Board can complete the review of the proposed buffer intrusions at the May meeting and take a vote, after public input, on the projects conformance** to **Section 16.3.2.14.E of the Kittery Code.** We look forward to our in-person presentation at the Planning Board meeting. Thank you for your time and attention to this proposal.

Please contact me if you have any questions or concerns regarding this application.

Sincerely,

John R. Chagnon, PE
Ambit Engineering – Haley Ward
CC: Project Team

P:\NH\5010135-Hampshire_Development\3050.72A-Badgers Island W.(35)-JRC\3050.72A Hampshire Development\2022 Site Permitting\Applications\Town of Kittery\Planning Board Letter 4-6-23.docx

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.755 degrees West
Latitude	43.082 degrees North
Elevation	0 feet
Date/Time	Mon, 25 Jul 2022 15:42:48 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.65	2.92	**1yr**	2.35	2.81	3.22	3.94	4.54	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.48	3.20	3.57	**2yr**	2.84	3.43	3.93	4.67	5.32	**2yr**
5yr	0.37	0.58	0.73	0.97	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.14	4.06	4.57	**5yr**	3.59	4.40	5.03	5.93	6.69	**5yr**
10yr	0.41	0.65	0.82	1.11	1.45	1.89	**10yr**	1.25	1.73	2.23	2.89	3.74	4.86	5.52	**10yr**	4.30	5.31	6.07	7.09	7.96	**10yr**
25yr	0.48	0.76	0.97	1.34	1.77	2.34	**25yr**	1.53	2.14	2.78	3.63	4.73	6.16	7.09	**25yr**	5.45	6.81	7.79	9.00	10.03	**25yr**
50yr	0.54	0.86	1.10	1.54	2.07	2.76	**50yr**	1.79	2.53	3.29	4.32	5.65	7.37	8.57	**50yr**	6.52	8.24	9.40	10.79	11.95	**50yr**
100yr	0.60	0.97	1.25	1.77	2.42	3.26	**100yr**	2.09	2.98	3.90	5.15	6.76	8.83	10.36	**100yr**	7.81	9.96	11.35	12.93	14.24	**100yr**
200yr	0.67	1.10	1.43	2.05	2.82	3.83	**200yr**	2.44	3.51	4.61	6.12	8.07	10.58	12.52	**200yr**	9.36	12.04	13.72	15.50	16.97	**200yr**
500yr	0.80	1.31	1.71	2.48	3.48	4.76	**500yr**	3.00	4.38	5.76	7.70	10.20	13.44	16.10	**500yr**	11.90	15.48	17.62	19.72	21.43	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.73	0.88	**1yr**	0.63	0.86	0.93	1.33	1.68	2.23	2.47	**1yr**	1.98	2.38	2.86	3.19	3.89	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.05	3.44	**2yr**	2.70	3.31	3.82	4.54	5.08	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.12	2.73	3.78	4.17	**5yr**	3.34	4.01	4.71	5.52	6.22	**5yr**
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.56	1.80	2.39	3.06	4.36	4.84	**10yr**	3.86	4.65	5.42	6.39	7.17	**10yr**
25yr	0.44	0.67	0.83	1.18	1.56	1.90	**25yr**	1.35	1.86	2.10	2.75	3.53	4.71	5.86	**25yr**	4.17	5.63	6.61	7.75	8.64	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.16	**50yr**	1.52	2.12	2.34	3.07	3.92	5.32	6.75	**50yr**	4.71	6.50	7.67	8.99	9.97	**50yr**
100yr	0.53	0.81	1.01	1.46	2.00	2.47	**100yr**	1.73	2.41	2.62	3.41	4.34	5.98	7.79	**100yr**	5.30	7.49	8.89	10.43	11.50	**100yr**
200yr	0.59	0.89	1.12	1.63	2.27	2.81	**200yr**	1.96	2.75	2.93	3.78	4.78	6.71	8.97	**200yr**	5.93	8.63	10.30	12.13	13.29	**200yr**
500yr	0.68	1.01	1.31	1.90	2.70	3.36	**500yr**	2.33	3.28	3.41	4.31	5.43	7.80	10.82	**500yr**	6.90	10.41	12.52	14.82	16.09	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.20	2.98	3.16	**1yr**	2.63	3.04	3.57	4.37	5.03	**1yr**
2yr	0.34	0.52	0.64	0.86	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.52	3.42	3.70	**2yr**	3.02	3.56	4.09	4.84	5.62	**2yr**
5yr	0.40	0.62	0.76	1.05	1.34	1.62	**5yr**	1.15	1.58	1.88	2.54	3.25	4.33	4.96	**5yr**	3.84	4.77	5.37	6.37	7.15	**5yr**
10yr	0.47	0.72	0.89	1.24	1.61	1.98	**10yr**	1.39	1.93	2.28	3.11	3.96	5.33	6.21	**10yr**	4.72	5.97	6.83	7.84	8.75	**10yr**
25yr	0.58	0.88	1.09	1.56	2.05	2.57	**25yr**	1.77	2.51	2.96	4.07	5.16	7.76	8.35	**25yr**	6.87	8.03	9.17	10.34	11.41	**25yr**
50yr	0.67	1.02	1.27	1.83	2.46	3.13	**50yr**	2.12	3.06	3.60	5.00	6.33	9.71	10.48	**50yr**	8.60	10.08	11.48	12.73	13.97	**50yr**
100yr	0.79	1.19	1.50	2.16	2.96	3.81	**100yr**	2.56	3.73	4.38	6.16	7.78	12.15	13.14	**100yr**	10.75	12.64	14.37	15.71	17.10	**100yr**
200yr	0.92	1.39	1.76	2.55	3.56	4.65	**200yr**	3.07	4.55	5.34	7.59	9.56	15.24	16.50	**200yr**	13.49	15.86	18.02	19.37	20.93	**200yr**
500yr	1.15	1.71	2.20	3.19	4.54	6.04	**500yr**	3.92	5.90	6.94	10.03	12.60	20.59	22.29	**500yr**	18.23	21.44	24.31	25.55	27.36	**500yr**

Powered by ACIS Northeast Regional Climate Center

RESIDENTIAL CONVERSION

35 BADGERS ISLAND WEST
KITTERY, MAINE

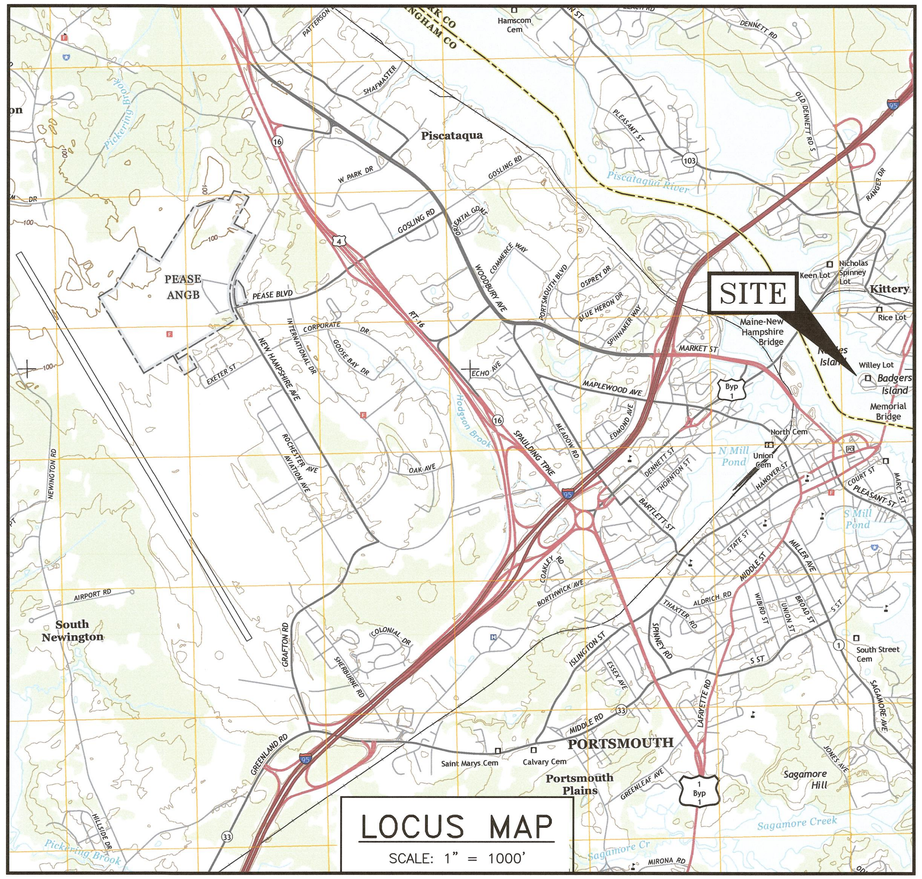
AMENDED SITE PLAN
PRELIMINARY PLAN APPLICATION

OWNER & APPLICANT:
B.I.W. GROUP, LLC
41 INDUSTRIAL DRIVE, UNIT 20
EXETER, N.H. 03833

CIVIL ENGINEER & LAND SURVEYOR:
AMBIT ENGINEERING, INC.
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, N.H. 03801–7114
TEL: (603) 430–9282
FAX: (603) 436–2315

LANDSCAPE ARCHITECT:
WOODBURN & COMPANY
LANDSCAPE ARCHITECTURE
103 KENT PLACE
NEWMARKET, N.H. 03857
TEL: (603) 659–5949

INDEX OF SHEETS



LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
YCRD	YORK COUNTY REGISTRY OF DEEDS
11/21	MAP 11 / LOT 21
	BOUNDARY
	BUILDING SETBACK
MHW	MEAN HIGH WATER LINE
MSL	MEAN SEA LEVEL
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
HAT	MAINE DEP HIGHEST ANNUAL TIDE LINE

EXISTING	PROPOSED	
		UNDERGROUND ELECTRIC
		OVERHEAD ELECTRIC/WIRES
S	S	SEWER LINE
G	G	GAS LINE
D	D	STORM DRAIN
W	W	WATER LINE
	RD	ROOF DRAIN/LINE
100	16	CONTOUR
97x3	20X5	SPOT ELEVATION
○	●	IRON ROD/PIPE FOUND/SET
		EDGE OF PAVEMENT
		WOODS / TREE LINE
		UTILITY POLE (w/ GUY)
GWE		METER (GAS, WATER, ELECTRIC)
TYP.		TYPICAL
LSA		LANDSCAPED AREA
WGV		WATER GATE VALVE
		SIGNS
CPP		CORRUGATED PLASTIC PIPE
PVC		POLYVINYL CHLORIDE PIPE
		CATCH BASIN
		SEWER MANHOLE
		DRAIN MANHOLE
EL.		ELEVATION
FF		FINISHED FLOOR
INV.		INVERT
TBM		TEMPORARY BENCHMARK
HP		HEAT PUMP
AC		AIR CONDITIONER
9		PARKING SPACE COUNT

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CALL TOLL FREE

OWNER:

SIGNATURE _____ DATE _____

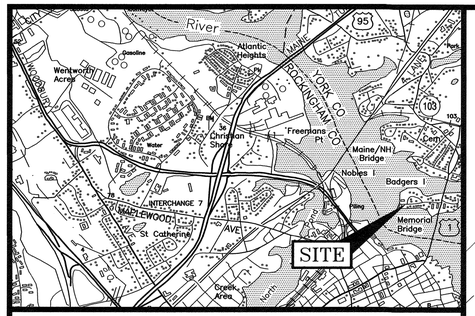
APPROVED BY THE KITTERY PLANNING BOARD

CHAIRMAN _____ DATE _____

AMENDED SITE PLAN
TAX MAP 1, LOT 32
RESIDENTIAL CONVERSION
35 BADGERS ISLAND WEST
KITTERY, MAINE

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

PLAN SET SUBMITTAL DATE: 18 MAY 2023



LOCATION MAP SCALE 1"=2,000'

LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
YCRD	YORK COUNTY REGISTRY OF DEEDS
11/21	MAP 11 / LOT 21
	BOUNDARY
	BUILDING SETBACK
MHW	MEAN HIGH WATER LINE
MSL	MEAN SEA LEVEL
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
HAT	MAINE DEP HIGHEST ANNUAL TIDE LINE
	UNDERGROUND ELECTRIC
	OVERHEAD ELECTRIC/WIRES
S	SEWER LINE
G	GAS LINE
D	STORM DRAIN
W	WATER LINE
100	CONTOUR
97x3	SPOT ELEVATION
○	IRON ROD/PIPE FOUND
●	IRON ROD SET
	EDGE OF PAVEMENT (EP)
	WOODS / TREE LINE
	UTILITY POLE (w/ GUY)
G W E	METER (GAS, WATER, ELECTRIC)
TYP.	TYPICAL
LSA	LANDSCAPED AREA
WGV	WATER GATE VALVE
	SIGNS
CPP	CORRUGATED PLASTIC PIPE
PVC	POLYVINYL CHLORIDE PIPE
	CATCH BASIN
S	SEWER MANHOLE
D	DRAIN MANHOLE

LEGEND (CONTINUED)

EL.	ELEVATION
FF	FINISHED FLOOR
INV.	INVERT
TBM	TEMPORARY BENCHMARK
HP	HEAT PUMP
AC	AIR CONDITIONER

PLAN REFERENCES:

1) BADGERS LANDING CONDOMINIUM STANDARD BOUNDARY SURVEY & CONDOMINIUM SITE PLAN FOR PROPERTY AT 32 BADGERS ISLAND WEST, KITTERY, YORK COUNTY, MAINE CLIENT ISLAND PROPERTIES, LLC PREPARED BY EASTERLY SURVEY, INC. DATED SEPTEMBER 17, 2002, FINAL REVISION DATE SEPTEMBER 30, 2002. Y.C.R.D. PLAN BOOK 581, PAGE 1.

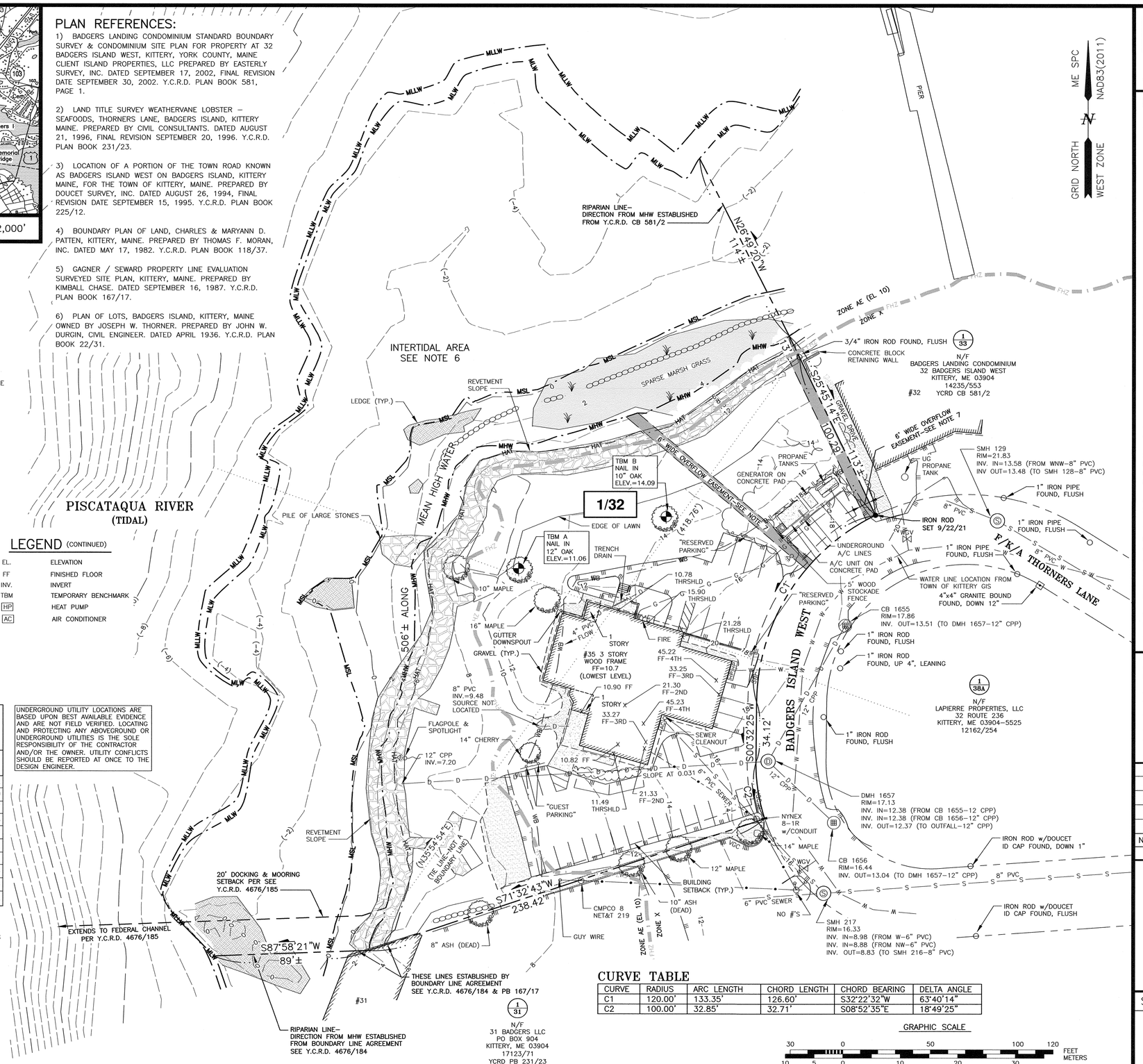
2) LAND TITLE SURVEY WEATHERVANE LOBSTER – SEAFOODS, THORNERS LANE, BADGERS ISLAND, KITTERY MAINE. PREPARED BY CIVIL CONSULTANTS. DATED AUGUST 21, 1996, FINAL REVISION SEPTEMBER 20, 1996. Y.C.R.D. PLAN BOOK 231/23.

3) LOCATION OF A PORTION OF THE TOWN ROAD KNOWN AS BADGERS ISLAND WEST ON BADGERS ISLAND, KITTERY MAINE, FOR THE TOWN OF KITTERY, MAINE. PREPARED BY DOUCET SURVEY, INC. DATED AUGUST 26, 1994, FINAL REVISION DATE SEPTEMBER 15, 1995. Y.C.R.D. PLAN BOOK 225/12.

4) BOUNDARY PLAN OF LAND, CHARLES & MARYANN D. PATTEN, KITTERY, MAINE. PREPARED BY THOMAS F. MORAN, INC. DATED MAY 17, 1982. Y.C.R.D. PLAN BOOK 118/37.

5) GAGNER / SEWARD PROPERTY LINE EVALUATION SURVEYED SITE PLAN, KITTERY, MAINE. PREPARED BY KIMBALL CHASE. DATED SEPTEMBER 16, 1987. Y.C.R.D. PLAN BOOK 167/17.

6) PLAN OF LOTS, BADGERS ISLAND, KITTERY, MAINE OWNED BY JOSEPH W. THORNER. PREPARED BY JOHN W. DURGIN, CIVIL ENGINEER. DATED APRIL 1936. Y.C.R.D. PLAN BOOK 22/31.



CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	120.00'	133.35'	126.60'	S32°22'32"W	63°40'14"
C2	100.00'	32.85'	32.71'	S08°52'35"E	18°49'25"

GRAPHIC SCALE
30 0 50 100 120 FEET
10 5 0 10 20 30 METERS

DEVEGETATED COVERAGE CALCULATION (TO HAT LINE)

STRUCTURE	EXISTING (S.F.)
MAIN STRUCTURE	5,922
PAVEMENT	12,289
GRAVEL AREAS	2,277
RETAINING WALLS	86
CONCRETE PADS/STEPS	957
REVETMENT	5392
TOTAL	26,923
LOT SIZE	54,883
% LOT COVERAGE	49.1%

UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

PURSUANT TO CHAPTER 90 PARTS 1 AND 2 OF THE SURVEY STANDARDS OF PRACTICE AS ADOPTED BY THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS, THE FOLLOWING EXCEPTIONS TO PART 2 ARE NOTED;
A) NO SURVEY REPORT HAS BEEN PREPARED.
B) NO LAND DESCRIPTION HAS BEEN PREPARED.
C) MONUMENTS HAVE NOT BEEN SET.

THIS SURVEY CONFORMS TO THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CHAPTER 90 STANDARDS OF PRACTICE, EFFECTIVE DATE APRIL 1, 2001 EXCEPT AS NOTED ON THIS PLAN.

JOHN R. CHAGNON, PLS #2276 — DATE 5.18.23

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282
WWW.HALEYWARD.COM

NOTES:

1) PARCEL IS SHOWN ON THE TOWN OF KITTERY ASSESSOR'S MAP 1 AS LOT 32.

2) OWNER OF RECORD:
B.I.W. GROUP, LLC
41 INDUSTRIAL DRIVE, UNIT 20
EXETER, NH 03833
18503/331 (FIRST PARCEL)
PLAN BOOK 22/31 (LOTS 14, 15, 16, & 17)

3) A PORTION OF THE PARCEL IS IN A SPECIAL FLOOD HAZARD AREA, ZONE AE (EL 10), AS SHOWN ON PRELIMINARY FIRM PANEL 23031C0709G. REVISED PRELIMINARY 4/14/2017.

4) EXISTING LOT AREA:
58,985± S.F. (TO MEAN HIGH WATER)
1.3541± ACRES (TO MEAN HIGH WATER)

5) PARCEL IS LOCATED IN THE MIXED USE – BADGERS ISLAND (MU–BI) ZONING DISTRICT AND IS SUBJECT TO THE RESOURCE PROTECTION (OZ–RP) AND SHORELAND–WATER BODY / WETLAND PROTECTION AREA (OZ–SL–250') OVERLAY DISTRICTS.

6) DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:		6,000 SF
FRONTAGE:		50 FEET
SETBACKS:	FRONT	5 FEET
	SIDE	10 FEET
	REAR	10 FEET
MAXIMUM BUILDING HEIGHT:		40 FEET
MINIMUM OPEN SPACE:		40%

4) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON ASSESSOR'S MAP 1 LOT 32 IN THE TOWN OF KITTERY.

5) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS. MHW, MSL, MLW, AND MLLW BASED ON NOAA STATION 8419870–SEAVEY ISLAND, PORTSMOUTH HARBOR, ME.

6) AREA BETWEEN MEAN HIGH WATER AND MEAN LOW WATER ARE SUBJECT TO THE RIGHTS OF THE PUBLIC.

7) PARCEL IS SUBJECT TO A 6' WIDE EASEMENT FOR "LAYING AND MAINTAINING AN OVERFLOW PIPE FROM A CEPTIC (sic) TANK ON THE CONVEYED LOT UNDER THE ROADWAY". BENEFITING LOTS 1, 2, 3, 4, AND 5 ON PLAN REFERENCE 6 (NOW ASSESSOR'S MAP 1 LOTS 38 & 38A). SAID EASEMENT WAS GRANTED AS BEING ON LOT 14 BUT ALONG THE COMMON LOT LINE OF 14 & 15 OR COMMON LINE OF 13 & 14, SEE Y.C.R.D. 1301/275. IT IS NOT CLEAR IN WHICH LOCATION THE PIPE WAS CONSTRUCTED.

8) HIGHEST ANNUAL TIDE LINE SHOWN AT ELEVATION 5.8 PER LOCATION SEAVEY ISLAND IN MAINE DEP HIGHEST ANNUAL TIDE (HAT) LEVELS FOR YEAR 2018.

SITE DEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, MAINE

NO.	DESCRIPTION	DATE
3	LEGEND	5/18/23
2	ADD PRELIMINARY FEMA FHZ LINES	2/24/23
1	ISSUED FOR APPROVAL	1/19/23
0	ISSUED FOR COMMENT	8/18/22

REVISIONS

STATE OF MAINE — JOHN R. CHAGNON No. 2276 — PROFESSIONAL LAND SURVEYOR
5.18.23

SCALE 1"=30' AUGUST 2021

EXISTING CONDITIONS PLAN — C1

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32

P:\Kittery\3050.72\3-Hampshire_Development\3050.72A Badgers Island W\20-JRC\3050.72A-Hampshire Development\2022 Site Permitting\Plans & Specs\3050.72A Site 2022.dwg 5/22/2023 2:08:51 PM

DEVEGETATED COVERAGE CALCULATION
(TO HAT LINE)

STRUCTURE	PRE–CONSTRUCTION (S.F.) *	POST–CONSTRUCTION (S.F.)
MAIN STRUCTURE	5,922	13,328
DECK	0	85
PAVEMENT	12,289	2,376
GRAVEL	2,277	0
RETAINING WALLS	86	169
CONCRETE PADS/STEPS/SIDEWALK	957	360
PATIOS/WALKWAYS	0	726
REVETMENT/RIPRAP	5,392	5,392
TOTAL	26,923	22,436
LOT SIZE	54,883	54,883
% DEVEGETATED AREA	49.1%	40.9%

* FROM RECENT APPROVAL. OPEN SPACE: 59%

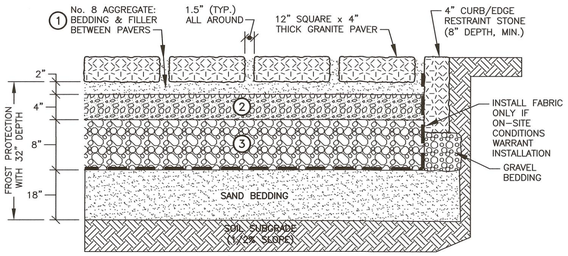
1,944 S.F. SUBTRACTED FROM WETLAND BUFFER

950 S.F. ADDED TO WETLAND BUFFER

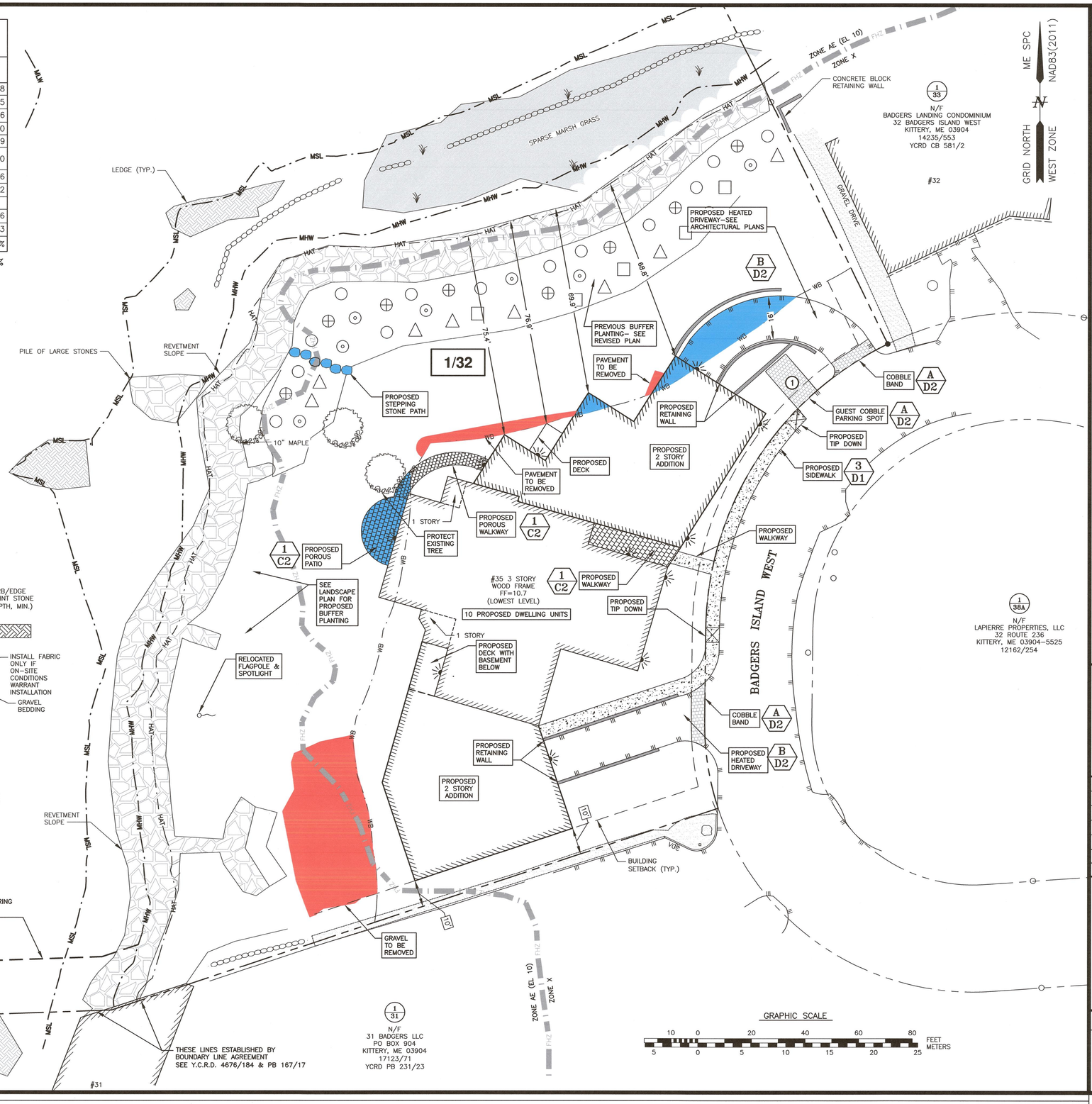
ASTM D 448 GRADATION TABLE

①		②		③	
ASTM No. 8 BEDDING & JOINT FILLER		ASTM No. 57 STONE OPEN GRADED BASE		ASTM No. 2 STONE SUBBASE	
SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)
1/2" (12.5mm)	100	1.5" (37.5mm)	100	3" (75mm)	100
3/8" (9.5mm)	85–100	1" (25mm)	95–100	2.5" (63mm)	90–100
No. 4 (4.75mm)	10–30	1/2" (12.5mm)	25–60	2" (50mm)	35–70
No. 8 (2.36mm)	0–10	No. 4 (4.75mm)	0–10	1.5" 37.5mm)	0–15
No. 16 (1.16mm)	0–5	No. 8 (2.36mm)	0–5	3/4" (19mm)	0–5

NOTES:
1) PAVING SYSTEM BASE DESIGN IS SIMILAR TO BASE REQUIRED FOR THE UNI ECO–STONE PAVER. INSTALLATION SHALL FOLLOW MANUFACTURER'S INSTRUCTIONS FOR PLACEMENT OF BASE MATERIALS.
2) ALL STONE SHALL BE ANGULAR, WITH 90% FRACTURED FACES. STONE SHALL BE WASHED WITH LESS THAN 1% PASSING THE 200 SIEVE.
3) CONTRACTOR SHALL SUBMIT SIEVE ANALYSIS FOR EACH COURSE MATERIAL TO PROJECT ENGINEER FOR APPROVAL PRIOR TO PLACEMENT.



1/C2 POROUS PATIO/WALKWAY DETAIL
NTS



AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282
WWW.HALEYWARD.COM

NOTES:

1) PARCEL IS SHOWN ON THE TOWN OF KITTERY ASSESSOR'S MAP 1 AS LOT 32.

2) OWNER OF RECORD:
B.I.W. GROUP, LLC
41 INDUSTRIAL DRIVE, UNIT 20
EXETER, NH 03833
18503/331 (FIRST PARCEL)
PLAN BOOK 22/31 (LOTS 14, 15, 16, & 17)

3) A PORTION OF THE PARCEL IS IN A SPECIAL FLOOD HAZARD AREA, ZONE AE (EL 10), AS SHOWN ON PRELIMINARY FIRM PANEL 23031C0709G. REVISED PRELIMINARY 4/14/2017.

4) EXISTING LOT AREA:
58,985± S.F. (TO MEAN HIGH WATER)
1.3541± ACRES (TO MEAN HIGH WATER)

5) PARCEL IS LOCATED IN THE MIXED USE – BADGERS ISLAND (MU–BI) ZONING DISTRICT AND IS SUBJECT TO THE RESOURCE PROTECTION (OZ–RP) AND SHORELAND–WATER BODY / WETLAND PROTECTION AREA (OZ–SL–250') OVERLAY DISTRICTS.

6) DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:		6,000 SF
FRONTAGE:		50 FEET
SETBACKS:	FRONT	5 FEET
	SIDE	10 FEET
	REAR	10 FEET
MAXIMUM BUILDING HEIGHT:		40 FEET
MINIMUM OPEN SPACE:		40%

4) THE PURPOSE OF THIS PLAN IS TO SHOW A PROPOSED BUILDING EXPANSION CONCEPT ON ASSESSOR'S MAP 1 LOT 32 IN THE TOWN OF KITTERY.

5) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS. MHW, MSL, MLW, AND MLLW BASED ON NOAA STATION 8419870–SEAVEY ISLAND, PORTSMOUTH HARBOR, ME.

6) AREA BETWEEN MEAN HIGH WATER AND MEAN LOW WATER ARE SUBJECT TO THE RIGHTS OF THE PUBLIC.

7) HIGHEST ANNUAL TIDE LINE SHOWN AT ELEVATION 5.8 PER LOCATION SEAVEY ISLAND IN MAINE DEP HIGHEST ANNUAL TIDE (HAT) LEVELS FOR YEAR 2018.

8) INTERIOR TRASH COLLECTION.

SITE DEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, MAINE

NO.	DESCRIPTION	DATE
5	DETAIL 1/C2	5/18/23
4	TREE REPLACEMENT	5/15/23
3	BUILDING	4/6/23
2	ADD PRELIMINARY FEMA FHZ LINES	2/24/23
1	ISSUED FOR APPROVAL	1/19/23

REVISIONS

STATE OF MAINE JOHN R. CHAGNON NO. 13950 LICENSED PROFESSIONAL ENGINEER

STATE OF MAINE JOHN R. CHAGNON NO. 2278 PROFESSIONAL LAND SURVEYOR

5/8-23

SCALE 1"=20' AUGUST 2022

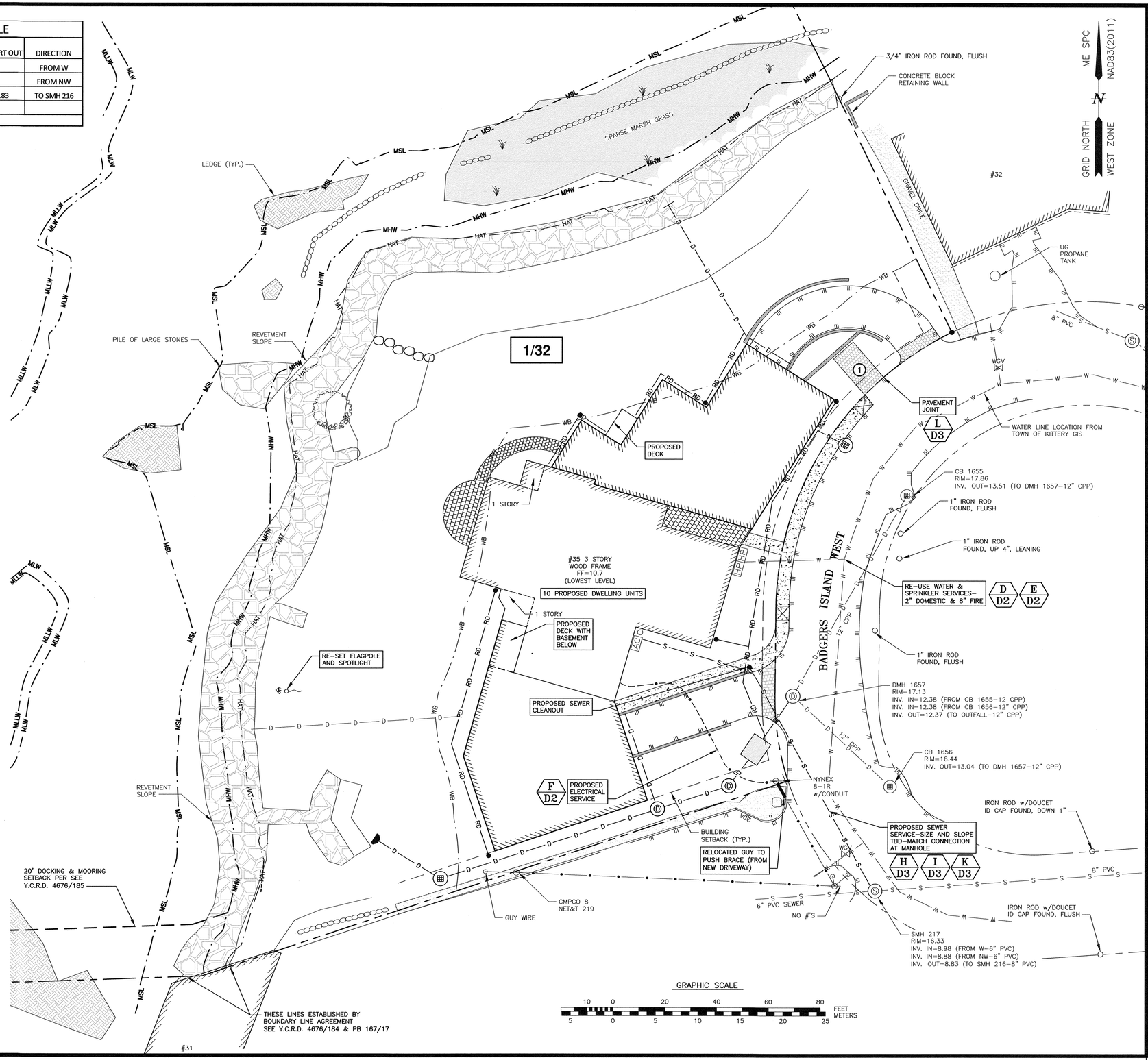
SHORELAND DEVELOPMENT PLAN

C2

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32

SEWER STRUCTURE SCHEDULE

STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT	DIRECTION
SMH 217	EX	16.33	6" PVC	8.98		FROM W
			6" PVC	8.88		FROM NW
			8" PVC		8.83	TO SMH 216



AMBIT ENGINEERING, INC.
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WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE ''MAINE EROSION AND SEDIMENT CONTROL BMP's'' PUBLISHED BY THE MAINE D.E.P. IN 2016.

4) CONTRACTOR SHALL FIELD VERIFY THE DEPTH OF EXISTING UTILITIES AND COORDINATE WITH THE ENGINEER PRIOR TO CONSTRUCTION OF THE PROPOSED UTILITIES.

5) ALL UTILITIES SHOWN ARE TO REMAIN UNLESS NOTED OTHERWISE.

6) COORDINATE UTILITY CONNECTIONS AND INSTALLATIONS WITH RESPECTIVE UTILITY COMPANIES AND SERVICE PROVIDERS.

7) CONTRACTOR SHALL MAINTAIN EXISTING UTILITY SERVICES TO ADJACENT PROPERTIES DURING CONSTRUCTION. PROVIDE PROPER NOTIFICATION OF ANY SERVICE INTERRUPTIONS.

8) ALL WATER, SEWER, AND ROADWAY WORK TO BE COMPLETED TO KITTERY WATER DISTRICT AND TOWN OF KITTERY STANDARDS. WORK IN BADGER'S ISLAND WEST SUBJECT TO TOWN MORATORIUM.

SITE DEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, MAINE

NO.	DESCRIPTION	DATE
3	SEWER LINES, DETAIL H	5/18/23
2	BUILDING	4/6/23
1	ISSUED FOR APPROVAL	1/19/23
0	ISSUED FOR COMMENT	8/18/22

REVISIONS

STATE OF MAINE JOHN R. CHAGNON No. 9550 LICENSED PROFESSIONAL ENGINEER

5.18.23

SCALE 1"=20' AUGUST 2022

UTILITY PLAN C3

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32

P:\NH\50\19\19-Hampshire_Development\3050.72A-Badgers Island W (30)-BC\3050.72A Hampshire Development\2023 Site Permitting\Plans & Specs\Site\3050_72A Site 2022.dwg, 5/22/2023 1:57:13 PM

DRAINAGE STRUCTURE SCHEDULE

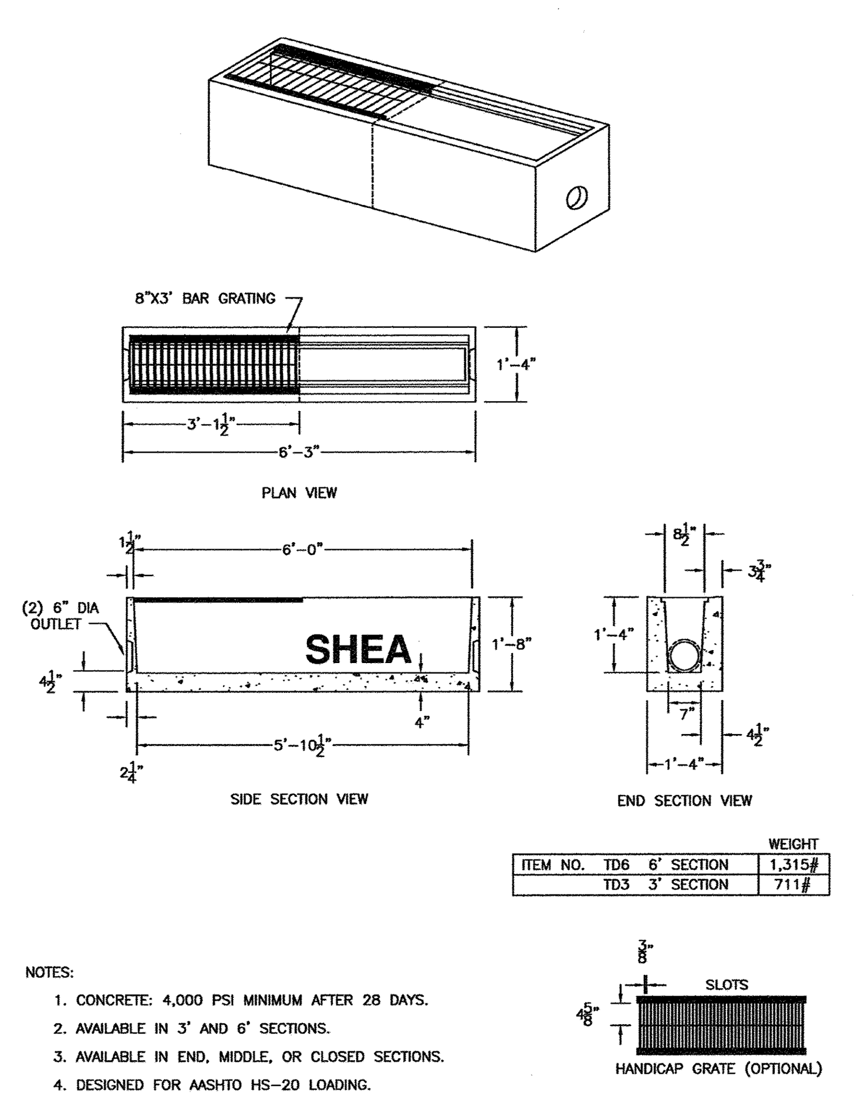
STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT	DIRECTION
DMH 1657	EX	17.13	18" CPP	12.38	12.37	W
				12.38		
TD 1	PROP	12.50	6" PVC	11.37	11.17	
TD 2	PROP	11.5	6" PVC	10.17	9.97	
JF FILTER	PROP	18.0	18" CPP	12.23	11.00	S
DMH 1	PROP	16.0	18" CPP	10.91	10.81	SW
DMH 2	PROP	13.0	18" CPP	10.07	9.97	SW
DMH 2	PROP	13.0	6" TRENCH	10.7	9.97	NW
CB 1	PROP	9.9	18" CPP	7.63	7.53	NW
CB 2	PROP	16.8	12" CPP		13.63	NW

PIPE SCHEDULE

PIPE #	PIPE SIZE	LENGTH	SLOPE
P0	18"	19'	0.0074
P1	18"	27'	0.01
P2	18"	24'	0.032
P3	6"	20'	0.01
P4	18"	83'	0.028
P5	18"	25'	0.004
P6	12"	20'	0.01
P7	12"	56'	0.004
P8	6"	20'	0.01
P9	12"	10'	0.01

*ALL PIPE TO BE HDPE

**P3 AND P6 ARE STRIP DRAINS



SHEA PRODUCT ID: TD3/TD6
TRENCH DRAIN 8"X16"
WEIGHT (LBS): 711#/1,315#

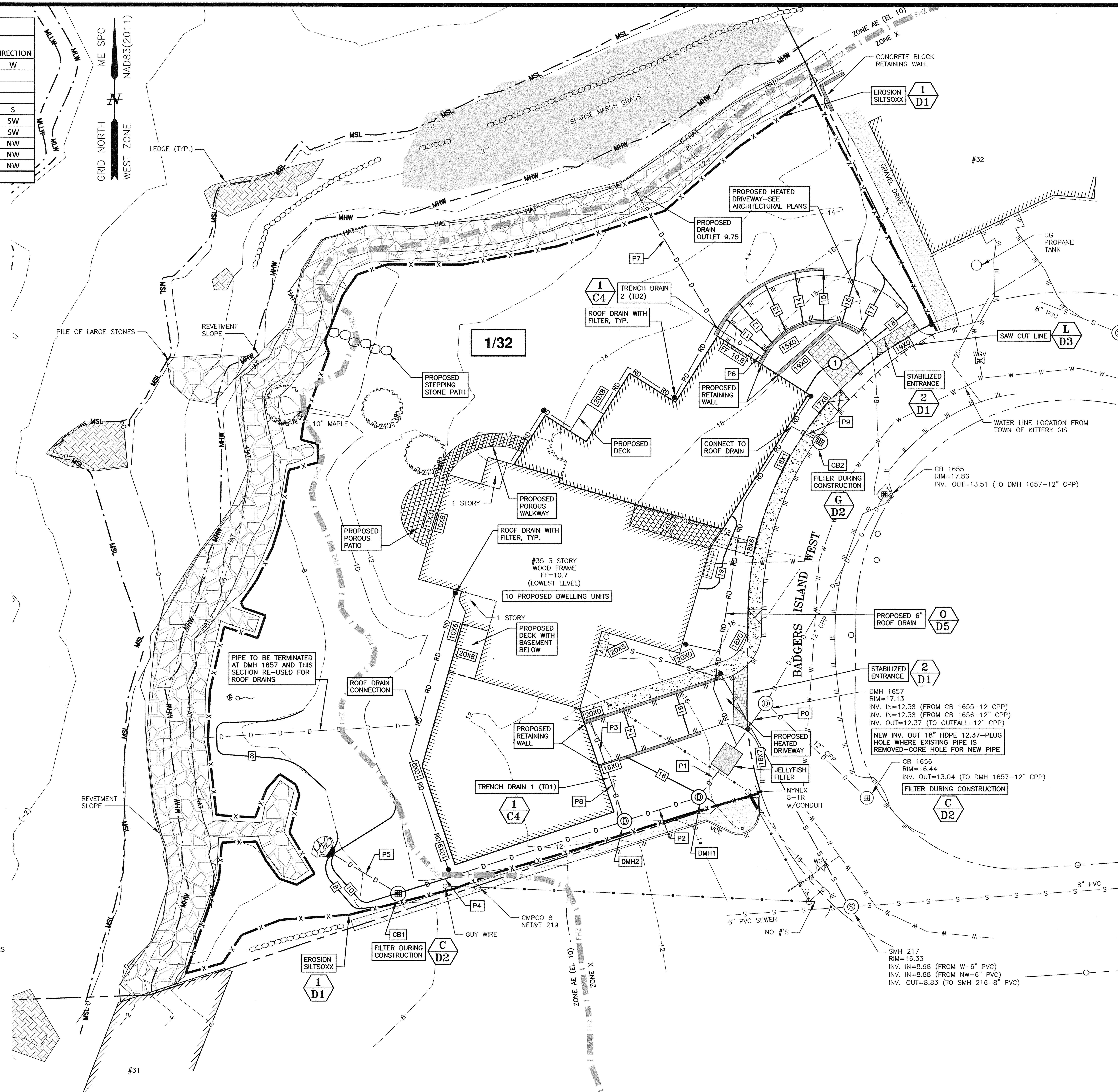
1 / C4 STRIP DRAIN

NTS

GRAPHIC SCALE

10 0 20 40 60 80 FEET

5 0 5 10 15 20 25 METERS



AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

WWW.HALEYWARD.COM

200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

4) TOTAL PROJECT DISTURBED AREA 41,535 S.F.

5) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.

SITE DEVELOPMENT 35 BADGERS ISLAND WEST KITTERY, MAINE

NO.	DESCRIPTION	DATE
2	SEWER & DRAINAGE PIPES	5/18/23
1	BUILDING, DRAINAGE	4/6/23
0	ISSUED FOR COMMENT	1/19/23

REVISIONS

STATE OF MAINE JOHN R. CHAGNON No. 3050 LICENSED PROFESSIONAL ENGINEER

5-18-23

SCALE 1"=20' AUGUST 2022

GRADING PLAN

C4

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32

"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

JOHN R. CHAGNON, LLS DATE

DEMOLITION NOTES:

A) THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE DESIGNER. IT IS THE CONTRACTORS' RESPONSIBILITY TO LOCATE UTILITIES AND ANTICIPATE CONFLICTS. CONTRACTOR SHALL REPAIR EXISTING UTILITIES DAMAGED BY THEIR WORK AND RELOCATE EXISTING UTILITIES THAT ARE REQUIRED TO BE RELOCATED PRIOR TO COMMENCING ANY WORK IN THE IMPACTED AREA OF THE PROJECT.

B) ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTORS UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES. THE CONTRACTOR SHALL COORDINATE REMOVAL, RELOCATION, DISPOSAL, OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.

C) ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO THE ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

D) THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES AND CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.

E) SAWCUT AND REMOVE PAVEMENT ONE FOOT OFF PROPOSED EDGE OF PAVEMENT TRENCH IN AREAS WHERE PAVEMENT IS TO BE REMOVED.

F) IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL THE PERMIT APPROVALS.

G) THE CONTRACTOR SHALL OBTAIN AND PAY FOR ADDITIONAL CONSTRUCTION PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR ANY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK.

H) THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, CONCRETE, UTILITIES, VEGETATION, PAVEMENT, AND CONTAMINATED SOIL WITHIN THE WORK LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ANY EXISTING DOMESTIC / IRRIGATION SERVICE WELLS IN THE PROJECT AREA IDENTIFIED DURING THE CONSTRUCTION AND NOT CALLED OUT ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER FOR PROPER CAPPING / RE-USE.

I) ALL WORK WITHIN THE TOWN OF KITTERY RIGHT OF WAY SHALL BE COORDINATED WITH THE TOWN OF KITTERY DEPARTMENT OF PUBLIC WORKS (DPW).

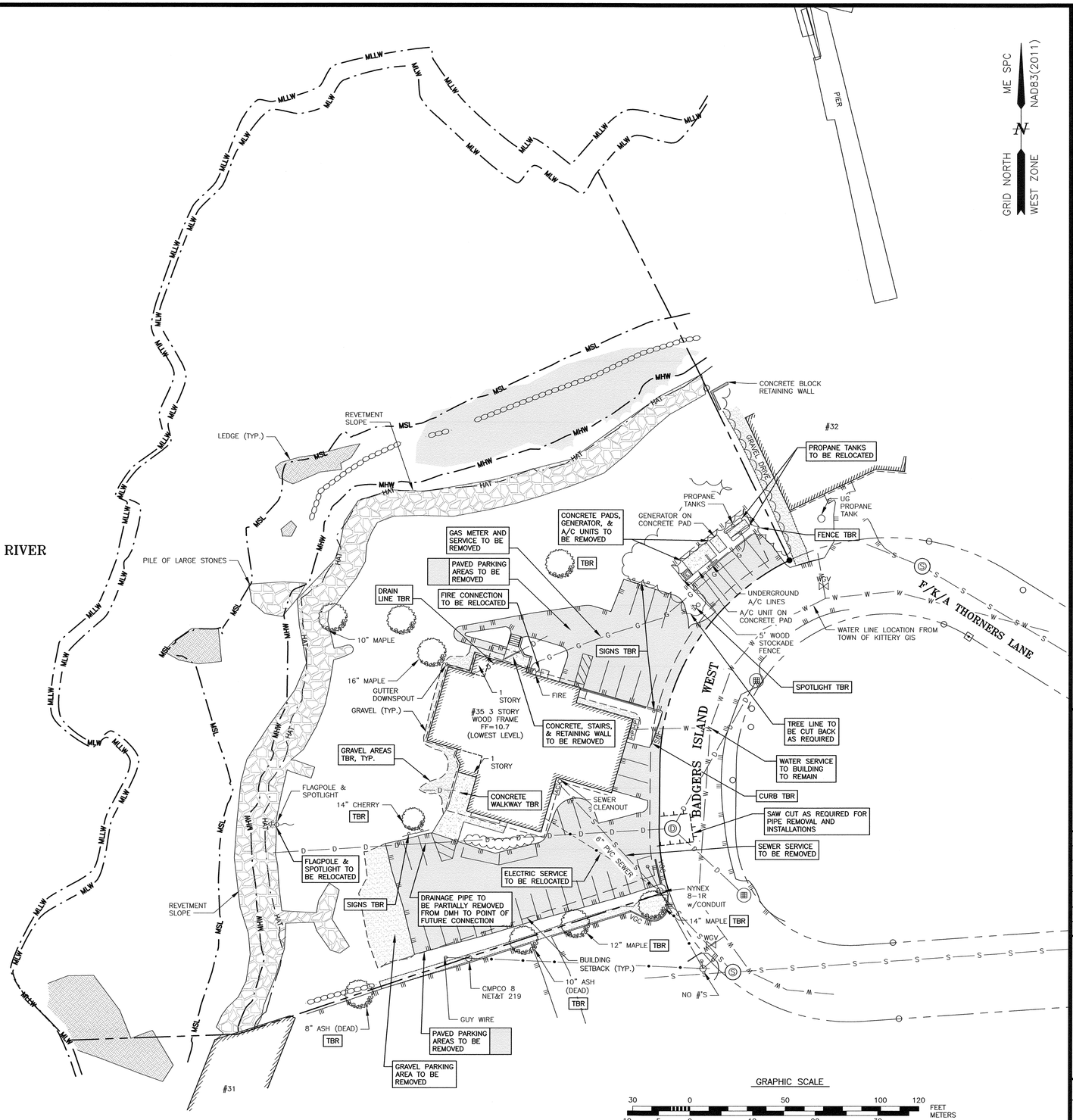
J) REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF-SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

K) CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED, THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR TO REPLACE THEM.

L) PROVIDE INLET PROTECTION BARRIERS AT ALL CATCH BASINS WITHIN CONSTRUCTION LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT. INLET PROTECTION BARRIERS SHALL BE HIGH FLOW SILT SACK BY ACF ENVIRONMENTAL OR APPROVED EQUAL. INSPECT BARRIERS WEEKLY AND AFTER EACH RAIN OF 0.25 INCHES OR GREATER. CONTRACTOR SHALL COMPLETE A MAINTENANCE INSPECTION REPORT AFTER EACH INSPECTION. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE OFTEN IF WARRANTED OR FABRIC BECOMES CLOGGED. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.

M) THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY AND SAFELY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.

N) ANY CONTAMINATED MATERIAL REMOVED DURING THE COURSE OF THE WORK WILL REQUIRE HANDLING IN ACCORDANCE WITH MEDEP REGULATIONS. CONTRACTOR SHALL HAVE A HEALTH AND SAFETY PLAN IN PLACE, AND COMPLY WITH ALL APPLICABLE PERMITS, APPROVALS, AUTHORIZATIONS, AND REGULATIONS



AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282
WWW.HALEYWARD.COM

NOTES:

A) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

B) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

C) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2014.

SITE DEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, MAINE

NO.	DESCRIPTION	DATE
2	SEWER & DRAINAGE LINES	5/18/23
1	14" CHERRY TBR	5/15/23
0	ISSUED FOR APPROVAL	1/19/23

REVISIONS

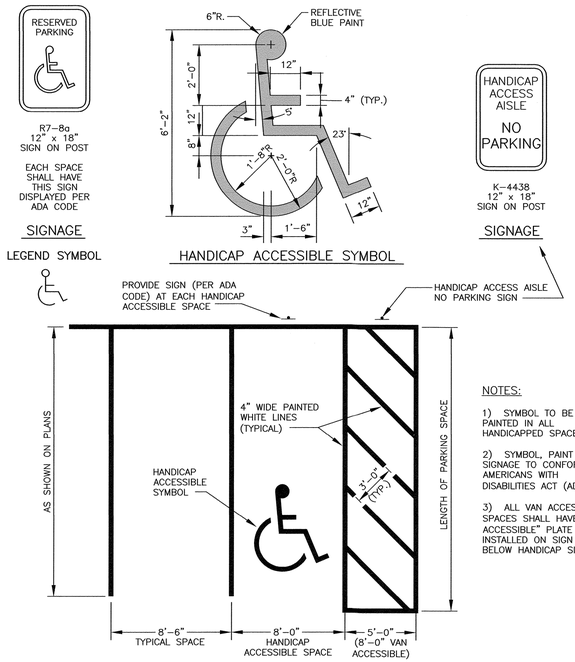
STATE OF MAINE
JOHN R. CHIARONI
No. 9350
LICENSED
PROFESSIONAL ENGINEER
5.18.23

SCALE 1"=30' AUGUST 2021

DEMOLITION PLAN C5

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32

P:\NH\3050.72 - Hampshire Development\2050.72A Badgers Island W (30)-JRC\3050.72A Hampshire Development 2022 Site Permitting\Plans & Specs\Site\3050_72A Site 2022.dwg 5/23/2023 9:05:51 AM



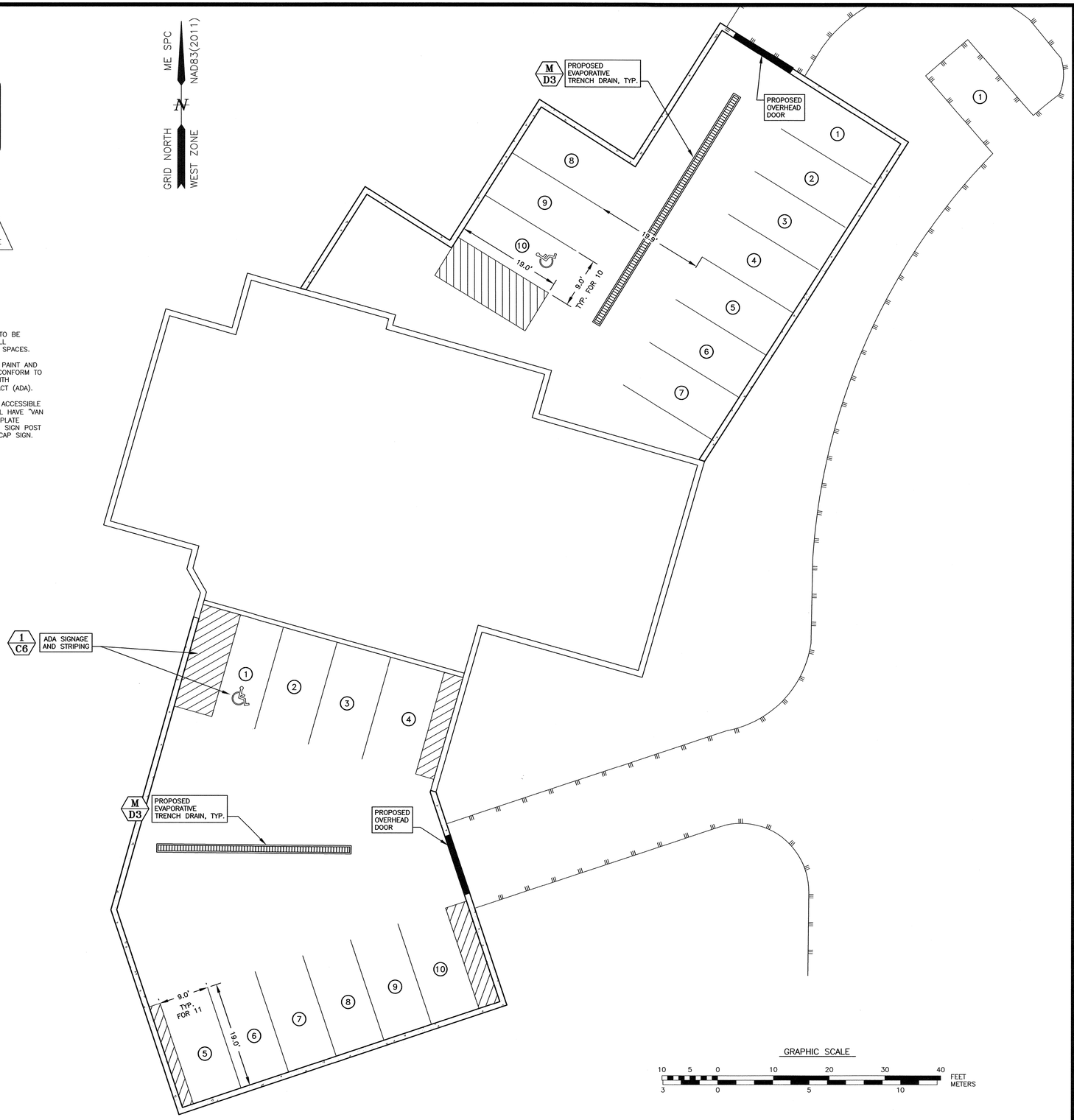
NOTES:

1) SYMBOL TO BE PAINTED IN ALL HANDICAPPED SPACES.

2) SYMBOL, PAINT AND SIGNAGE TO CONFORM TO AMERICANS WITH DISABILITIES ACT (ADA).

3) ALL VAN ACCESSIBLE SPACES SHALL HAVE "VAN ACCESSIBLE" PLATE INSTALLED ON SIGN POST BELOW HANDICAP SIGN.

1 / C6 HANDICAP PARKING DETAIL
NTS



NOTES:

1) PARCEL IS SHOWN ON THE TOWN OF KITTERY ASSESSOR'S MAP 1 AS LOT 32.

2) OWNER OF RECORD:
B.I.W. GROUP, LLC
41 INDUSTRIAL DRIVE, UNIT 20
EXETER, NH 03833
18503/331 (FIRST PARCEL)
PLAN BOOK 22/31 (LOTS 14, 15, 16, & 17)

3) THE PURPOSE OF THIS PLAN IS TO SHOW THE PARKING FOR THE PROPOSED SITE DEVELOPMENT ON ASSESSOR'S MAP 1 LOT 32 IN THE TOWN OF KITTERY.

4) REQUIRED PARKING:

TOTAL REQUIRED: 2 VEHICLES PER DWELLING UNIT
2X10=20 SPACES
TOTAL PROVIDED: 20 SPACES (2 ADA)
PLUS 1 OUTSIDE GUEST SPACE

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.436.2315

SITE DEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, MAINE

NO.	DESCRIPTION	DATE
1	BUILDING	4/6/23
0	ISSUED FOR APPROVAL	1/19/23

REVISIONS

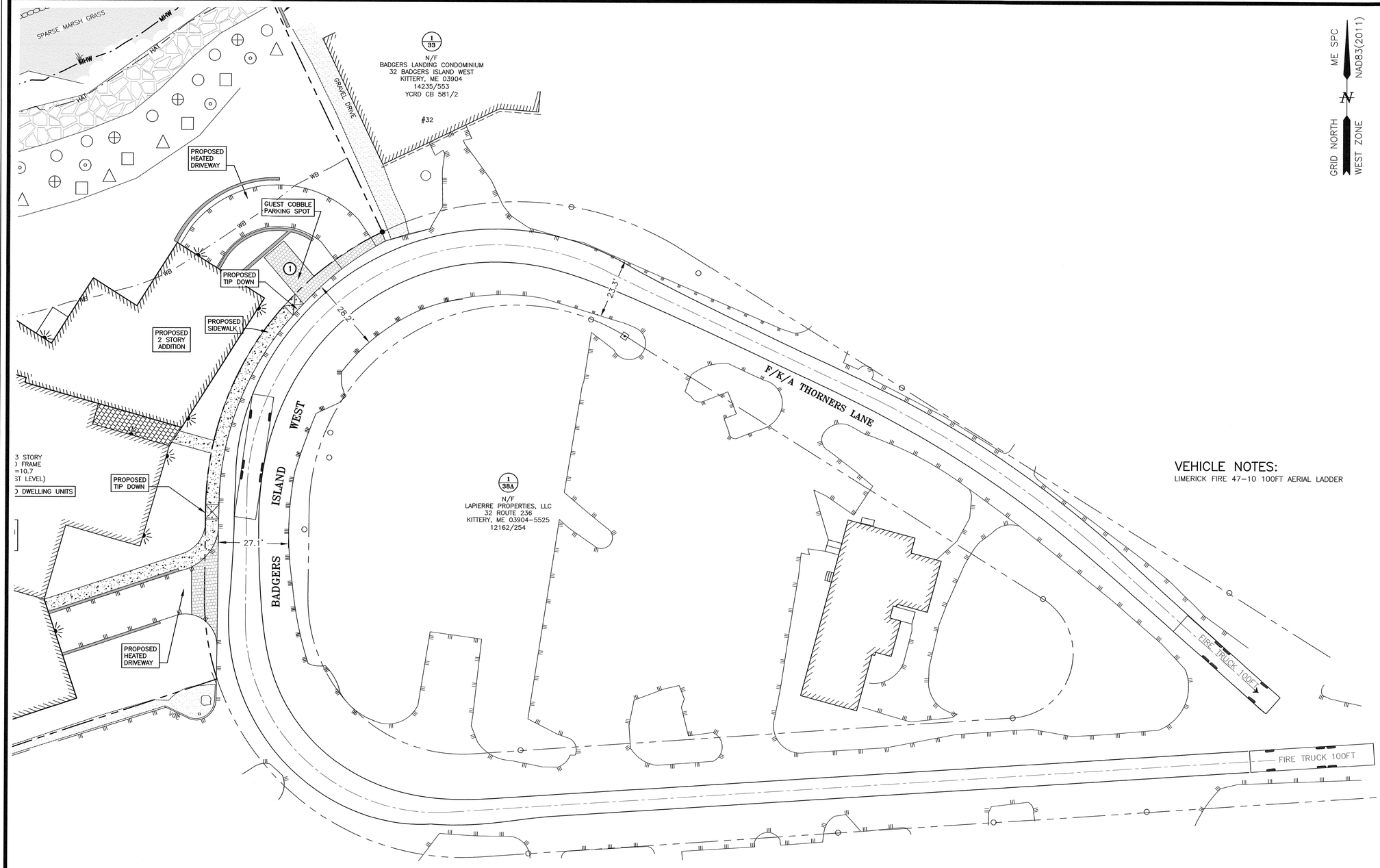
STATE OF MAINE
JOHN R. CHAGNON
NO. 6950
LICENSED PROFESSIONAL ENGINEER
4.6.23

SCALE 1"=10' AUGUST 2022

PARKING PLAN

C6

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32



VEHICLE NOTES:

LIMERICK FIRE 47-10 100FT AERIAL LADDER

GRAPHIC SCALE

10 0 20 40 60 80 FEET
5 0 5 10 15 20 25 METERS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.436.2315

WWW.HALEYWARD.COM

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

SITE DEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, MAINE

NO.	DESCRIPTION	DATE
1	BUILDING	4/6/23
0	ISSUED FOR COMMENT	1/19/23

REVISIONS

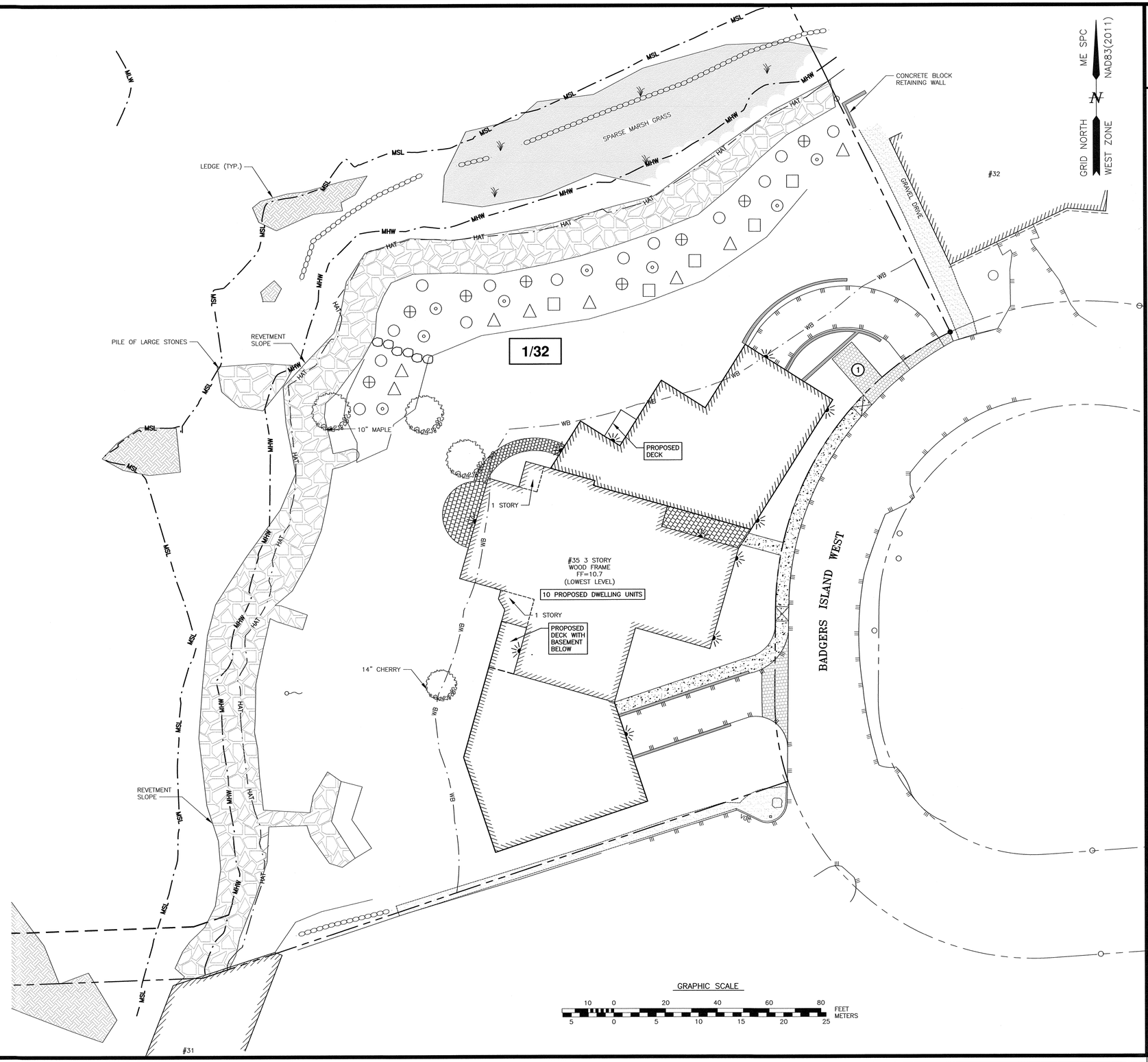
STATE OF MAINE
JOHN R CHRISTON
No. 9350
LICENSED
PROFESSIONAL ENGINEER

4.6.23

SCALE 1"=20' AUGUST 2022

TURNING TEMPLATE PLAN T1

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32



AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.436.2315

WWW.HALEYWARD.COM

NOTES:

1) PARCEL IS SHOWN ON THE TOWN OF KITTERY ASSESSOR'S MAP 1 AS LOT 32.

2) OWNER OF RECORD:
B.I.W. GROUP, LLC
41 INDUSTRIAL DRIVE, UNIT 20
EXETER, NH 03833
18503/331 (FIRST PARCEL)
PLAN BOOK 22/31 (LOTS 14, 15, 16, & 17)

3) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED LIGHTING ON THE TOWN OF KITTERY ASSESSOR'S MAP 1 AS LOT 32.

SITE DEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, MAINE

NO.	DESCRIPTION	DATE
1	BUILDING	4/6/23
0	ISSUED FOR COMMENT	1/19/23

REVISIONS

SCALE 1"=20' AUGUST 2022

LIGHTING PLAN

C7

FB 423 PG 1 3050.72 TAX MAP 1 LOT 32

EROSION CONTROL NOTES

CONSTRUCTION SEQUENCE

DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE, AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.

INSTALL PERIMETER CONTROLS, i.e., SILT FENCING OR SILTSOXX AROUND THE LIMITS OF DISTURBANCE BEFORE ANY EARTH MOVING OPERATIONS. THE USE OF HAY BALES IS NOT ALLOWED.

CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.

PERFORM CLEARING & GRUBBING

CUT AND GRUB ALL TREES, SHRUBS, SAPLINGS, BRUSH, VINES AND REMOVE OTHER DEBRIS AND RUBBISH AS REQUIRED.

REMOVE PAVEMENT AS NEEDED.

BULLDOZE TOPSOIL INTO STOCKPILES, AND CIRCLE WITH SILT FENCING OR SILTSOXX. IF EROSION IS EXCESSIVE, THEN COVER WITH MULCH.

ROUGH GRADE SITE. IN LANDSCAPED AREAS OUT OF THE WAY OF SUBSEQUENT CONSTRUCTION ACTIVITY, INSTALL TOPSOIL, MULCH, SEED AND FERTILIZE. STABILIZE PER DETAILS.

CONSTRUCT FOUNDATIONS.

LAYOUT AND INSTALL ALL BURIED UTILITIES AND SERVICES TO THE PROPOSED BUILDING FOUNDATIONS. CAP AND MARK TERMINATIONS OR LOG SWING TIES.

CONSTRUCT BUILDING FRAMES.

FINISH GRADE SITE, DRIVEWAY & PARKING SUBBASE GRAVEL IN TWO, COMPACTED LIFTS. PROVIDE TEMPORARY EROSION PROTECTION TO DITCHES AND SWALES IN THE FORM OF MULCHING, JUTE MESH OR DITCH DAMS. CONSTRUCT BINDER COURSE.

BUILDING EXTERIOR WORK & LIGHT FIXTURES.

AFTER BUILDING IS COMPLETED FINISH ALL REMAINING LANDSCAPED WORK.

CONSTRUCT ASPHALT WEARING COURSE.

REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

GENERAL CONSTRUCTION NOTES

THE EROSION CONTROL PROCEDURES SHALL CONFORM TO "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

- BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
- A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
- A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR,
- EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

DUST CONTROL: IF TEMPORARY STABILIZATION PRACTICES, SUCH AS TEMPORARY VEGETATION AND MULCHING, DO NOT ADEQUATELY REDUCE DUST GENERATION, APPLICATION OF WATER OR CALCIUM CHLORIDE SHALL BE APPLIED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM OF 0.5" OR GREATER. ALL DAMAGED SILT FENCES SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

AVOID THE USE OF FUTURE OPEN SPACES (LOAM AND SEED AREAS) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ACCESS DRIVES AND PARKING AREAS.

TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS. CONSTRUCT SILT FENCE AROUND TOPSOIL STOCKPILE.

AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. STUMPS SHALL BE DISPOSED BY GRINDING OR FILL IN AN APPROVED FACILITY.

ALL FILLS SHALL BE PLACED AND COMPACTED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.

ALL FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8 INCHES IN THICKNESS UNLESS OTHERWISE NOTED.

FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIAL SHALL NOT BE INCORPORATED INTO FILLS.

FILL MATERIAL SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.

DISTURBED AREAS SHALL BE SEEDED WITHIN 72 HOURS FOLLOWING FINISHED GRADING.

AT NO TIME SHALL ANY DISTURBED AREA REMAIN UNSTABILIZED FOR LONGER THAN 72 HOURS. ALL AREAS WHERE CONSTRUCTION IS NOT COMPLETE WITHIN THIRTY DAYS OF THE INITIAL DISTURBANCE SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

VEGETATIVE PRACTICE

FOR PERMANENT MEASURES AND PLANTINGS:

LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE.

FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 500 POUNDS PER ACRE OF 10-20-20 FERTILIZER.

SEED SHALL BE SOWN AT THE RATES SHOWN IN THE TABLE BELOW. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE, AND SHALL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.

A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE:

GENERAL COVER	PROPORTION	SEEDING RATE
CREEPING RED FESCUE	50%	100 LBS/ACRE
KENTUCKY BLUEGRASS	50%	

SLOPE SEED (USED ON ALL SLOPES GREATER THAN OR EQUAL TO 3:1)

CREEPING RED FESCUE	42%	
TALL FESCUE	42%	48 LBS/ACRE
BIRDSFOOT TREFOIL	16%	

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PROTECTION OF DISTURBED AREAS:
MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:
PERENNIAL RYE: 0.7 LBS/1,000 S.F.
MULCH: 1.5 TONS/ACRE

MAINTENANCE AND PROTECTION

THE CONTRACTOR SHALL MAINTAIN ALL LOAM & SEED AREAS UNTIL FINAL ACCEPTANCE AT THE COMPLETION OF THE CONTRACT. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, REMOVAL OF STONES AND OTHER FOREIGN OBJECTS OVER 1/2 INCHES IN DIAMETER WHICH MAY APPEAR AND THE FIRST TWO (2) CUTTINGS OF GRASS NO CLOSER THEN TEN (10) DAYS APART. THE FIRST CUTTING SHALL BE ACCOMPLISHED WHEN THE GRASS IS FROM 2 1/2 TO 3 INCHES HIGH. ALL BARE AND DEAD SPOTS WHICH BECOME APPARENT SHALL BE PROPERLY PREPARED, LIMED AND FERTILIZED, AND RESEEDED BY THE CONTRACTOR AT HIS EXPENSE AS MANY TIMES AS NECESSARY TO SECURE GOOD GROWTH. THE ENTIRE AREA SHALL BE MAINTAINED, WATERED AND CUT UNTIL ACCEPTANCE OF THE LAWN BY THE OWNER'S REPRESENTATIVE.

THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT IS DEVELOPING.

TO BE ACCEPTABLE, SEEDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.

SEEDED AREAS WILL BE FERTILIZED AND RESEEDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT.

THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATION IS ESTABLISHED.

THE SILT FENCE BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

SILT FENCING SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE REMOVAL SHALL BE PERMANENTLY SEEDED.

WINTER NOTES

ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL.

INSPECTION AND MAINTENANCE PLAN

INTRODUCTION

THE INTENT OF THIS IS TO PROVIDE HAMPSHIRE DEVELOPMENT A LIST OF PROCEDURES THAT DOCUMENT THE INSPECTION AND MAINTENANCE REQUIREMENTS OF THE STORMWATER MANAGEMENT SYSTEM FOR THIS DEVELOPMENT. SPECIFICALLY, THE PROPOSED CONSTRUCTION DRAINAGE AND ASSOCIATED STRUCTURES ON THE PROJECT SITE (COLLECTIVELY REFERRED TO AS THE "STORMWATER MANAGEMENT SYSTEM")

THE FOLLOWING INSPECTION AND MAINTENANCE PROGRAM IS NECESSARY TO KEEP THE STORMWATER MANAGEMENT SYSTEM FUNCTIONING PROPERLY. THESE MEASURES WILL ALSO HELP MINIMIZE POTENTIAL ENVIRONMENTAL IMPACTS. BY FOLLOWING THE ENCLOSED PROCEDURES, THE OWNER WILL BE ABLE TO MAINTAIN THE FUNCTIONAL DESIGN OF THE STORMWATER MANAGEMENT SYSTEM AND MAXIMIZED ITS ABILITY TO REMOVE SEDIMENT AND OTHER CONTAMINANTS FROM THE SITE GENERATED STORMWATER RUNOFF.

STORMWATER MANAGEMENT SYSTEM COMPONENTS

THE STORMWATER MANAGEMENT SYSTEM IS DESIGNED TO MITIGATE BOTH THE QUANTITY AND QUALITY OF SITE-GENERATED RUNOFF. AS THE RESULT, THE DESIGN INCLUDES THE FOLLOWING ELEMENTS:

NON-STRUCTURAL BMP'S

NON-STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) INCLUDE TEMPORARY AND PERMANENT MEASURES THAT TYPICALLY REQUIRE LESS LABOR AND CAPITAL INPUTS AND ARE INTENDED TO PROVIDE PROTECTION AGAINST EROSION OF SOILS. EXAMPLES OF NON-STRUCTURAL BMP'S ON THIS PROJECT INCLUDE BUT ARE NOT LIMITED TO: TEMPORARY AND PERMANENT MULCHING, TEMPORARY AND PERMANENT GRASS COVER, TREES, SHRUBS AND GROUND COVERS, MISCELLANEOUS LANDSCAPE PLANTINGS, DUST CONTROL, TREE PROTECTION, TOPSOILING, SEDIMENT BARRIERS, AND DURING CONSTRUCTION, STABILIZED CONSTRUCTION ENTRANCES AND CATCH BASIN BASKETS. IN THIS SITE TOTAL IMPERVIOUS AREA IS REDUCED.

STRUCTURAL BMP'S

STRUCTURAL BMP'S REQUIRE MORE SPECIALIZED PERSONNEL TO INSTALL. EXAMPLES ON THE PROJECT INCLUDE BUT ARE NOT LIMITED TO: STORM DRAINS, THE FILTRATION BASIN, THE JELLYFISH FILTER, AND ASSOCIATED OUTLET CONTROL STRUCTURES.

INSPECTION AND MAINTENANCE REQUIREMENTS

THE FOLLOWING SUMMARIZES THE INSPECTION AND MAINTENANCE REQUIREMENTS FOR THE VARIOUS BMP'S THAT MAY BE FOUND ON THIS PROJECT:

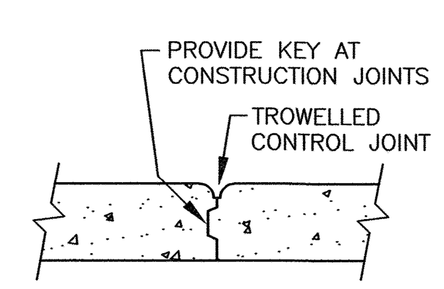
1. GRASSED AREAS: AFTER EACH RAIN EVEN OF 0.5" OR MORE DURING A 24 HOUR PERIOD, INSPECT GRASSED AREAS FOR SIGNS OF DISTURBANCE, SUCH AS EROSION. IF DAMAGED AREAS ARE DISCOVERED, IMMEDIATELY REPAIR THE DAMAGE. REPAIRS MAY INCLUDE ADDING NEW TOPSOIL, LIME, SEED, FERTILIZER AND MULCH.

2. PLANTINGS: PLANTING AND LANDSCAPING (TREES, SHRUBS) SHALL BE MONITORED BI-MONTHLY DURING THE FIRST YEAR TO INSURE VIABILITY AND VIGOROUS GROWTH. REPLACE DEAD OR DYING VEGETATION WITH NEW STOCK AND MAKE ADJUSTMENTS TO THE CONDITIONS THAT CAUSED THE DEAD OR DYING VEGETATION. DURING DRYER TIMES OF THE YEAR, PROVIDED WEEKLY WATERING OR IRRIGATION DURING THE ESTABLISHMENT PERIOD OF THE FIRST YEAR. MAKE NECESSARY ADJUSTMENTS TO ENSURE LONG-TERM HEALTH OF VEGETATED COVER, I.E. PROVIDE MORE PERMANENT MULCH OR COMPOST OR OTHER MEANS OF PROTECTION.

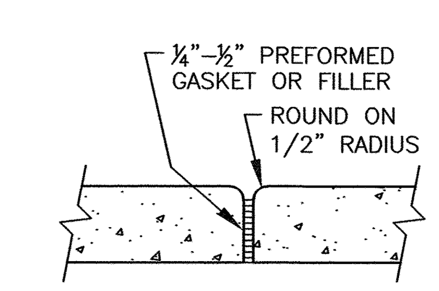
3. INVASIVE SPECIES
MONITOR STORMWATER MANAGEMENT SYSTEM FOR SIGNS OF INVASIVE SPECIES GROWTH. IF CAUGHT EARLIER ENOUGH, THEIR ERADICATION IS MUCH EASIER. THE MOST LIKELY PLACES WHERE INVASIONS START ARE IN WETTER, DISTURBED SOILS OR DETENTION PONDS. SPECIES SUCH AS PHRAGMITES AND PURPLE LOOSE-STRIFE ARE COMMON INVADERS IN THESE WETTER AREAS. IF THEY ARE FOUND THEN THE OWNER SHALL CONTACT A WETLAND SCIENTIST WITH EXPERIENCE IN INVASIVE SPECIES CONTROL TO IMPLEMENT A PLAN OF ACTION TO ERADICATE THE INVADERS. MEASURES THAT DO NOT REQUIRE THE APPLICATION OF CHEMICAL HERBICIDES SHOULD BE THE FIRST LINE OF DEFENSE.

4. JELLYFISH FILTER: REFERENCE SHEET D4 FOR COMPLETE MAINTENANCE DETAILS. FILTER SHOULD BE INSPECTED QUARTERLY FOR THE FIRST YEAR AND YEARLY THEREAFTER AS WELL AS AFTER MAJOR STORM EVENTS, AT MINIMUM. SEDIMENT DEPTHS GREATER THAN 12 INCHES SHOULD BE REMOVED, AS WELL AS FLOATABLES, TRASH AND DEBRIS, AND OIL. THE DECK MUST BE CLEANED AND FREE FROM SEDIMENT DURING INSPECTIONS. FILTER CARTRIDGES SHOULD BE RINSED EVERY 12 MONTHS. FILTER CARTRIDGES SHOULD BE REPLACED AT A MAXIMUM OF 5 YEARS, OR IF THEY FAIL TO RESTORE ADEQUATE HYDRAULIC CAPACITY.

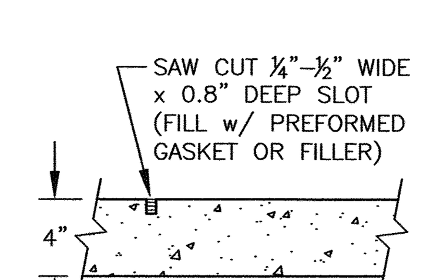
5. DOWNSPOUT FILTERS: REFERENCE SHEET D5 FOR MAINTENANCE SCHEDULE.



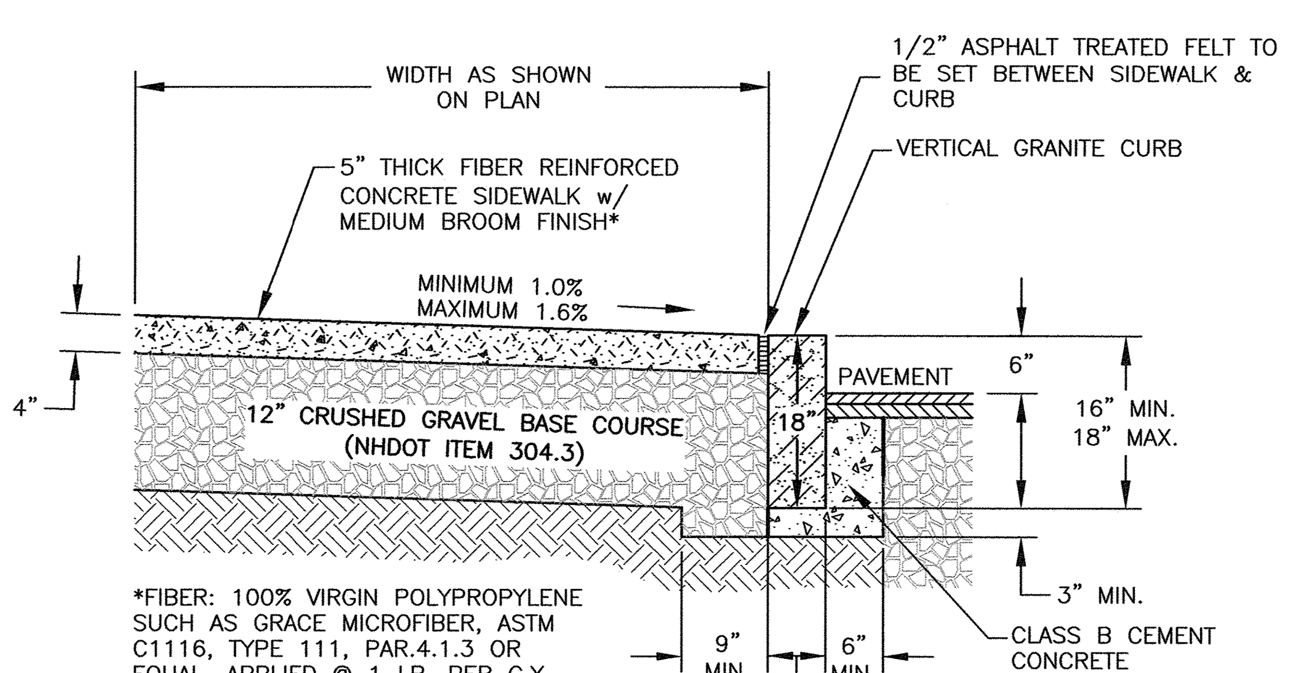
CONSTRUCTION JOINT @ BREAK IN CONSTRUCTION



EXPANSION JOINT @ 50' ON CENTER



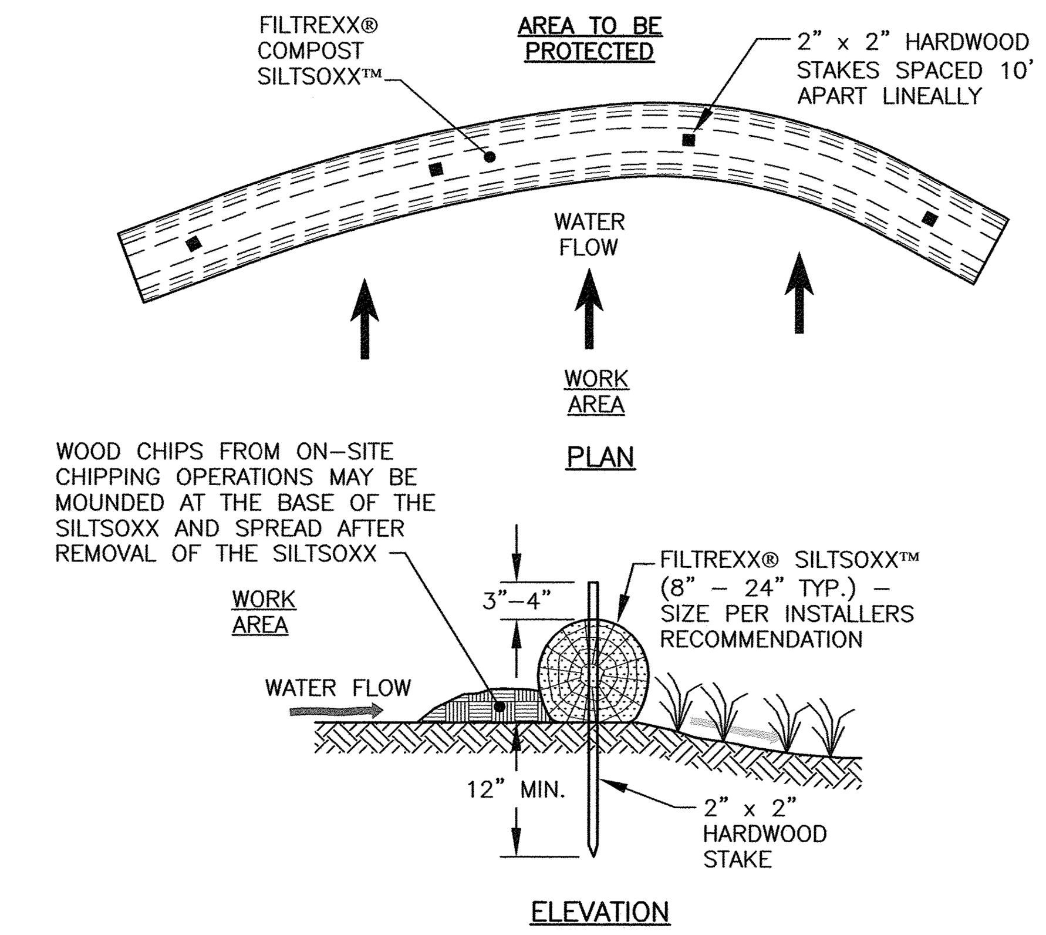
CONTROL JOINT @ 10' ON CENTER



*FIBER: 100% VIRGIN POLYPROPYLENE SUCH AS GRACE MICROFIBER, ASTM C1116, TYPE 111, PAR.4.1.3 OR EQUAL. APPLIED @ 1 LB. PER C.Y.

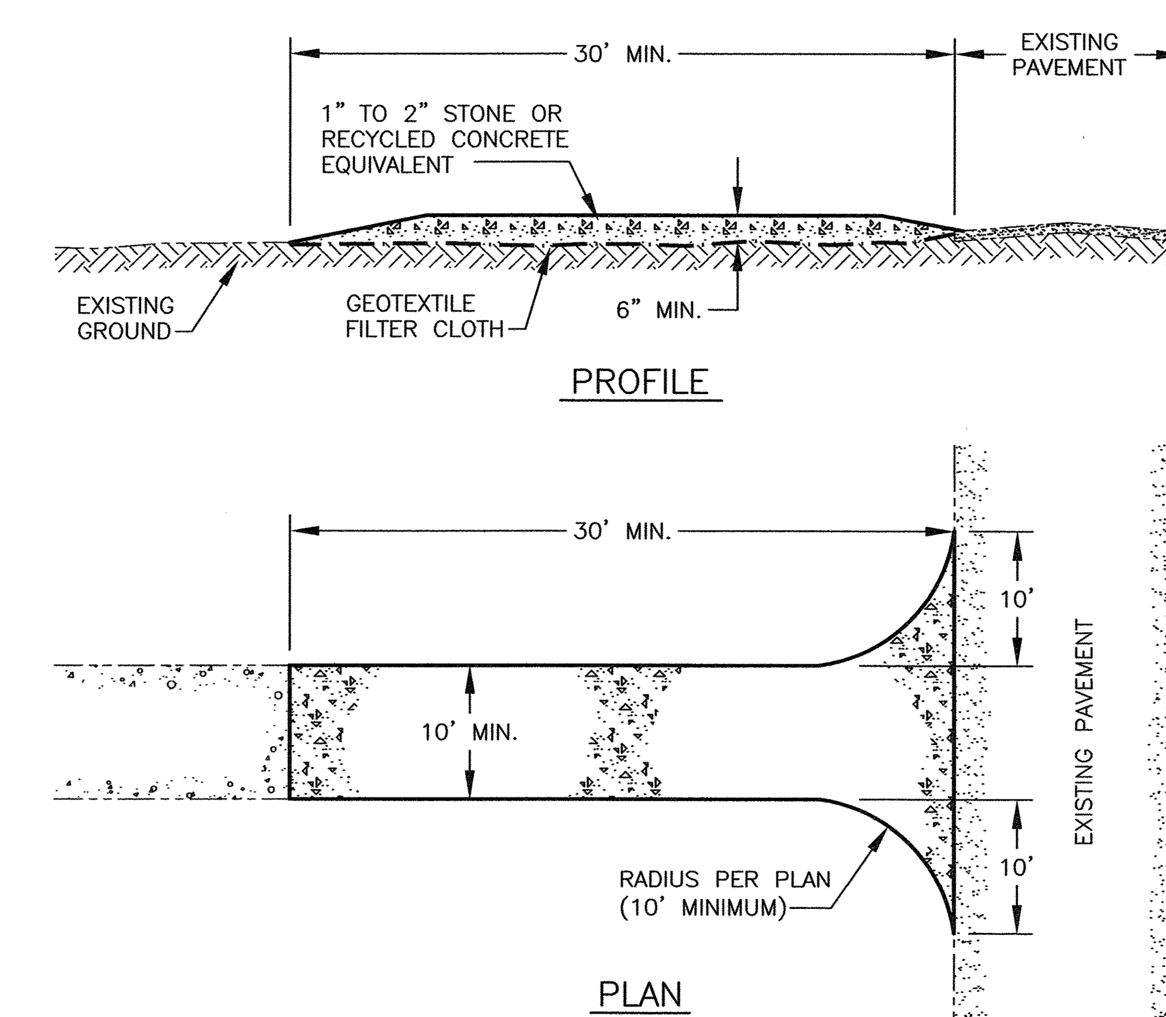
CROSS SECTION

3 / C2 PORTLAND CEMENT CONCRETE SIDEWALK
(WITH VERTICAL GRANITE CURB) NTS



NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILLTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
4. SILTSOXX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

1 / C4 FILTREXX® SILTSOXX™ FILTRATION SYSTEM
(AS NEEDED) NTS



MAINTENANCE

1) MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE GRAVEL AND THE EFFECTIVENESS OF THE GRAVEL PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOP DRESSED WITH NEW STONE. COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.
2) IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT ADEQUATE TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE FILTER STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.

CONSTRUCTION SPECIFICATIONS

1) STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 2 TO 4 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2) THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 30 FEET FOR A SINGLE RESIDENTIAL LOT.
3) THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4) THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICHEVER IS GREATER.
5) GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
6) ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7) THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
8) WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY, WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

2 / C4 STABILIZED CONSTRUCTION ENTRANCE
SUBSTITUTE FODS IF DESIRED NTS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

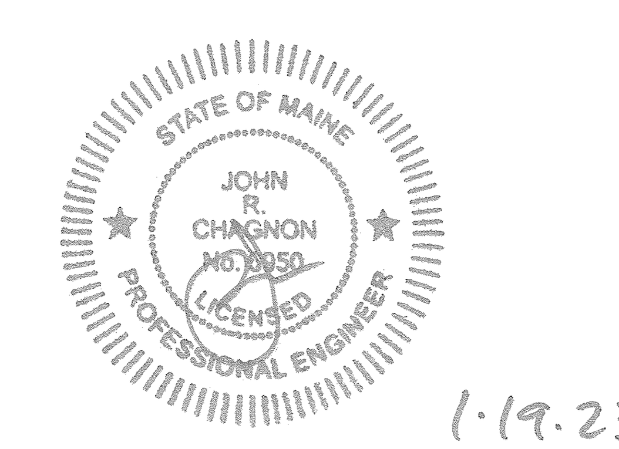
2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

SITE REDEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, ME

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	1/19/23

REVISIONS



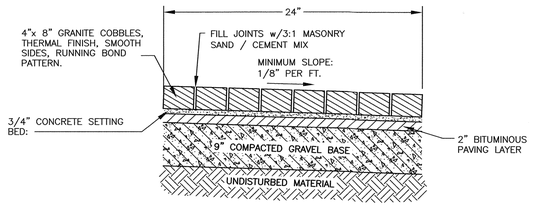
SCALE: AS SHOWN DECEMBER 2022

EROSION CONTROL NOTES AND DETAILS

D1

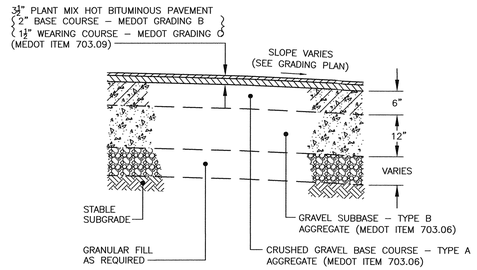
FB 423 PG 1

3050.72



A / C2 COBBLE BAND

NTS

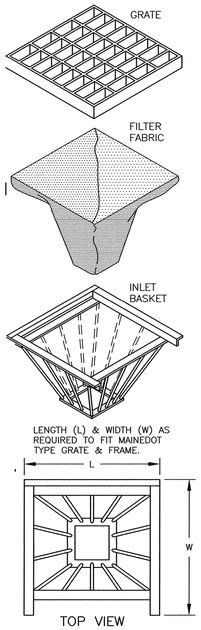


NOTE:
1) AGGREGATE BASE AND SUBBASE COURSES SHALL CONFORM TO SECTIONS 304 AND 703 OF MAINE DOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, APRIL 1995.

2) PLANT MIX HOT BITUMINOUS PAVEMENT SHALL CONFORM TO SECTIONS 401, 403, 702 AND 703 OF MAINE DOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, APRIL 1995.

B / C2 TYPICAL PAVEMENT CROSS–SECTION

NTS



1) INLET BASKETS SHALL BE INSTALLED IMMEDIATELY AFTER CATCH BASIN CONSTRUCTION IS COMPLETE AND SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.

2) FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND, SHALL EXTEND AT LEAST 6" PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.

3) THE FILTER FABRIC SHALL BE A GEOTEXTILE FABRIC; POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE, OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
- –RAB STRENGTH: 45 LB. MIN. IN ANY PRINCIPAL DIRECTION (ASTM D1682)
- –MULLEN BURST STRENGTH: MIN. 60 psi (ASTM D774)

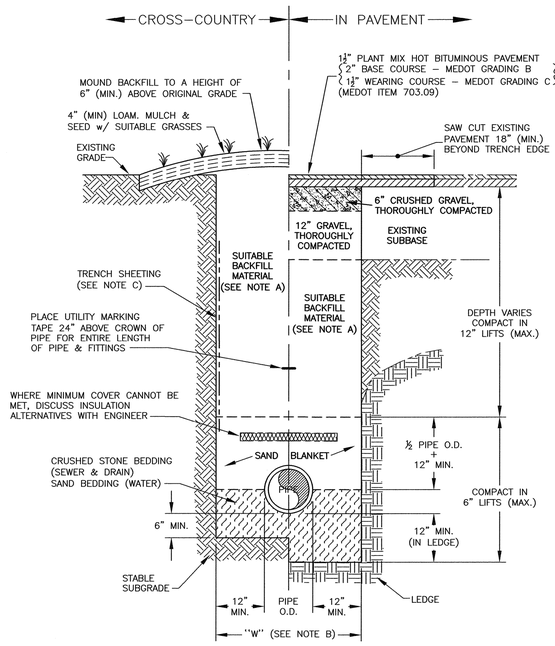
4) THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND A MINIMUM PERMEABILITY OF 120 gpm/s.f. (MULTIPLY THE PERMITTIVITY IN SEC.–1 FROM ASTM 54491–85 CONSTANT HEAD TEST USING THE CONVERSION FACTOR OF 74.)

5) THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM REACHING THE DRAINAGE SYSTEM AND/OR CAUSING SURFACE FLOODING.

6) SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.

C / C4 CATCH BASIN INLET BASKET

NTS



D / C3 TYPICAL PIPE TRENCH

NTS

TRENCH NOTES:

A) TRENCH BACKFILL:
– IN PAVED AREAS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIALS DEEMED TO BE UNACCEPTABLE BY THE ENGINEER.

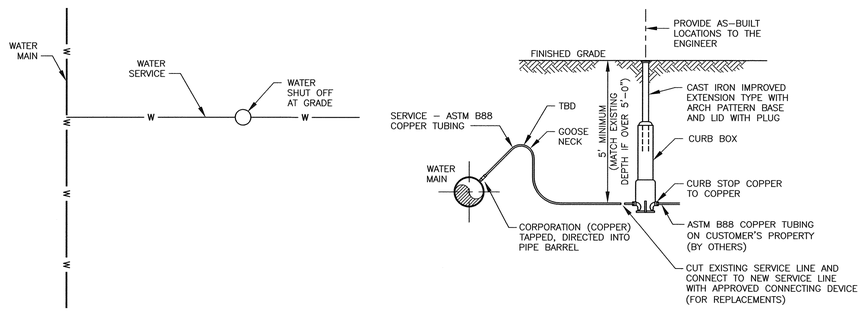
– IN CROSS–COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE.

B) "W" = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D..

C) TRENCH SHEETING:
IF REQUIRED. WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID–DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.

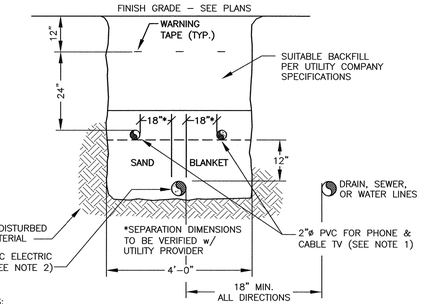
D) MINIMUM PIPE COVER FOR UTILITY MAINS (UNLESS GOVERNED BY OTHER CODES):
- 6' MINIMUM FOR SEWER
- 3' MINIMUM FOR STORMWATER DRAINS
- 5' MINIMUM FOR WATER MAINS

E) ALL PAVEMENT CUTS SHALL BE REPAIRED BY THE INFRARED HEAT METHOD.



E / C3 TYPICAL WATER SERVICE CONNECTION

NTS

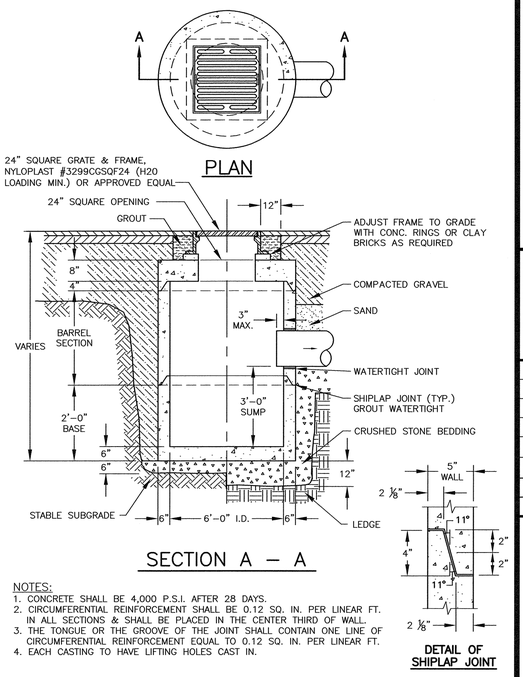


NOTES:
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCH. 40 FOR THE REMAINDER.
2) NORMAL CONDUIT SIZES FOR CMP ARE 3 INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4 INCH FOR THREE PHASE SECONDARY, AND 5 INCH FOR THREE PHASE PRIMARY.
3) ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST REVISION)
4) INSTALL A 200# PULL ROPE FOR EACH CONDUIT
5) VERIFY ALL CONDUIT SPECIFICATIONS WITH UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION.

F / C3 UTILITY TRENCH

ELECTRIC/PHONE/CABLE

NTS



NOTES:
1. CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS & SHALL BE PLACED IN THE CENTER THIRD OF WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.

G / C4 REINFORCED CONCRETE CATCH BASIN

(IF NEEDED)

NTS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

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SITE REDEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, ME

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	1/19/23

REVISIONS

STATE OF MAINE
JOHN R. CHAGNON
No. 6950
LICENSED
PROFESSIONAL ENGINEER
1.19.23

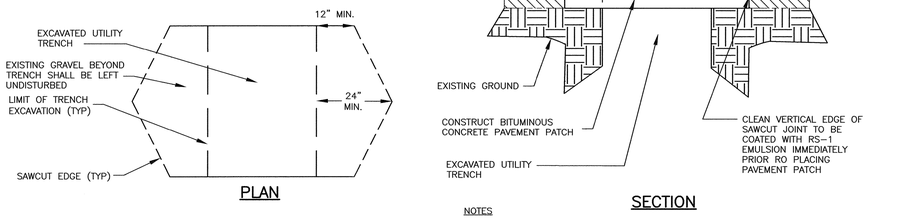
SCALE: AS SHOWN
DECEMBER 2022

DETAILS

D2

FB 423 PG 1

3050.72



PLAN

SECTION

NOTES

1. MACHINE CUT EXISTING PAVEMENT.
2. ALL TEMPORARY, DAMAGED OR DEFECTIVEPAVEMENT SHALL BE REMOVED PRIOR TO PLACEMENT OF PERMANENT TRENCH REPAIRS.
3. DIAMOND PATCHES, SHALL BE REQUIRED FOR ALL TRENCHES CROSSING ROADWAY, DIAMOND PATCHES SHALL MEET NH DOT REQUIREMENTS.

H / C3 TRENCH PATCH — NTS

SERVICE CONNECTION NOTES:

1) SEE NOTES FOR SERVICE CONNECTION REQUIREMENTS.

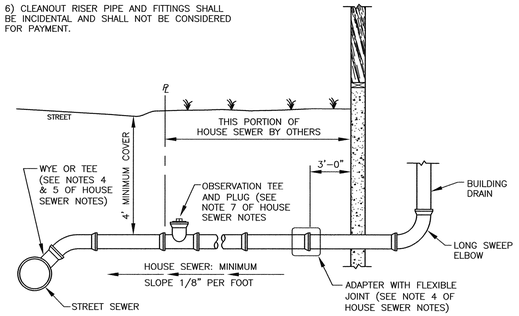
2) SERVICE CONNECTION SHALL BE INSTALLED BELOW WATER MAIN WHERE POSSIBLE.

3) CLEANOUTS SHALL BE INSTALLED AT EACH SERVICE CONNECTION.

4) REBAR SHALL BE PLACED AT SIDE OF CLEANOUT.

5) CLEANOUT SHALL BE USED TO PLUG AND TEST ALL NEW LATERALS WITH MINIMAL INTERRUPTION TO OPERATION OF HOMEOWNER SANITARY SYSTEM.

6) CLEANOUT RISER PIPE AND FITTINGS SHALL BE INCIDENTAL AND SHALL NOT BE CONSIDERED FOR PAYMENT.



I / C3 TYPICAL SEWER SERVICE CONNECTION — NTS

HOUSE SEWER NOTES

1) MINIMUM PIPE SIZE FOR HOUSE SERVICE SHALL BE FOUR INCHES.

2) PIPE AND JOINT MATERIALS:

A. PLASTIC SEWER PIPE

1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 To T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITE WALL)	8" THROUGH 15"

*PVC: POLYVINYL CHLORIDE
*ABS: ACRYLONITRILE-BUTADIENE-STYRENE

2. JOINT SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON BELL AND SPIGOT TYPE.

ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680. POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).

JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.

B. DUCTILE IRON PIPE, FITTINGS AND JOINTS.

1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:

A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.

A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND LINED MOLDS FOR WATER OR OTHER LIQUIDS.

2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:

A21.11 RUBBER GASKET JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS.

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) HOUSE SEWER INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND REFILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES. THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/8th INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

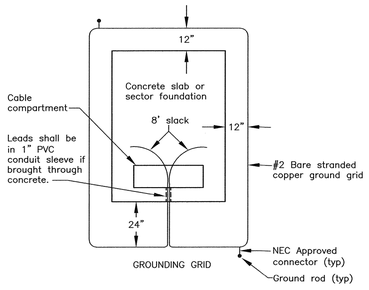
6) TESTING: THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)

A. AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.

B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER, TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.

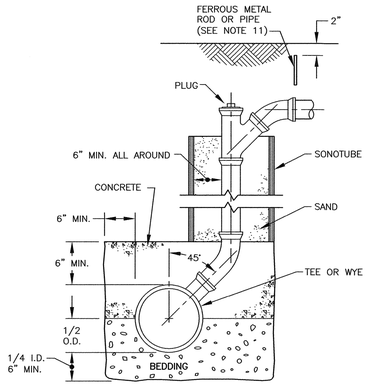
C. DRY FLUORESCENE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUNDWATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWN STREAM MANHOLE.

LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.



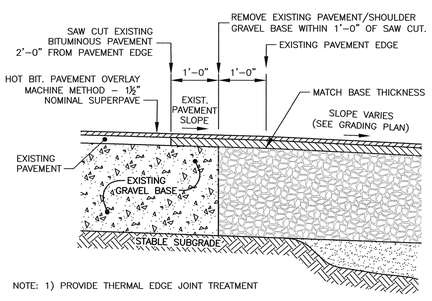
NOTES
1. See sheet "Requirements for Padmounted Transformer Slab Details".
2. All reinforcing to be #6 bars.
3. 1" PVC conduit sleeve for ground grid leads.
4. The ground grid shall be supplied and installed by the customer and is to be buried at least 12" below grade. Eight feet of extra wire for each ground grid leg shall be left exposed in the cable compartment to allow for the connection to the transfomer. the two 8' ground rods may be either galvanized steel or copperweld and they shall be connected to the grid with NEC approved connectors.

J / C3 TRANSFORMER PAD — CMP – IF NEEDED — NTS



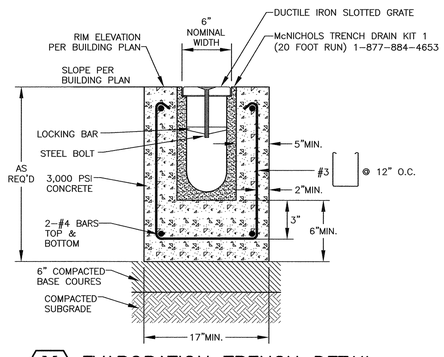
NO BACKFILLING BEFORE CONCRETE HAS TAKEN INITIAL SET (7 HRS. MIN.). BACKFILLING TO BE BROUGHT UP EVENLY ON ALL SIDES.

K / C3 SEWER CHIMNEY IF NEEDED — NTS



NOTE: 1) PROVIDE THERMAL EDGE JOINT TREATMENT

L / C3 PAVEMENT JOINT DETAIL — NTS



M / C6 EVAPORATION TRENCH DETAIL — NTS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282
WWW.HALEYWARD.COM

NOTES:

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3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

SITE REDEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, ME

NO.	DESCRIPTION	DATE
1	DETAIL H	5/19/23
0	ISSUED FOR APPROVAL	1/19/23

REVISIONS

STATE OF MAINE
JOHN R CHAGNON
No. 9950
LICENSED
PROFESSIONAL ENGINEER
5.18.23

SCALE: AS SHOWN — DECEMBER 2022

DETAILS — D3

FB 423 PG 1

3050.72

JELLYFISH DESIGN NOTES

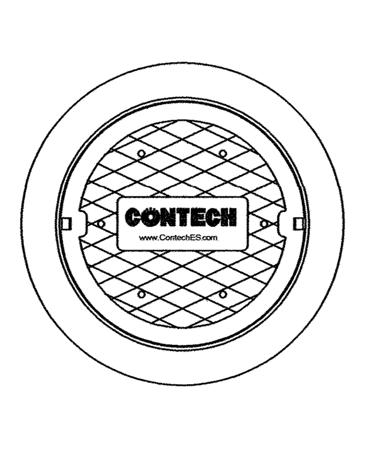
JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VAULT AND/OR SHALLOW ORIENTATIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD

CARTRIDGE SELECTION

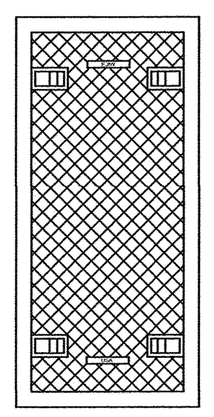
CARTRIDGE LENGTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"	5'-4"	4'-3"	3'-3"
FLOW RATE HI-FLO / DRAINDOWN (CFS) (PER CART)	0.178 / 0.089	0.133 / 0.067	0.089 / 0.045	0.049 / 0.025
MAX. TREATMENT (CFS)	1.96	1.47	0.98	0.54
DECK TO INSIDE TOP (MIN) (B)	5.00	4.00	4.00	4.00

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 10', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND AASHTO LOAD FACTOR DESIGN METHOD.
6. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
D. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



24" TRENCH COVER
(LENGTH VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	ID
WATER QUALITY FLOW RATE (cfs)	WQFLOW
PEAK FLOW RATE (cfs)	PEAK
RETURN PERIOD OF PEAK FLOW (yrs)	RETURN
# OF CARTRIDGES REQUIRED (HF / DD)	CART
CARTRIDGE LENGTH	SIZE

PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL
INLET #1	ELEV	MAT'L	DIA	SLOPE	HGL
INLET #2	ELEV	MAT'L	DIA	SLOPE	HGL
OUTLET	ELEV	MAT'L	DIA	SLOPE	HGL

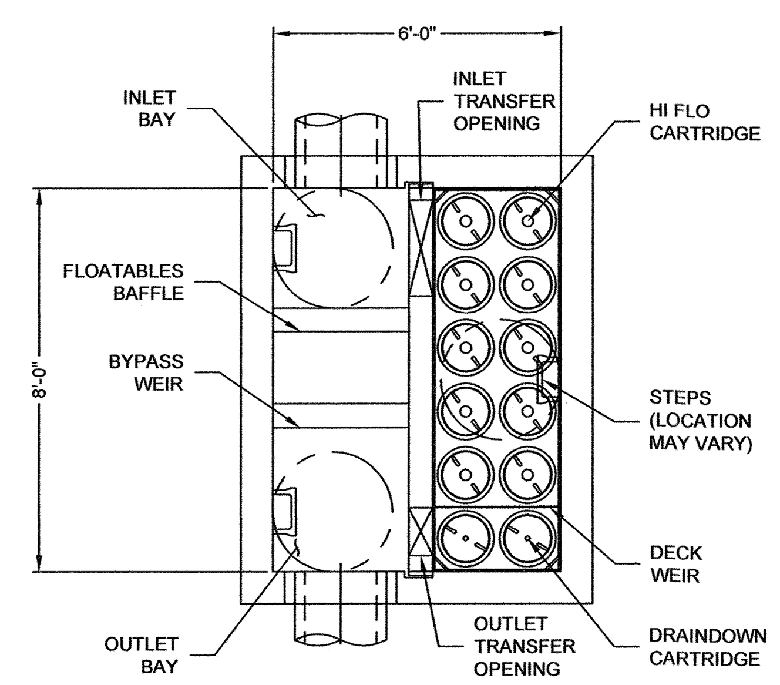
SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.

RIM ELEVATION	RIMELEV

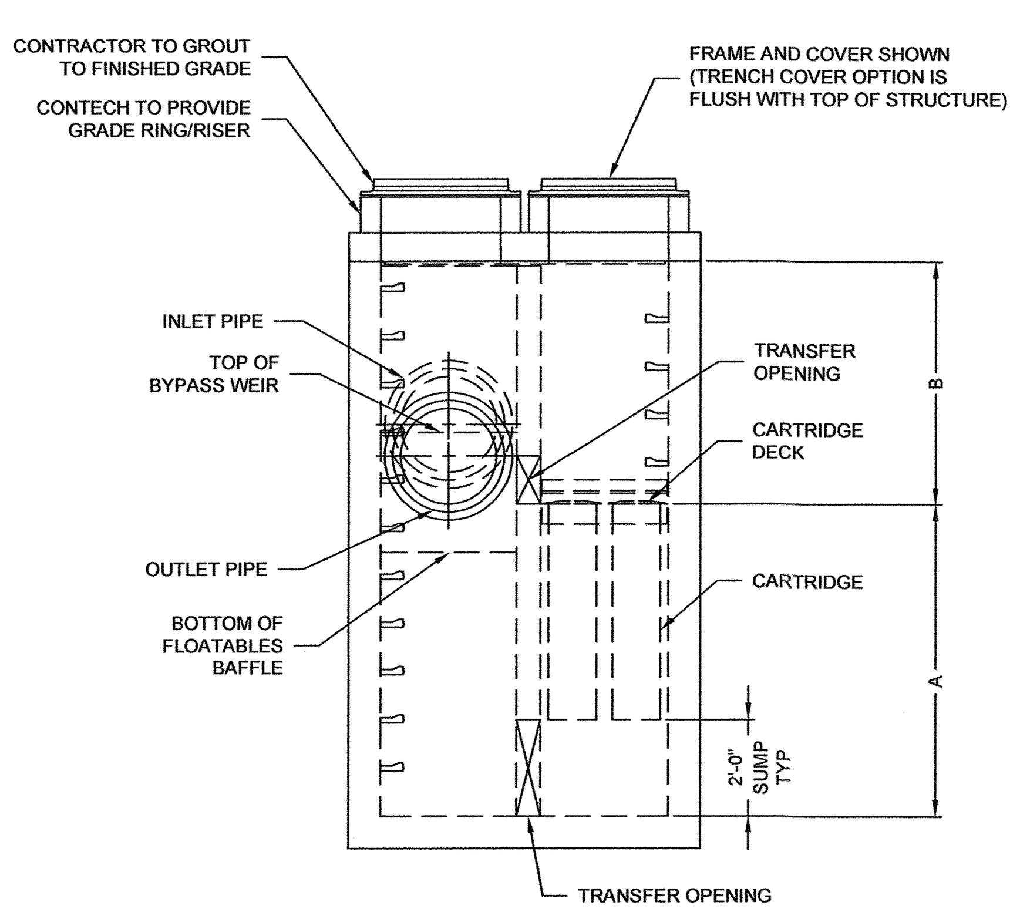
ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	WIDTH	HEIGHT

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



ELEVATION VIEW

N / C4 JELLYFISH FILTER DETAIL

NTS

1.0 Inspection and Maintenance Overview

The primary purpose of the Jellyfish® Filter is to capture and remove pollutants from stormwater runoff. As with any filtration system, these pollutants must be removed to maintain the filter's maximum treatment performance. Regular inspection and maintenance are required to insure proper functioning of the system.

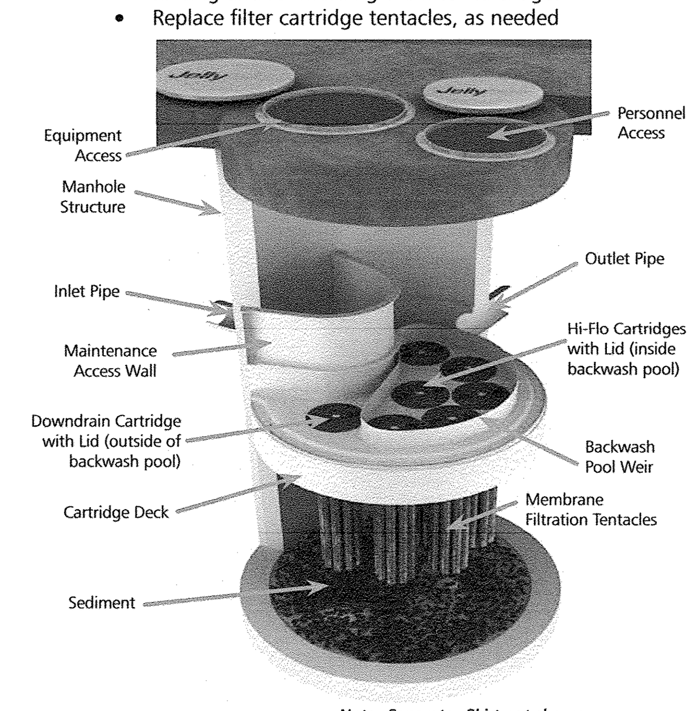
Maintenance frequencies and requirements are site specific and vary depending on pollutant loading. Additional maintenance activities may be required in the event of non-storm event runoff, such as base-flow or seasonal flow, an upstream chemical spill or due to excessive sediment loading from site erosion or extreme runoff events. It is a good practice to inspect the system after major storm events.

Inspection activities are typically conducted from surface observations and include:

- Observe if standing water is present
- Observe if there is any physical damage to the deck or cartridge lids
- Observe the amount of debris in the Maintenance Access Wall (MAW) or inlet bay for vault systems

Maintenance activities include:

- Removal of oil, floatable trash and debris
- Removal of collected sediments
- Rinsing and re-installing the filter cartridges
- Replace filter cartridge tentacles, as needed



Note: Separator Skirt not shown

2.0 Inspection Timing

Inspection of the Jellyfish Filter is key in determining the maintenance requirements for, and to develop a history of, the site's pollutant loading characteristics. In general, inspections should be performed at the times indicated below; *or per the approved project stormwater quality documents (if applicable), whichever is more frequent*.

1. A minimum of quarterly inspections during the first year of operation to assess the sediment and floatable pollutant accumulation, and to ensure proper functioning of the system.
2. Inspection frequency in subsequent years is based on the inspection and maintenance plan developed in the first year of operation. Minimum frequency should be once per year.
3. Inspection is recommended after each major storm event.
4. Inspection is required immediately after an upstream oil, fuel or other chemical spill.

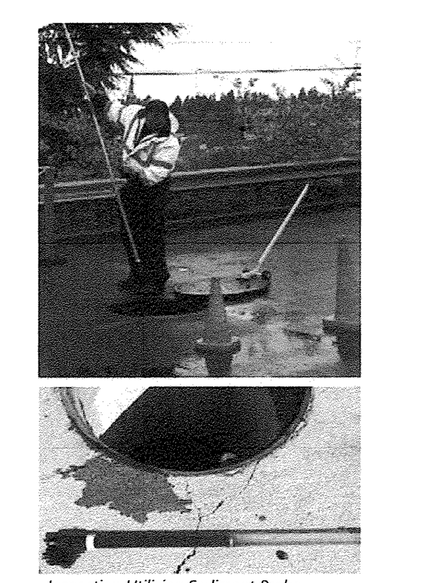
3.0 Inspection Procedure

The following procedure is recommended when performing inspections:

1. Provide traffic control measures as necessary.
2. Inspect the MAW or inlet bay for floatable pollutants such as trash, debris, and oil sheen.
3. Measure oil and sediment depth in several locations, by lowering a sediment probe until contact is made with the floor of the structure. Record sediment depth, and presences of any oil layers.
4. Inspect cartridge lids. Missing or damaged cartridge lids to be replaced.
5. Inspect the MAW (where appropriate), cartridge deck and receptacles, and backwash pool weir, for damaged or broken components.

3.1 Dry weather inspections

- Inspect the cartridge deck for standing water, and/or sediment on the deck.
- No standing water under normal operating conditions.
- Standing water inside the backwash pool, but not outside the backwash pool indicates, that the filter cartridges need to be rinsed.



Inspection Utilizing Sediment Probe

- Standing water outside the backwash pool is not anticipated and may indicate a backwater condition caused by high water elevation in the receiving water body, or possibly a blockage in downstream infrastructure.
- Any appreciable sediment (≥1/16") accumulated on the deck surface should be removed.

3.2 Wet weather inspections

- Observe the rate and movement of water in the unit. Note the depth of water above deck elevation within the MAW or inlet bay.
- Less than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges (i.e. cartridges located outside the backwash pool).
- Greater than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges and each of the hi-flo cartridges (i.e. cartridges located inside the backwash pool), and water should be overflowing the backwash pool weir.
- 18 inches or greater and relatively little flow is exiting the cartridge lids and outlet pipe, this condition indicates that the filter cartridges need to be rinsed.

4.0 Maintenance Requirements

Required maintenance for the Jellyfish Filter is based upon results of the most recent inspection, historical maintenance records, or the site specific water quality management plan; whichever is more frequent. In general, maintenance requires some combination of the following:

1. Sediment removal for depths reaching 12 inches or greater, or within 3 years of the most recent sediment cleaning, whichever occurs sooner.
2. Floatable trash, debris, and oil removal.
3. Deck cleaned and free from sediment.
4. Filter cartridges rinsed and re-installed as required by the most recent inspection results, or within 12 months of the most recent filter rinsing, whichever occurs sooner.
5. Replace tentacles if rinsing does not restore adequate hydraulic capacity, remove accumulated sediment, or if damaged or missing. It is recommended that tentacles should remain in service no longer than 5 years before replacement.
6. Damaged or missing cartridge deck components must be repaired or replaced as indicated by results of the most recent inspection.
7. The unit must be cleaned out and filter cartridges inspected immediately after an upstream oil, fuel, or chemical spill. Filter cartridge tentacles should be replaced if damaged or compromised by the spill.

5.0 Maintenance Procedure

The following procedures are recommended when maintaining the Jellyfish Filter:

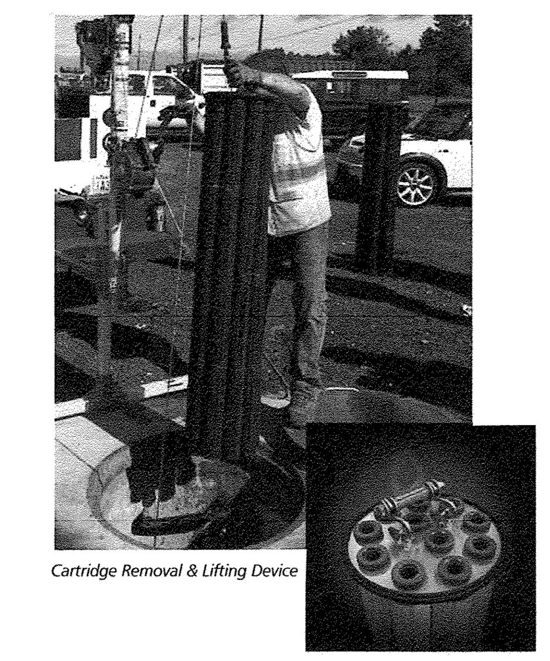
1. Provide traffic control measures as necessary.
2. Open all covers and hatches. Use ventilation equipment as required, according to confined space entry procedures. ***Caution: Dropping objects onto the cartridge deck may cause damage*.**
3. Perform Inspection Procedure prior to maintenance activity.
4. To access the cartridge deck for filter cartridge service, descend into the structure and step directly onto the deck. Caution: Do not step onto the maintenance access wall (MAW) or backwash pool weir, as damage may result. Note that the cartridge deck may be slippery.
5. Maximum weight of maintenance crew and equipment on the cartridge deck not to exceed 450 lbs.

5.1 Filter Cartridge Removal

1. Remove a cartridge lid.
2. Remove cartridges from the deck using the lifting loops in the cartridge head plate. Rope or a lifting device (available from Contech) should be used. ***Caution: Should a snag occur, do not force the cartridge upward as damage to the tentacles may result. Wet cartridges typically weigh between 100 and 125 lbs*.**
3. Replace and secure the cartridge lid on the exposed empty receptacle as a safety precaution. Contech does not recommend exposing more than one empty cartridge receptacle at a time.

5.2 Filter Cartridge Rinsing

1. Remove all 11 tentacles from the cartridge head plate. Take care not to lose or damage the O-ring seal as well as the plastic threaded nut and connector.



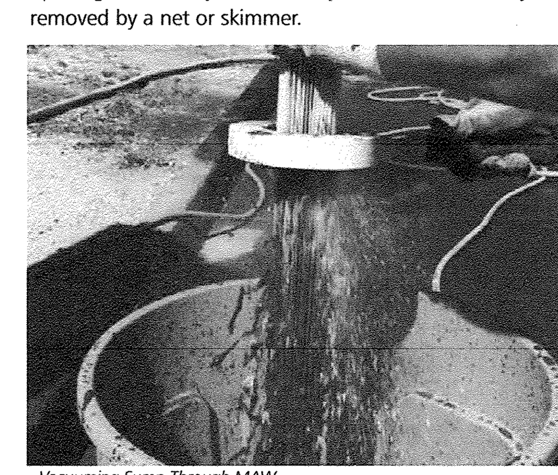
Cartridge Removal & Lifting Device

2. Position tentacles in a container (or over the MAW), with the threaded connector (open end) facing down, so rinse water is flushed through the membrane and captured in the container.
3. Using the Jellyfish rinse tool (available from Contech) or a low-pressure garden hose sprayer, direct water spray onto the tentacle membrane, sweeping from top to bottom along the length of the tentacle. Rinse until all sediment is removed from the membrane. ***Caution: Do not use a high pressure sprayer or focused stream of water on the membrane. Excessive water pressure may damage the membrane*.**

4. Collected rinse water is typically removed by vacuum hose.
5. Reassemble cartridges as detailed later in this document. Reuse O-rings and nuts, ensuring proper placement on each tentacle.

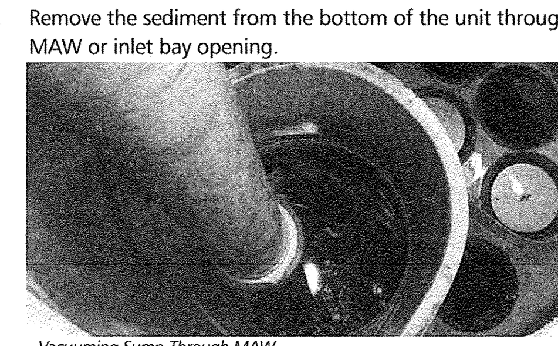
5.3 Sediment and Flotables Extraction

1. Perform vacuum cleaning of the Jellyfish Filter only after filter cartridges have been removed from the system. Access the lower chamber for vacuum cleaning only through the maintenance access wall (MAW) opening. Be careful not to damage the flexible plastic separator skirt that is attached to the underside of the deck on manhole systems. Do not lower the vacuum wand through a cartridge receptacle, as damage to the receptacle will result.
2. Vacuum floatable trash, debris, and oil, from the MAW opening or inlet bay. Alternatively, floatable solids may be removed by a net or skimmer.



Vacuuming Sump Through MAW

3. Pressure wash cartridge deck and receptacles to remove all sediment and debris. Sediment should be rinsed into the sump area. Take care not to flush rinse water into the outlet pipe.
4. Remove water from the sump area. Vacuum or pump equipment should only be introduced through the MAW or inlet bay.
5. Remove the sediment from the bottom of the unit through the MAW or inlet bay opening.



Vacuuming Sump Through MAW

6. For larger diameter Jellyfish Filter manholes (≥8-ft) and some vaults complete sediment removal may be facilitated by removing a cartridge lid from an empty receptacle and inserting a jetting wand (not a vacuum wand) through the receptacle. Use the sprayer to rinse loosened sediment toward the vacuum hose in the MAW opening, being careful not to damage the receptacle.

5.4 Filter Cartridge Reinstallation and Replacement

1. Cartridges should be installed after the deck has been cleaned. It is important that the receptacle surfaces be free from grit and debris.
2. Remove cartridge lid from deck and carefully lower the filter cartridge into the receptacle until head plate gasket is seated squarely in receptacle. ***Caution: Do not force the cartridge downward; damage may occur.***
3. Replace the cartridge lid and check to see that both male threads are properly seated before rotating approximately 1/3 of a full rotation until firmly seated. Use of an approved rim gasket lubricant may facilitate installation. See next page for additional details.
4. If rinsing is ineffective in removing sediment from the tentacles, or if tentacles are damaged, provisions must be made to replace the spent or damaged tentacles with new tentacles. Contact Contech to order replacement tentacles.

5.5 Chemical Spills

Caution: If a chemical spill has been captured, do not attempt maintenance. Immediately contact the local hazard response agency and contact Contech.

5.6 Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads. Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This typically requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local waste water treatment plant or on-site treatment and discharge.

Jellyfish Filter Components & Filter Cartridge Assembly and Installation

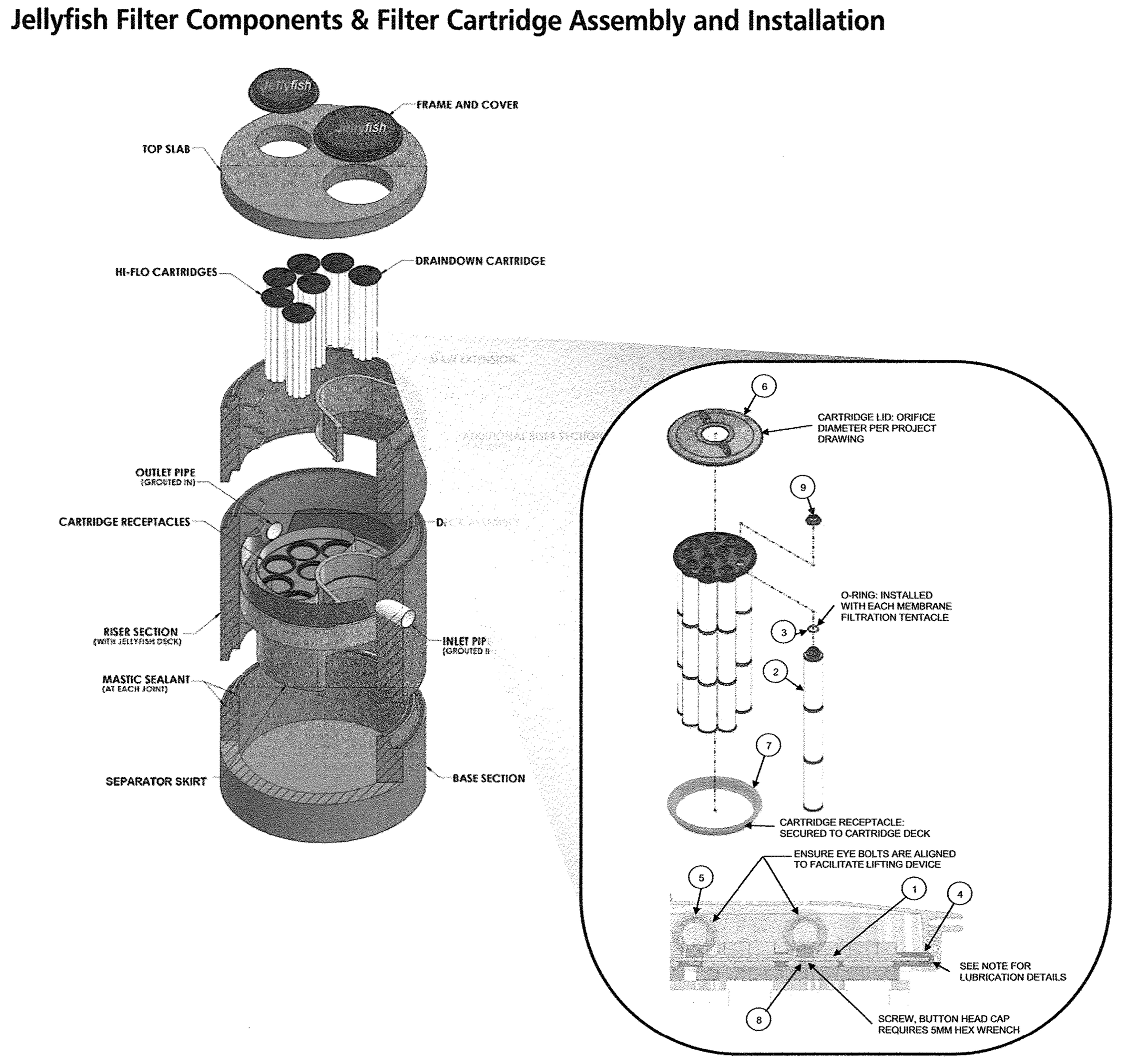


TABLE 1: BOM

ITEM NO.	DESCRIPTION
1	JF HEAD PLATE
2	JF TENTACLE
3	JF O-RING
4	JF HEAD PLATE GASKET
5	JF CARTRIDGE EYELET
6	JF 14IN COVER
7	JF RECEPTACLE
8	BUTTON HEAD CAP SCREW M6X14MM SS
9	JF CARTRIDGE NUT

TABLE 2: APPROVED GASKET LUBRICANTS

PART NO.	MFR	DESCRIPTION
78713	LA-CO	LUBRI-JOINT
40501	HERCULES	DUCK BUTTER
30600	OATEY	PIPE LUBRICANT
PSLUBXL1Q	PROSELECT	PIPE JOINT LUBRICANT

NOTES:

Head Plate Gasket Installation:
Install Head Plate Gasket (Item 4) onto the Head Plate (Item 1) and liberally apply a lubricant from Table 2: Approved Gasket Lubricants onto the gasket where it contacts the Receptacle (Item 7) and Cartridge Lide (ITem 6). Follow Lubricant manufacturer's instructions.

Lid Assembly:
Rotate Cartridge Lid counter-clockwise until both male threads drop down and properly seat. Then rotate Cartridge Lid clock-wise approximately one-third of a full rotation until Cartridge Lid is firmly secured, creating a watertight seal.

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.
WWW.HALEYWARD.COM
200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

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SITE REDEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, ME

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	1/19/23

REVISIONS

STATE OF MAINE — JOHN R. CHAGNON — No. 6950 — LICENSED PROFESSIONAL ENGINEER — 1.19.23

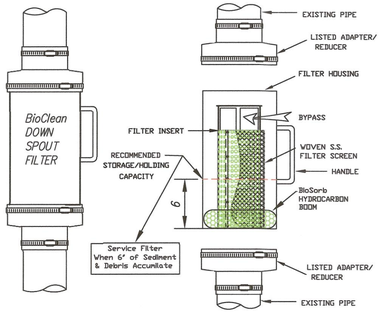
SCALE: AS SHOWN — DECEMBER 2022

DETAILS — D4

FB 423 PG 1 — 3050.72

SERVICE MANUAL
(Cleaning Procedures)

Bio Clean DOWNSPOUT FILTER
Screen Type With Hydrocarbon Boom



DETAIL OF PARTS

TOOLS AND EQUIPMENT NEEDED:

1. Medium size flat scred driver
2. BioSorb hydrocarbon boom. 25-1/2" X 2" dia. (Call Bio Clean to order)
3. Trash container or bag
4. Wooden dowel approx. 3' x 1/2' dia.

Bio Clean
A Forterra Company

P.O. BOX 869, Oceanside, Ca. 92049
(760) 433-7640 Fax (760) 433-3176
www.bioclean environmental.net

REMOVING FILTER

Bio Clean
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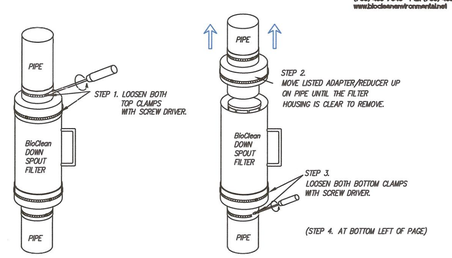
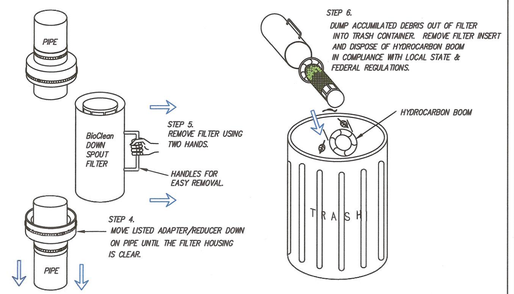


(STEP 4. AT BOTTOM LEFT OF PAGE)

CLEANING FILTER



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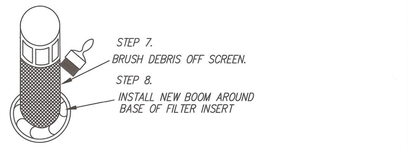
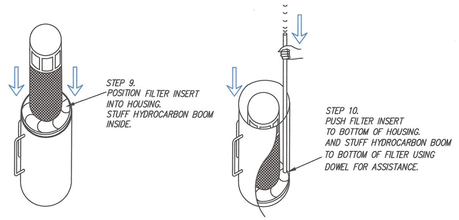


REPLACING FILTER INSERT



REPLACING FILTER

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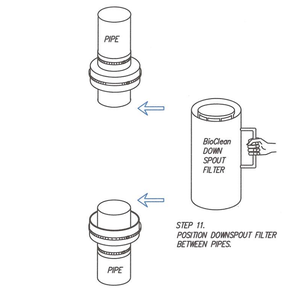
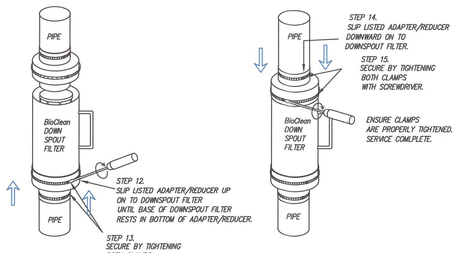
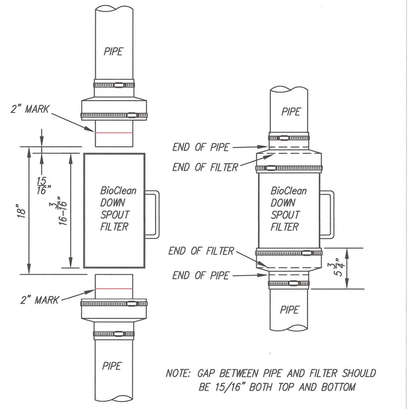




APPROPRIATE INSTALLATION

FILTER CENTERED BETWEEN PIPES WITH EVEN GAPS ON TOP AND BOTTOM



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DOWNSPOUT FILTER:

DOWNSPOUT FILTER NOTES:

MAINTENANCE:

THE FILTER IS DESIGNED TO ALLOW FOR THE USE OF MANUAL OR VACUUM REMOVAL OF CAPTURED MATERIALS IN THE FILTER

STRUCTURE. FILTERS CAN BE CLEANED EASILY BY SIMPLY LOOSENING THE METAL CLAMPS AND REMOVING THE FILTER. THE HYDROCARBON

ADSORBENT MEDIA THEN IS REMOVED AND THE TRASH AND DEBRIS CAN BE REMOVED FROM THE STRUCTURE. AT EACH CLEANING, NEW

HYDROCARBON ADSORBENT MEDIA SHOULD BE REINSTALLED.

MAINTENANCE NOTES:

1, BIO CLEAN ENVIRONMENTAL SERVICES, INC. RECOMMENDS CLEANING AND DEBRIS REMOVAL MAINTENANCE A MINIMUM OF TWO TO FOUR TIMES PER YEAR, AND REPLACEMENT OF MEDIA BOOMS A MINIMUM OF TWICE A YEAR.

2. THE DOWNSPOUT FILTER CAN BE CLEANED BY LOOSING THE METAL CLAMPS AT BOTTOM AND TOP OF RUBBER BOOTS. REMOVE

THE FILTER BY GRASPING THE HANDLES, SLIDE DOWN THE BOTTOM BOOT OVER THE OUTFLOW PIPE AND SLIDE UP THE TOP BOOT OVER

INFLOW PIPE. PLACE THE FILTER ON THE GROUND. DISPOSE OF ANY TRASH AND SEDIMENTS COLLECTED IN FILTER.

3. ONCE THE FILTER IS FREE, REMOVE THE INTERIOR INSERT. REMOVE THE HYDROCARBON ADSORBENT MEDIA BY UNWRAPPING IT

FROM THE INTERIOR INSERT AND REPLACING WITH A NEW MEDIA, WRAPPING IT THE SAME WAY.

4. PLACE THE INTERIOR INSERT BACK INTO THE FILTER.

5. PLACE THE FILTER BACK IN LINE WITH THE PIPE AND SLIDE BACK THE TOP AND BOTTOM BOOTS IN PLACE AND TIGHTEN THE METAL CLAMPS SECURELY.

6. EVALUATION OF THE HYDROCARBON MEDIA SHALL BE PERFORMED AT EACH CLEANING. IF THE MEDIA IS FILLED WITH

HYDROCARBONS AND OILS IT SHOULD BE REPLACED.

7. TRANSPORT ALL DEBRIS, TRASH, ORGANICS AND SEDIMENTS TO APPROVED FACILITY FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REQUIREMENTS.

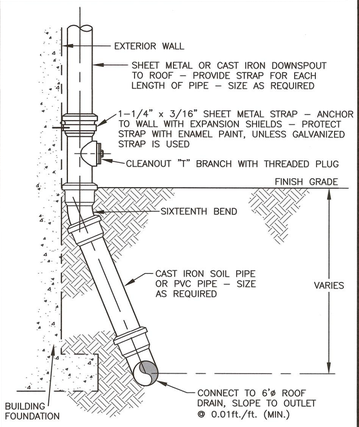
8. THE HYDROCARBON MEDIA WITH ABSORBED HYDROCARBONS IS CONSIDERED HAZARDOUS WASTE AND NEEDS TO BE HANDLED

AND DISPOSED OF AS HAZARDOUS MATERIAL. PLEASE REFER TO STATE AND LOCAL REGULATIONS FOR THE PROPER DISPOSAL OF USED MOTOR OIL/FILTERS.

9. FOLLOWING MAINTENANCE AND/OR INSPECTION, THE MAINTENANCE OPERATOR SHALL PREPARE A MAINTENANCE/INSPECTION RECORD. THE RECORD SHALL INCLUDE ANY MAINTENANCE ACTIVITIES PERFORMED, AMOUNT AND DESCRIPTION OF DEBRIS COLLECTED, AND CONDITION OF FILTER.

10. THE OWNER SHALL RETAIN THE MAINTENANCE/INSPECTION RECORD FOR A MINIMUM OF FIVE YEARS FROM THE DATE OF MAINTENANCE. THESE RECORDS SHALL BE MADE AVAILABLE TO THE GOVERNING MUNICIPALITY FOR INSPECTION UPON REQUEST AT ANY TIME.

11. ANY TOXIC SUBSTANCE OR ITEM FOUND IN THE FILTER IS CONSIDERED AS HAZARDOUS MATERIAL AND CAN ONLY BE HANDLED BY A CERTIFIED HAZARDOUS WASTE TRAINED PERSON (MINIMUM 24-HOUR HAZWOPER).



0 / C4 DOWNSPOUT SHOE
(AT ALL ROOF GUTTERS) NTS

AMBIT ENGINEERING, INC.
A DIVISION OF HALEY WARD, INC.

200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

WWW.HALEYWARD.COM

NOTES:

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SITE REDEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, ME

NO.	DESCRIPTION	DATE
1	DETAIL O	5/18/23
0	ISSUED FOR APPROVAL	1/19/23

REVISIONS

STATE OF MAINE
JOHN R. CHAGNON
NO. 13850
LICENSED
PROFESSIONAL ENGINEER

5/18/23

SCALE: AS SHOWN DECEMBER 2022

DETAILS D5

FB 423 PG 1

3050.72

woodburn & company
LANDSCAPE ARCHITECTURE
Since 1994 reflecting your vision.

May 24, 2023

Mr. Dutch Dunkelberger
Chair
Kittery Planning Board
200 Rogers Road
Kittery, ME 03904

RE: 35 Badgers Island
Landscape Plan – Peer Review Comments

Dear Chair Dunkelberger and Planning Board Members:

We are in receipt of Ironwood Design Group's landscape architecture peer review comments for the 35 Badger's Island development. We have updated our landscape plan and coordinated with Ambit's updated plans such that Ironwood's comments have been addressed.

Specifically:

Item 1. All items listed are now consistent between the landscape and civil drawings except for trees to be saved/removed. Landscape plan is current and civil plans will be coordinated in the next submission.

Item 2. The underground utilities have been accounted for and shown on the landscape plans, conflicts have been resolved.

Item 3. A dark sky compliant lighting plan with the required specifications will be developed and provided in subsequent submissions prior to completion of planning board review.

Item 4. Open Space information has been added to the Civil Plans.

Item 5. Plant list spelling correction has been completed.

Item 6. Perennials, including the Sedum 'Autumn Joy' called out by Ironwood are shown on the plan and are to be located in field by Landscape Architect per the plant list notes.

Item 7. Detail H/D3 in the civil package has been deleted in favor of the Tree Planting and Shrub Planting details on L-1.

a. Both shrubs and trees are to be planted on undisturbed or hand tamped existing soils, no additional soils to be used to avoid plant settlement.

103 KENT PLACE
NEWMARKET, NH 03857
603.659.5949
woodburnandcompany.com

b. Both the tree and shrub details call for all wire baskets to be removed.
c. Tree detail calls for root flare to be set 2-3” above existing grade.

Item 8. Paver detail has been updated on civil plans.

Item 9. Detail has been updated on civil plans to be porous.

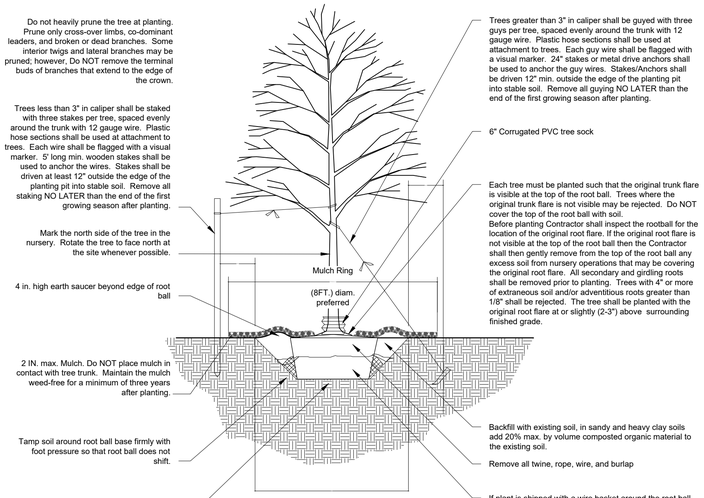
Item 10. Details requested will be provided in subsequent submissions prior to completion of planning board review.

Item 11.

a. Detailed planting notes have been provided and are on L-1.
b. Loam notes and specifications are part of the planting notes on L-1.
c. Loam specification is addressed in planting notes on L-1.
d. Driveways will be heated snow storage, if any, will be minimal.
e. The area labeled “Existing plantings, keep and protect” along the northeast property line is shown in the photo below. These plants to remain and be protected will be added to civil plans for consistency in subsequent submissions.

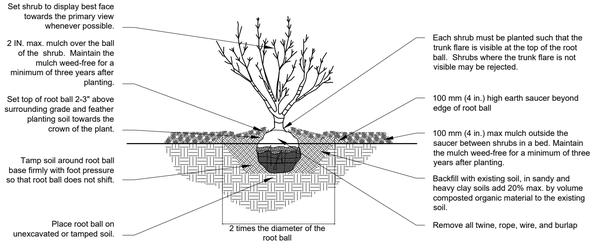
Landscape Notes

1. Design is based on drawings by Ambit Engineering. Drawings may require adjustment due to actual field conditions.
2. This plan is FOR REVIEW purposes ONLY, NOT for Construction. Construction Documents will be provided upon request.
3. The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
4. Erosion Control shall be in place prior to construction.
5. Erosion Control shall comply with State and Local Erosion & Sedimentation Control Practices
6. The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
7. It is the contractor's responsibility to verify drawings provided are to the correct scale prior to any bid, estimate or installation. A graphic scale bar has been provided on each sheet for this purpose. If it is determined that the scale of the drawing is incorrect, the landscape architect will provide a set of drawings at the correct scale, at the request of the contractor.
8. Trees to Remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Snow fence shall be located at the drip line or at the distance in feet from the trunk equal to the diameter of the tree caliper in inches, whichever is greater, and shall be expanded to include any and all surface roots. Do not fill or mulch on the trunk flare. Do not disturb roots. In order to protect the integrity of the roots, branches, trunk and bark of the tree(s) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s). Do not store any refuse or construction materials or portalets within the tree protection area.
9. Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
10. The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call DIGSAFE at 811 or 888-DIG-SAFE (1-888-344-7233.)
11. The Contractor shall procure any required permits prior to construction.
12. Prior to any landscape construction activities Contractor shall test all existing loam and loam from off-site intended to be used for lawns and plant beds using a thorough sampling throughout the supply. Soil testing shall indicate levels of pH, nitrates, macro and micro nutrients, texture, soluble salts, and organic matter. Contractor shall amend all soils to be used for lawns and plant beds per testing results' recommendations and review with Landscape Architect. All loam to be used on site shall be amended as approved by the Landscape Architect prior to placement.
13. Contractor shall notify landscape architect or owner's representative immediately if at any point during demolition or construction a site condition is discovered which may negatively impact the completed project. This includes, but is not limited to, unforeseen drainage problems, unknown subsurface conditions, and discrepancies between the plan and the site. If a Contractor is aware of a potential issue and does not bring it to the attention of the Landscape Architect or Owner's Representative immediately, they may be responsible for the labor and materials associated with correcting the problem.
14. The Contractor shall furnish and plant all plants shown on the drawings and listed thereon. All plants shall be nursery-grown under climatic conditions similar to those in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the American Standard of Nursery Stock, American Standards Institute, Inc. 230 Southern Building, Washington, D.C. 20005.
15. A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.
16. All plants shall be legibly tagged with proper botanical name.
17. Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not affect the right of inspection and rejection during or after the progress of the work. The Owner reserves the right to inspect and/or select all trees at the place of growth and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
18. No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
19. All landscaping shall be provided with the following:
    a. Outside hose attachments spaced a maximum of 150 feet apart, and
    b. An underground irrigation system, or
    c. A temporary irrigation system designed for a two-year period of plant establishment.
21. If an automatic irrigation system is installed, all irrigation valve boxes shall be located within planting bed areas.
22. The contractor is responsible for all plant material from the time their work commences until final acceptance. This includes but is not limited to maintaining all plants in good condition, the security of the plant material once delivered to the site, watering of plants, including seeding and weeding. Plants shall be appropriately watered prior to, during, and after planting. It is the Contractor's responsibility to provide clean water suitable for plant health from off site, should it not be available on site.
23. All disturbed areas will be dressed with 6" of loam and planted as noted on the plans or seeded except plant beds. Plant beds shall be prepared to a depth of 12" with 75% loam and 25% compost.
24. Trees, ground cover, and shrub beds shall be mulched to a depth of 2" with one-year-old, well-composted, shredded native bark not longer than 4" in length and ½" in width, free of woodchips and sawdust. Mulch for ferns and herbaceous perennials shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 5' diameter min. saucer. Color of mulch shall be black.
25. Drip strip shall extend to 6" min. beyond roof overhang and shall be edged with 3/16" thick metal edger.
26. In no case shall mulch touch the stem of a plant nor shall mulch ever be more than 3" thick total (including previously applied mulch) over the root ball of any plant.
27. Secondary lateral branches of deciduous trees overhanging vehicular and pedestrian travel ways shall be pruned up to a height of 8' to allow clear and safe passage of vehicles and pedestrians under tree canopy. Shrubs and ornamental plantings adjacent to vehicular travel way shall not exceed three feet in height where sightlines would be blocked. If pruning is necessary to maintain the required maximum height, plants shall be pruned to a natural form and shall not be sheared.
28. Snow shall be stored a minimum of 5' from shrubs and trunks of trees.
29. The Landscape Contractor shall guarantee all lawns and plant materials for a period of not fewer than two years. Dead, dying, or diseased planting shall be removed and replaced within the growing season.
30. Landscape Architect is not responsible for the means and methods of the Contractor.



Tree Planting Detail

Scale: NTS



Shrub Planting Detail

Scale: NTS

Plant List

TREES

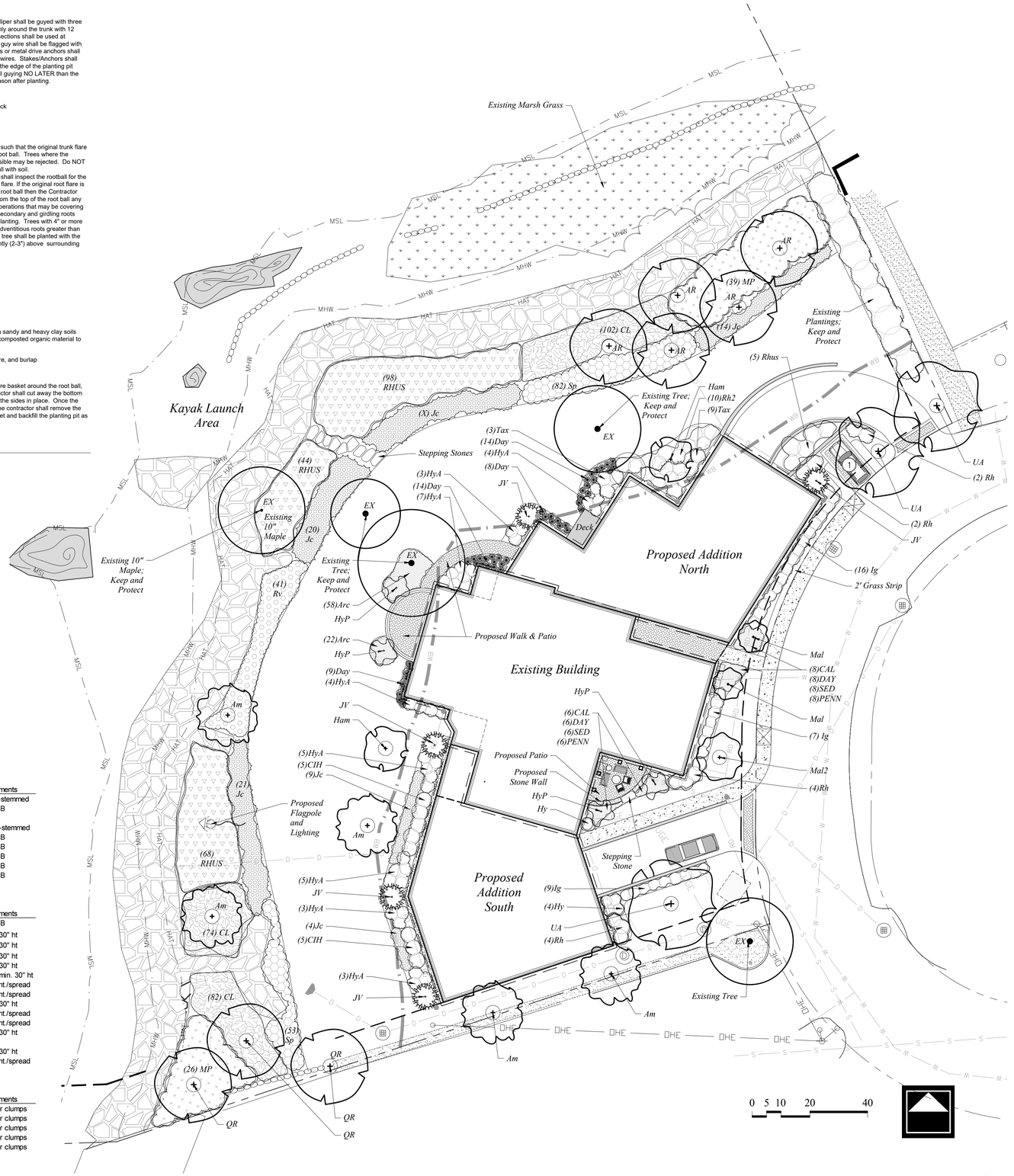
Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Am	*Amelanchier grandiflora 'Robin Hill'*	Robin Hill Serviceberry	5	8-10' ht	BB multi-stemmed
AR	*Acer rubrum 'October Glory'*	October Glory Red Maple	6	3" cal.	BB
Ex	*Existing tree to remain*	*Existing tree to remain*			
Ham	*Hamamelis x 'Arnold Promis'*	Arnold Promise Witch Hazel	2	7-8' ht.	BB multi-stemmed
JV	*Juniperus virginiana ' Manhattan Blue'*	Manhattan Blue Eastern Red Cedar	5	7-8' ht.	BB
Mal	*Malus 'Tina'*	Tina Crabapple	2	2.5" cal.	BB
Mal2	*Malus 'Sugartyme'*	Sugar Tyme Crabapple	1	2.5" cal.	BB
QR	*Quercus rubra*	Northern Red Oak	2	3" cal	BB
UA	*Ulmus americana 'Princeton'*	Princeton Elm	3	3" cal	BB

SHRUBS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
CIH	*Cornus 'Ivory Halo'*	Ivory Halo Dogwood	12	2-5'3' ht	BB
CL	*Clethra alnifolia 'Hummingbird'*	Hummingbird Clethra	258	3 gal	min. 30" ht
HY	*Hydrangea macrophylla 'All Summer Beauty'*	All Summer Beauty Hydrangea (Blue	5	3 gal	min. 30" ht
HY2	*Hydrangea paniculata 'Little Quickfire'*	Little Quickfire Panicle Hydrangea	10	5 gal	min. 30" ht
HYA	*Hydrangea a. 'Incrediball'*	Incrediball Hydrangea	34	5 gal	min. 30" ht
HyP	*Hydrangea paniculata 'Limelight'*	Limelight Hydrangea	4	10 gal	treeform, min. 30" ht
Ig	*Ilex glabra 'Shamrock'*	Shamrock Inkberry	25	5 gal	min. 18" ht./spread
Jc	*Juniperus communis*	Common Juniper	162	3 gal	min. 18" ht./spread
MP	*Myrica pennsylvanica*	Bayberry	60	5 gal	min. 30" ht
RH	*Rhododendron chionoides*	Chioniodes Rhododendron	11	5 gal	min. 18" ht./spread
Rh2	*Rhododendron 'Wilsoni'*	Wilson Rhododendron	10	3 gal	min. 18" ht./spread
RHUS	*Rhus aromatica 'Grow Low'*	Grow Low Sumac	210	3 gal	min. 30" ht
Rv	*Rosa virginiana*	Virginia Rose	41	2.5-3'	
SP	*Spirea latifolia 'Pink Mountain'*	Pink Mountain Spirea	96	3 gal	min. 30" ht
Tax	*Taxus media 'Everlow'*	Everlow Yew	25	3 gal	min. 18" ht./spread

PERENNIALS, GROUNDCOVERS, VINES and ANNUALS *Perennials to be located in Field by Landscape Architect*

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Arc	*Arctostaphylos uva-ursi*	Bearberry	80	1 gal	min. 2 yr clumps
CAL	*Calamagrostis acutifolia 'Karl Foerster'*	Feather Reed Grass	14	1 gal	min. 2 yr clumps
DAY	*Daylily mix*	Mixed Daylilies	59	1 gal	min. 2 yr clumps
SED	Sedum 'Autumn Joy'	Autumn Joy Sedum	14	1 gal	min. 2 yr clumps
PENN	*Pennisetum alopecuroides 'Hameln'*	Hameln Dwarf Fountain Grass	14	1 gal	min. 2 yr clumps



woodburn & company
LANDSCAPE ARCHITECTURE
103 Kent Place Newmarket, New Hampshire Phone: 603.659.5949

35 Badger's Island West

LANDSCAPE PLAN

for Hampshire Development Corporation

35 Badger's Island West, Kittery, Maine

Drawn By:	WSA
Checked By:	RW
Scale:	1"=20'-0"
Date:	2023-05-25 for PB submission
Revisions:	

L-1

Sheet 1 of 1

Jason Garnham

From: Michael Rogers <mrogerskwd@gmail.com>
Sent: Wednesday, July 5, 2023 3:33 PM
To: Jason Garnham
Cc: Carl Palm; John Chagnon; Brandon Holben, AIA
Subject: Re: 35 Badgers Island: water available?

Thanks Jason,
From a water consumption perspective this does not affect my decision, however a licensed Fire Protection Company will need to make the call if the 6" line and available flow is sufficient. I hope that it is, because the entire Island is supplied with a 6" main!
Mike

Michael S. Rogers, Superintendent
Kittery Water District
17 State Road
Kittery, ME 03904
TEL 207-439-1128
FAX 207-439-8549
CELL 207-451-8316
Email mrogerskwd@gmail.com
(please note, the mikerkwd@comcast.net email address is no longer in use)

On Wed, Jul 5, 2023 at 3:25 PM Jason Garnham <JGarnham@kitteryme.org> wrote:

> Mike,
>
> The applicant is proposing two additions, one @ 3,500 sf footprint on the north and one @ 3,000 sf footprint on the south, both 3 stories with parking underneath. I understand that the number of people in the building will be significantly reduced from the Greenpages use but I'm unsure about the fire suppression system needs. Does this change anything from your point of view?
>
> Thanks again,
>
> -Jason

From: Michael Rogers <mrogerskwd@gmail.com>
Sent: Wednesday, July 5, 2023 3:20 PM
To: Jason Garnham <JGarnham@kitteryme.org>; Carl Palm <carlpkwd@comcast.net>
Cc: John Chagnon <jchagnon@haleyward.com>; Brandon Holben, AIA <brandon@winterholben.com>
Subject: Re: 35 Badgers Island: water available?

Hi Jason,

I was unfamiliar with the plans for this project. After realizing that the former Green Pages building is not changing in size, only the use, going from commercial to residential, whereas this building is supplied by a 6" water main, I have no concerns with the number of living units being increased.

Thank you.

Mike

Michael S. Rogers, Superintendent

Kittery Water District

17 State Road

Kittery, ME 03904

TEL 207-439-1128

FAX 207-439-8549

CELL 207-451-8316

Email mrogerskwd@gmail.com

(please note, the mikerkwd@comcast.net email address is no longer in use)

On Wed, Jul 5, 2023 at 2:54 PM Michael Rogers <mrogerskwd@gmail.com> wrote:

> Thank you Jason. I will look over this information and get back to you.
>
> Mike
>
> Michael S. Rogers, Superintendent
>
> Kittery Water District
>
> 17 State Road
>
> Kittery, ME 03904
>
> TEL 207-439-1128
>
> FAX 207-439-8549
>
> CELL 207-451-8316
>
> Email mrogerskwd@gmail.com
>
> (please note, the mikerkwd@comcast.net email address is no longer in use)

On Wed, Jul 5, 2023 at 2:45 PM Jason Garnham <JGarnham@kitteryme.org> wrote:

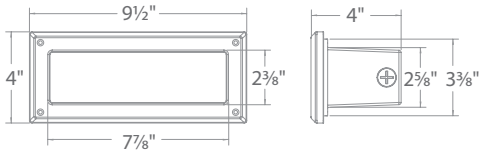
> Mike,
>
> The planning board is looking at revised plans for a 10-unit residential condo project at 35 Badgers Island West. It's a conversion of, and additions to, the former Greenpages building. The plan set is too big to share via email. The old plans are in a couple of planning board packets: item_1_35_badgers_island_west_combined.pdf (kitteryme.gov)
>
> Can you please verify whether existing KWD water facilities are available to serve the project? I don't have the fire flow calculations off-hand. I included the design engineer and architect for the project on this email in hopes they can provide you with the data you need. Please reply all with any questions or comments so we call all be on the same page @ what is needed, etc.
>
> Much appreciated,
>
> -Jason

207-475-1307

OPAL BRICK LIGHTS Endurance™

WL-5105

WAC LIGHTING
Responsible Lighting®



Fixture Type:

Catalog Number:

Project:

Location:

LOCATION: Recessed into retaining wall, light facing driveway

PRODUCT DESCRIPTION

Die cast aluminum factory sealed housings with patent pending design for a water and dust proofing. IP66 rated outdoor brick light.

FEATURES

- IP66 and ETL & cETL Wet Location Listed
- ADA Compliant
- Factory-Sealed LED Light Engine
- Die-Cast Aluminum Construction (K-Alloy)
- 120V Direct Wire - No Driver Needed
- Frosted tempered glass lens for even illumination.

SPECIFICATIONS

Construction: Die-cast aluminum (K-Alloy)

Power: Line Voltage input (120V), 50/60Hz

CRI: 90

Dimming: 100% - 10% with Electronic Low Voltage (ELV) dimmer

Finish: Architectural Bronze, Black, Graphite and White

Standards: IP66, ADA, ETL & cETL Wet Location Listed

Rated Life: 80,000 hours

Operating Temperature: -40°C to 50°C (-40°F to 122°F)

ORDER NUMBER

		Power	*Max Delivered Lumens*	*Color Temp*	*Finish*		
WL-5105-30	*Opal*	*5.5W*	*110*	*3000K*	**ABZ** **ABK** **AGH** **AWT**	*Architectural Bronze* *Architectural Black* *Architectural Graphite* *Architectural White*	

Example: **WL-5105-30-AGH**

WAC Lighting
www.waclighting.com
Phone (800) 526.2588 • Fax (800) 526.2585

Headquarters/Eastern Distribution Center
44 Harbor Park Drive • Port Washington, NY 11050
Phone (516) 515.5000 • Fax (516) 515.5050

Western Distribution Center
1750 Archibald Avenue • Ontario, CA 91760
Phone (800) 526.2588 • Fax (800) 526.2585

WAC LIGHTING

Fixture Type:

Catalog Number:

Project:

Location:

Cylinder

Wall Mount 3000K

Model	*Color Temp & CRI*	*Lumens*	*Finish*
❍ WS-W190208	❍ 30 3000K - 80	260	❍ BK Black
◎ WS-W190212		515	◎ BZ Bronze
			◎ WT White

LOCATION: Surface mounted on walls at entry points (exterior doors)

Example: **WS-W190208-30-BK**

FEATURES

- Multiple LED array for uniform illumination
- ACLED driverless technology
- 5 Year warranty

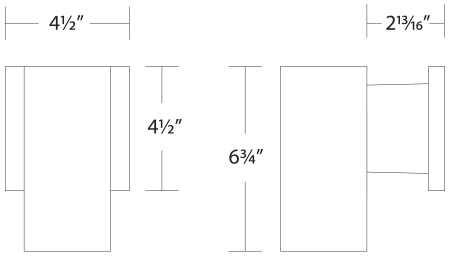
SPECIFICATIONS

Construction:	Die-cast aluminum
Power:	18W, 6W
Input:	120 VAC, 50/60Hz
Dimming:	ELV: 100-10%
Light Source:	Integrated LED
Lens:	Glass Lens
Rated Life:	50000 Hours
Mounting:	Installs over a 3" or 4" Junction Box, Can be mounted on wall in all orientations
Finish:	Electrostatically Powder Coated White, Bronze, Black
Operating Temp:	-40°F to 122°F (-40°C to 50°C)
Standards:	ETL, cETL, Wet Location Listed, ADA

FINISHES

Black Bronze White

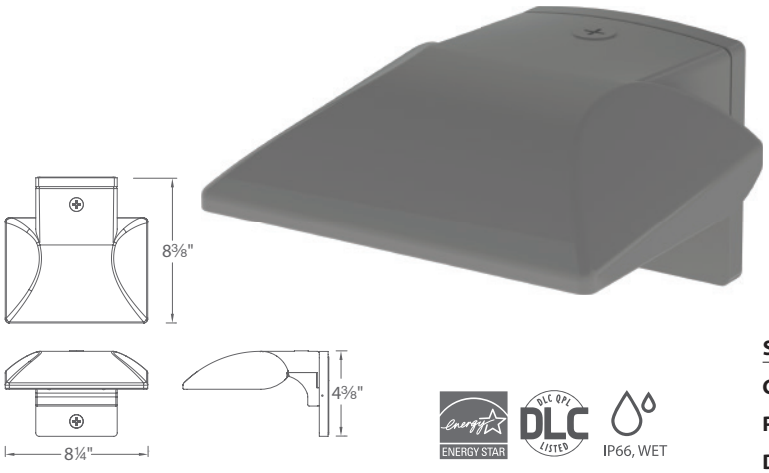
LINE DRAWING



HAWK - model: WP-LED2

Endurance Wallpack

WAC LIGHTING
Responsible Lighting®



IP66, WET

Fixture Type:

Catalog Number:

Project:

Location:

LOCATION: Above garage door entries

SPECIFICATIONS

Construction: Die-cast aluminum

Power: Integral driver in luminaire. Universal voltage input (120V-277V)

Dimming: 100% - 30% with 0 - 10V dimmer (120V - 277V)
100% - 15% with Electronic Low Voltage (ELV) dimmer (120V only)

Finish: Powder coated Bronze, Graphite, and White

Standards: Energy Star®, DLC Listed, IP66, Wet Location, ETL & cETL Listed

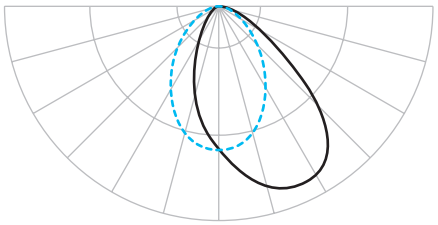
PRODUCT DESCRIPTION

Die cast aluminum factory sealed housings with patent pending design for a water and dust proof IP66 rated outdoor luminaire

FEATURES

- Factory-Sealed LED Light Engine
- Die-Cast Aluminum Construction
- 20° Forward Throw Illumination
- Photo/Motion Sensor Compatible (Sold Separately)
- Built-in Level For Easy Adjustment
- Suitable to install in all directions
- Multi-Function Dimming: ELV (120V) or 0-10V
- 85 CRI
- 100,000 hour rated life

PHOTOMETRY



ORDER NUMBER

		Power	Comparable	Delivered Lumens 3000K	Delivered Lumens 5000K	Color Temp		Finish		
	**WP-LED219**	*19W*	*39W HID*	*1345*	*1435*	**30**	*3000K*	**BZ**	*Bronze*	
	WP-LED227	*27W*	*70W HID*	*2050*	*2095*	**50**	*5000K*	**GH**	*Graphite*	
								WT	*White*	

[ ] – [ ] – [ ]

Example: **WP-LED219-30-GH**

ACCESSORIES

Motion Sensor (120V)

MS-120-BZ	*Bronze*
MS-120-GY	*Gray*
MS-120-WT	*White*

Photo Sensor (120V)

PC-120-BZ	*Bronze*
PC-120-GY	*Gray*
PC-120-WT	*White*

WAC Lighting
www.waclighting.com
Phone (800) 526.2588 • Fax (800) 526.2585

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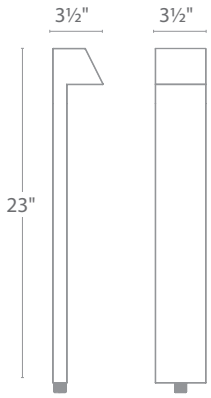
QUAD LED PATH LIGHT

6091

WAC LANDSCAPE LIGHTING



Fixture Type:

Catalog Number:

Project:

Location:

LOCATION: Landscape lighting at pathways

PRODUCT DESCRIPTION

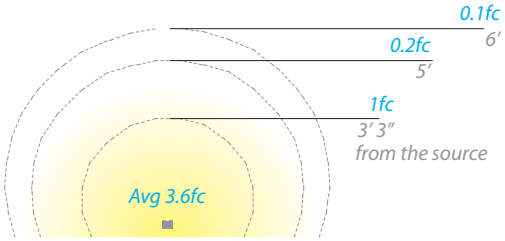
Sleek linear design blends seamlessly into pathways while providing soft, even illumination

SPECIFICATIONS

Input: 9-15VAC (Transformer is required)
Power: 3.0W / 4.5VA
Brightness: Up to 100 lm
CRI: 90
Rated Life: 60,000 hours

FEATURES

- IP66 rated, Protected against powerful water jets
- Factory sealed water tight fixtures
- Solid diecast corrosion resistant aluminum alloy
- Recommended spacing for installation: Residential 8 to 10ft; Commercial: 5 to 7ft
- Mounting stake, 6 foot lead wire, and direct burial gel filled wire nuts are included
- Maintains constant lumen output against voltage drop
- UL & cUL 1838 Listed



ORDERING NUMBER

		Color Temp		Finish	
6091	*Quad*	**27** **30**	*2700K Warm White* *3000K Pure White*	**BZ**	*Bronze on Aluminum*

6091-____BZ

Example: **6091-30BZ**

waclighting.com
Phone (800) 526.2588
Fax (800) 526.2585

Headquarters/Eastern Distribution Center
44 Harbor Park Drive
Port Washington, NY 11050

Central Distribution Center
1600 Distribution Ct
Lithia Springs, GA 30122

Western Distribution Center
1750 Archibald Avenue
Ontario, CA 91760

QUAD LED PATH LIGHT

6091

WAC LANDSCAPE LIGHTING

Surface Mount Flange/Stake

Includes three 7 inch threaded stainless steel stabilizing pins for ground mounting or surface mounts with four screws or over a junction box

5000-SCP-BZ
Bronze on Aluminum

Additional Mounting Stake

9000-ST9-BK
Durable PVC stake

Guardian Mount

Heavy duty stainless steel spike to position fixture. Formed from a single piece of metal

9000-SP9-BZ
Stainless Steel

Magnetic Transformers

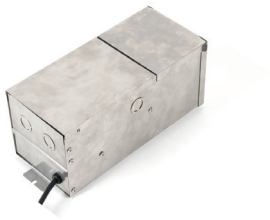
Stainless Steel, 12-15V output, IP65 rated, UL 1838 listed
See transformer spec sheet for details and its accessories

9075-TRN-SS
75W Max

9150-TRN-SS
150W Max

9300-TRN-SS
300W Max

9600-TRN-SS
600W Max



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