



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

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

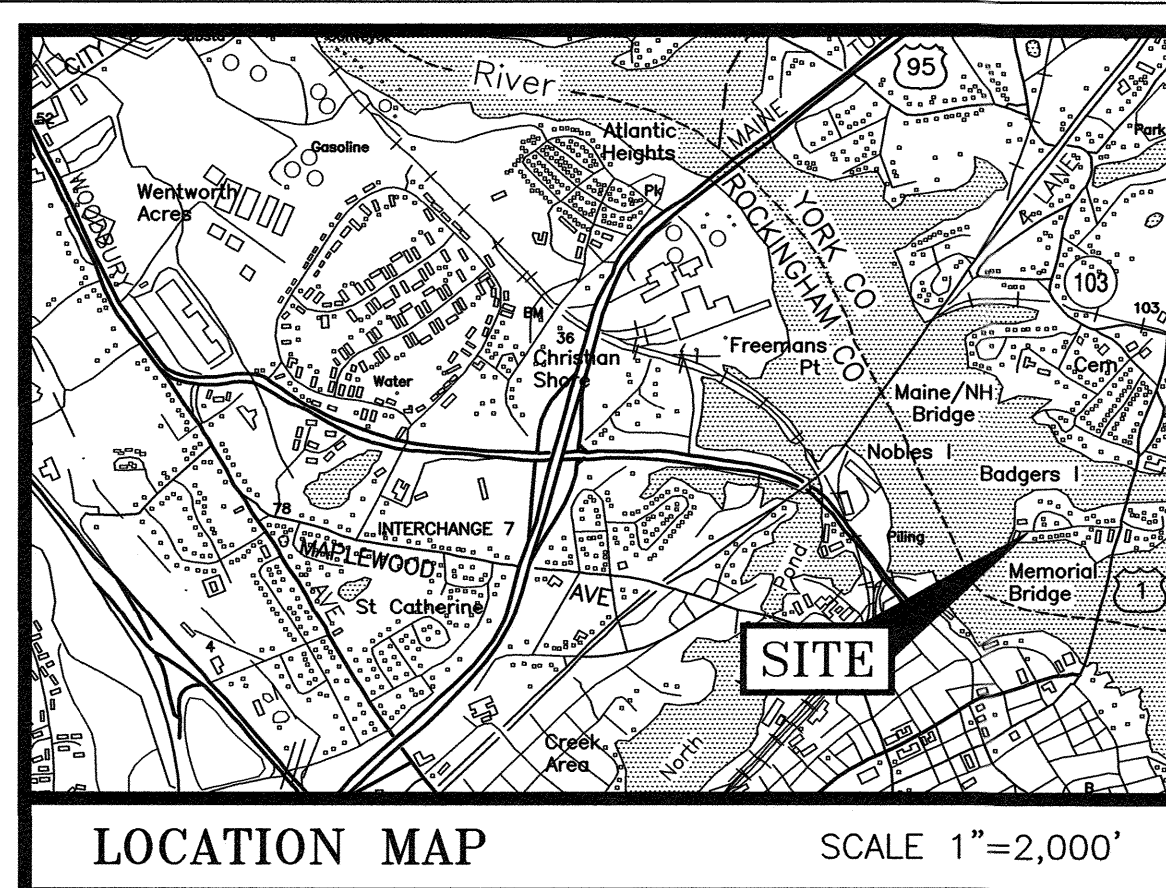
Lower Confidence Limits

	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
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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





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
---	MEAN HIGH WATER LINE
---	MEAN SEA LEVEL
---	MEAN LOW WATER
---	MEAN LOWER LOW WATER
---	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
97.3	SPOT ELEVATION
○	IRON ROD/PIPE FOUND
●	IRON ROD SET
---	EDGE OF PAVEMENT (EP)
---	WOODS / TREE LINE
---	UTILITY POLE (w/ GUY)
---	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

LEGEND (CONTINUED)

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

PLAN REFERENCES:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

PISCATAQUA RIVER (TIDAL)

INTERTIDAL AREA SEE NOTE 6

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.

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%

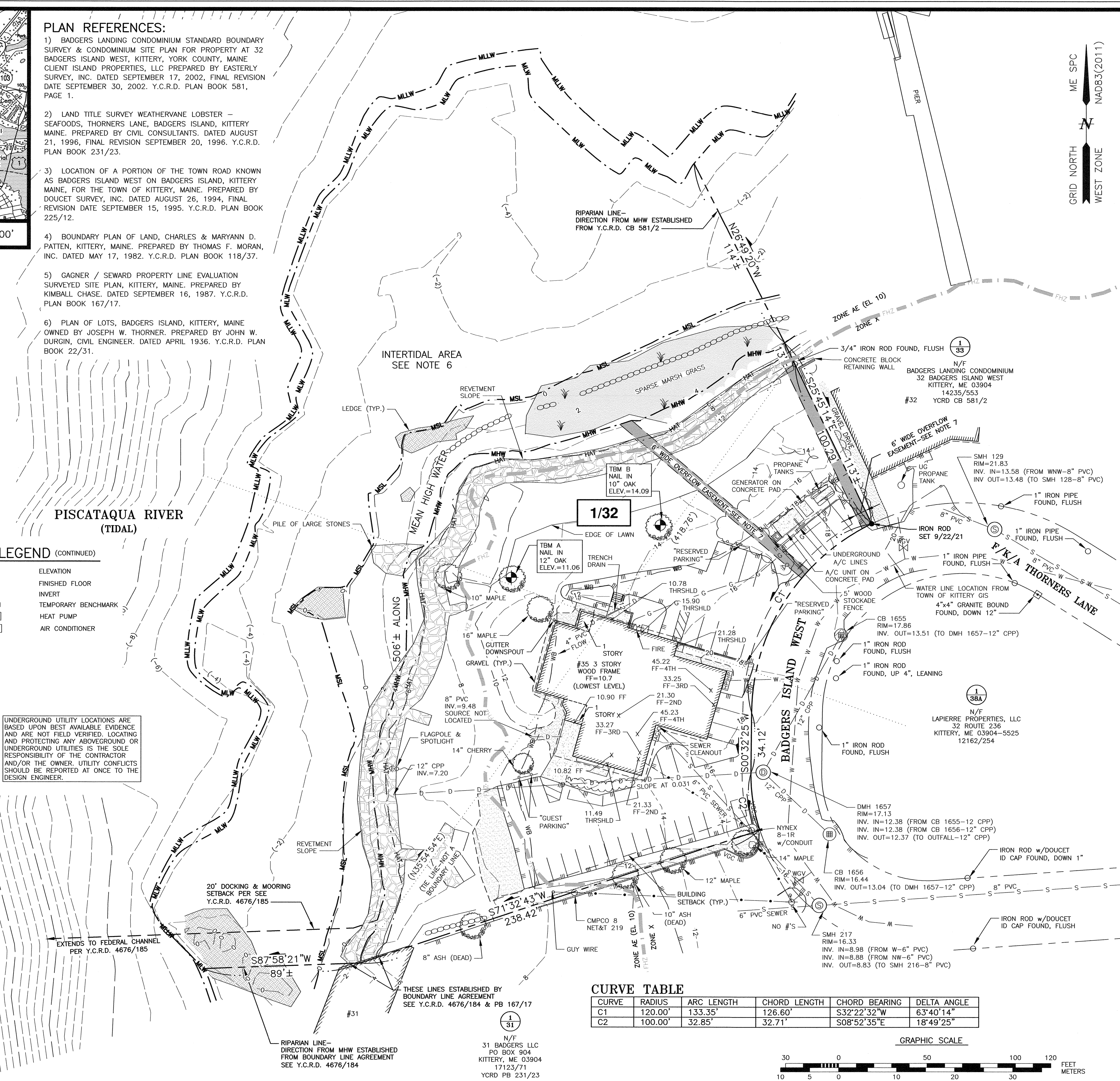
PURSUANT TO CHAPTER 90 PARTS 1 AND 2 OF THE SURVEY STANDARDS OF PRACTICE AS ADOPTED BY THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS, THE FOLLOWING EXCEPTIONS TO PART 2 ARE NOTED:

- NO SURVEY REPORT HAS BEEN PREPARED.
- NO LAND DESCRIPTION HAS BEEN PREPARED.
- 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

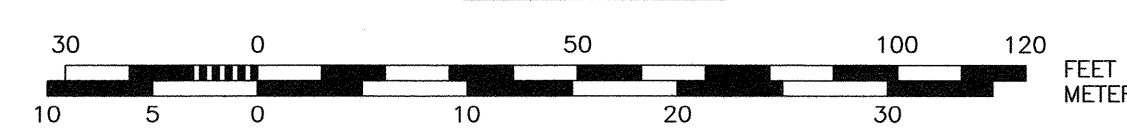
DATE 5.10.23



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



200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.7262

WWW.HALEYWARD.COM

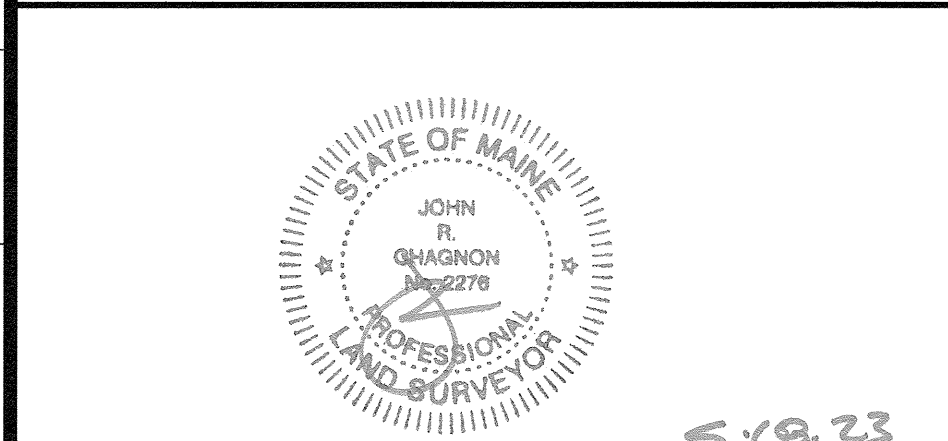
NOTES:

- PARCEL IS SHOWN ON THE TOWN OF KITTERY ASSESSOR'S MAP 1 AS LOT 32.
- 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)
- A PORTION OF THE PARCEL IS IN A SPECIAL FLOOD HAZARD AREA, ZONE AE (EL 10), AS SHOWN ON PRELIMINARY FIRM PANEL 23031C07096, REVISED PRELIMINARY 4/14/2017.
- EXISTING LOT AREA:
58,985± S.F. (TO MEAN HIGH WATER)
1.3541± ACRES (TO MEAN HIGH WATER)
- 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.
- 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%
- THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON ASSESSOR'S MAP 1 LOT 32 IN THE TOWN OF KITTERY.
- 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.
- AREA BETWEEN MEAN HIGH WATER AND MEAN LOW WATER ARE SUBJECT TO THE RIGHTS OF THE PUBLIC.
- 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.
- 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



SCALE 1"=30' AUGUST 2021

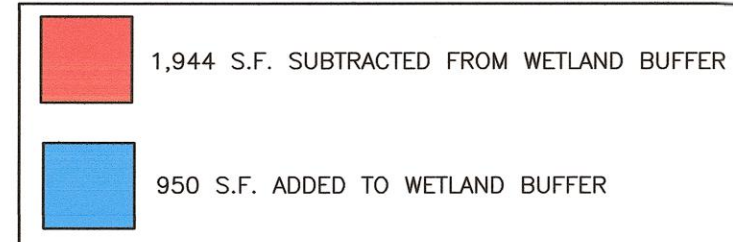
EXISTING CONDITIONS PLAN

C1

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
REVEGETATION/RIPRAP	5,392	5,392
TOTAL	26,923	22,436
LOT SIZE	54,883	54,883
% DEVEGETATED AREA	49.1%	40.9%

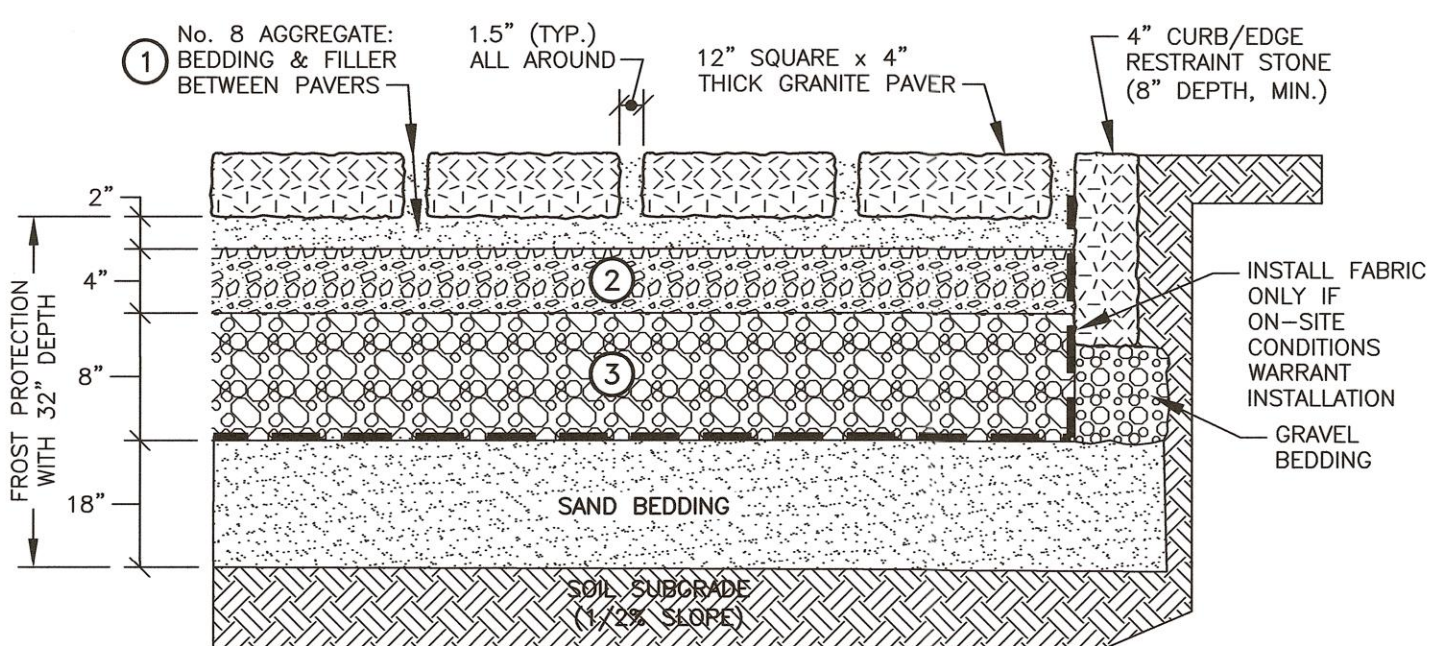
* FROM RECENT APPROVAL. OPEN SPACE: 59%



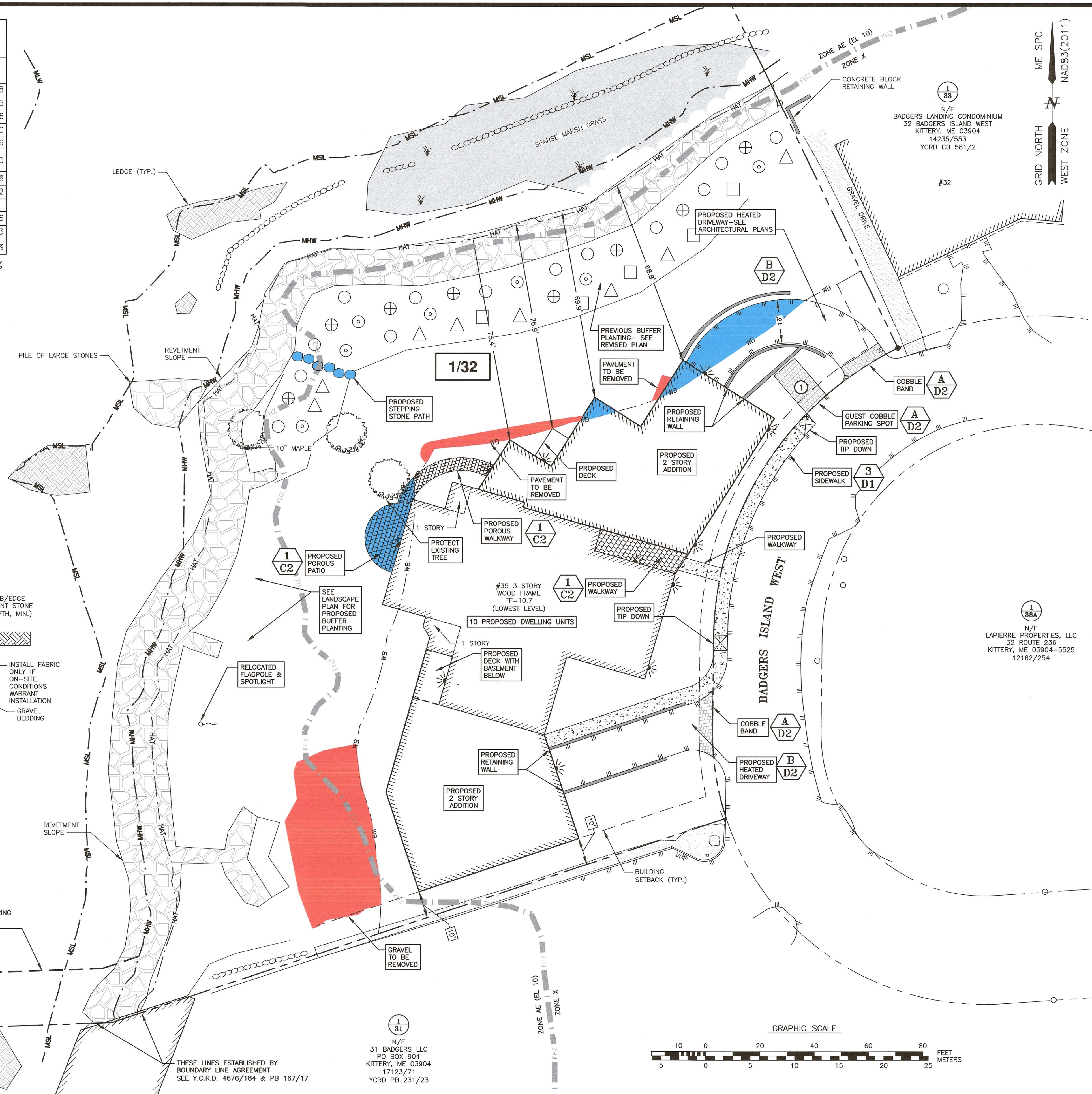
ASTM D 448 GRADATION TABLE

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 POROUS PATIO/WALKWAY DETAIL
NTS



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

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Portsmouth, NH 03801
603.430.9282

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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
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%
 - 7) 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.
 - 8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS. MHW, MSL, MLW, AND MLLW BASED ON NOAA STATION 8419B70-SEAVEY ISLAND, PORTSMOUTH HARBOR, ME.
 - 9) AREA BETWEEN MEAN HIGH WATER AND MEAN LOW WATER ARE SUBJECT TO THE RIGHTS OF THE PUBLIC.
 - 10) HIGHEST ANNUAL TIDE LINE SHOWN AT ELEVATION 5.8 PER LOCATION SEAVEY ISLAND IN MAINE DEP HIGHEST ANNUAL TIDE (HAT) LEVELS FOR YEAR 2018.
 - 11) 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

STATE OF MAINE
JOHN R. CHAGNON
NO. 9950
LICENSED PROFESSIONAL ENGINEER

STATE OF MAINE
JOHN R. CHAGNON
NO. 9950
LICENSED PROFESSIONAL LAND SURVEYOR

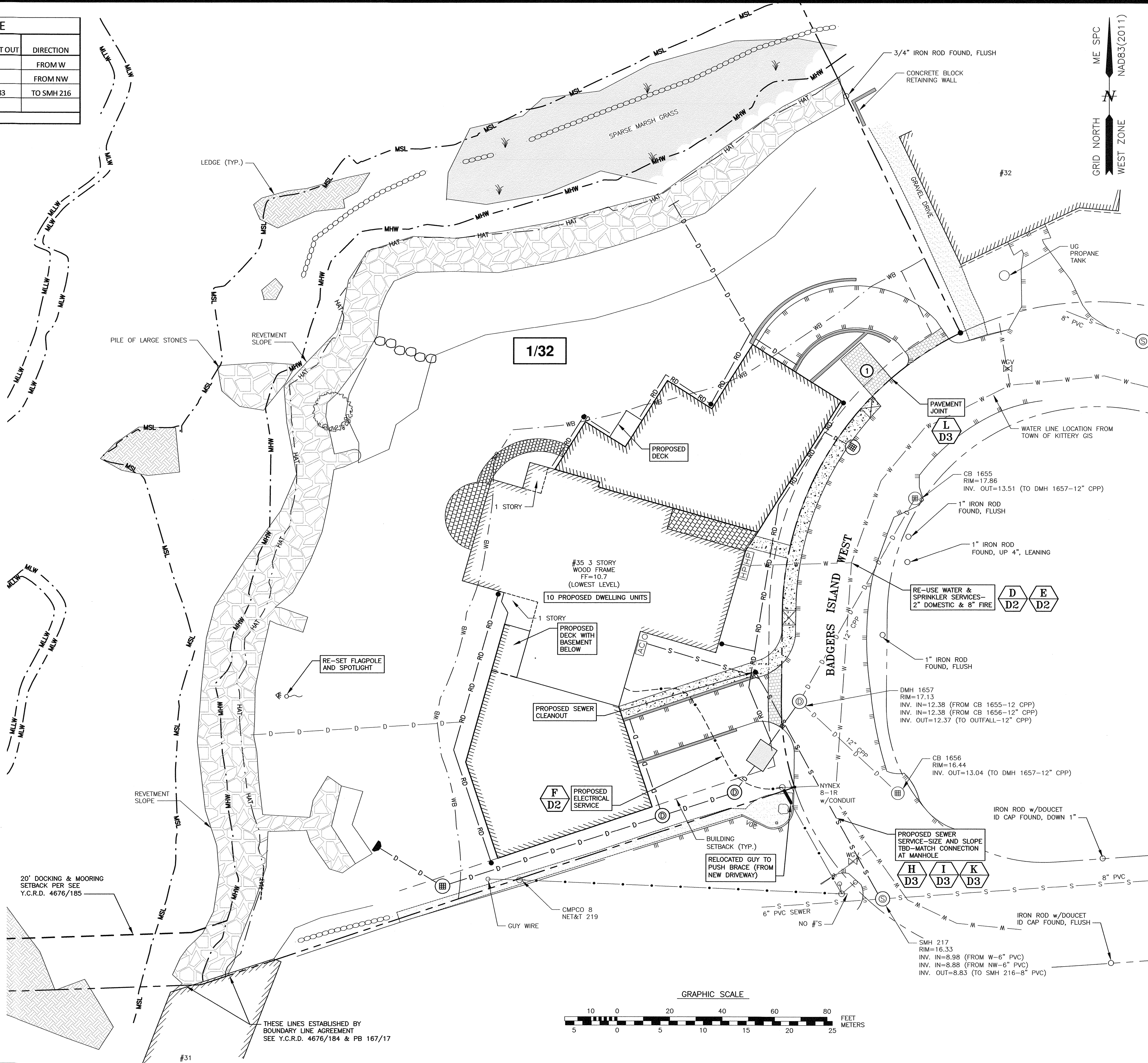
318-23

SCALE 1"=20' AUGUST 2022

SHORELAND DEVELOPMENT PLAN

C2

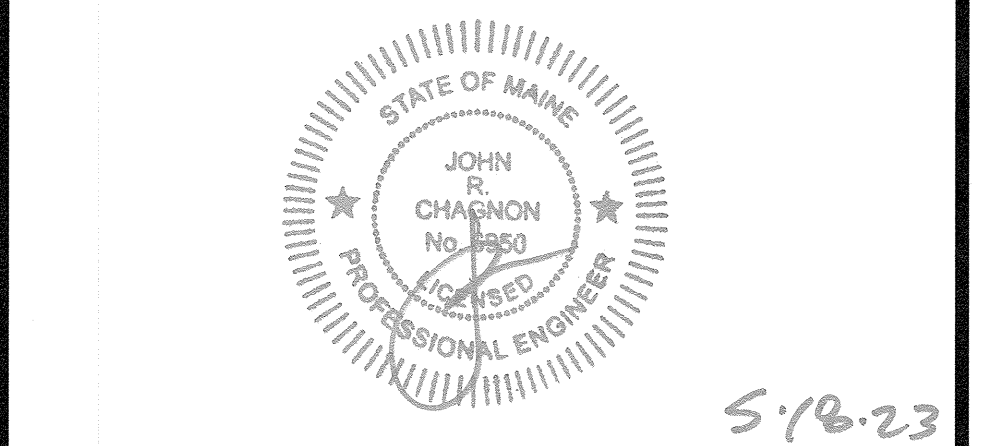
SEWER STRUCTURE SCHEDULE						
STRUCTURE	PROP/EX	RIM	PIPE SIZE/TYPE	INVERT IN	INVERT OUT	DIRECTION
SMH 217	EX	16.33	6" PVC	8.98		FROM W
			6" PVC	8.88		FROM NW
			8" PVC		8.83	TO SMH 216



- 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



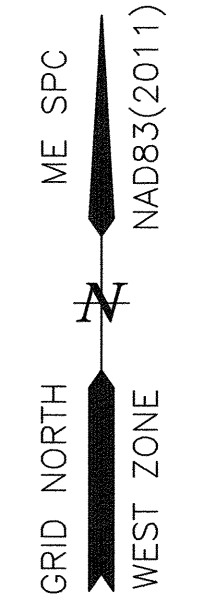
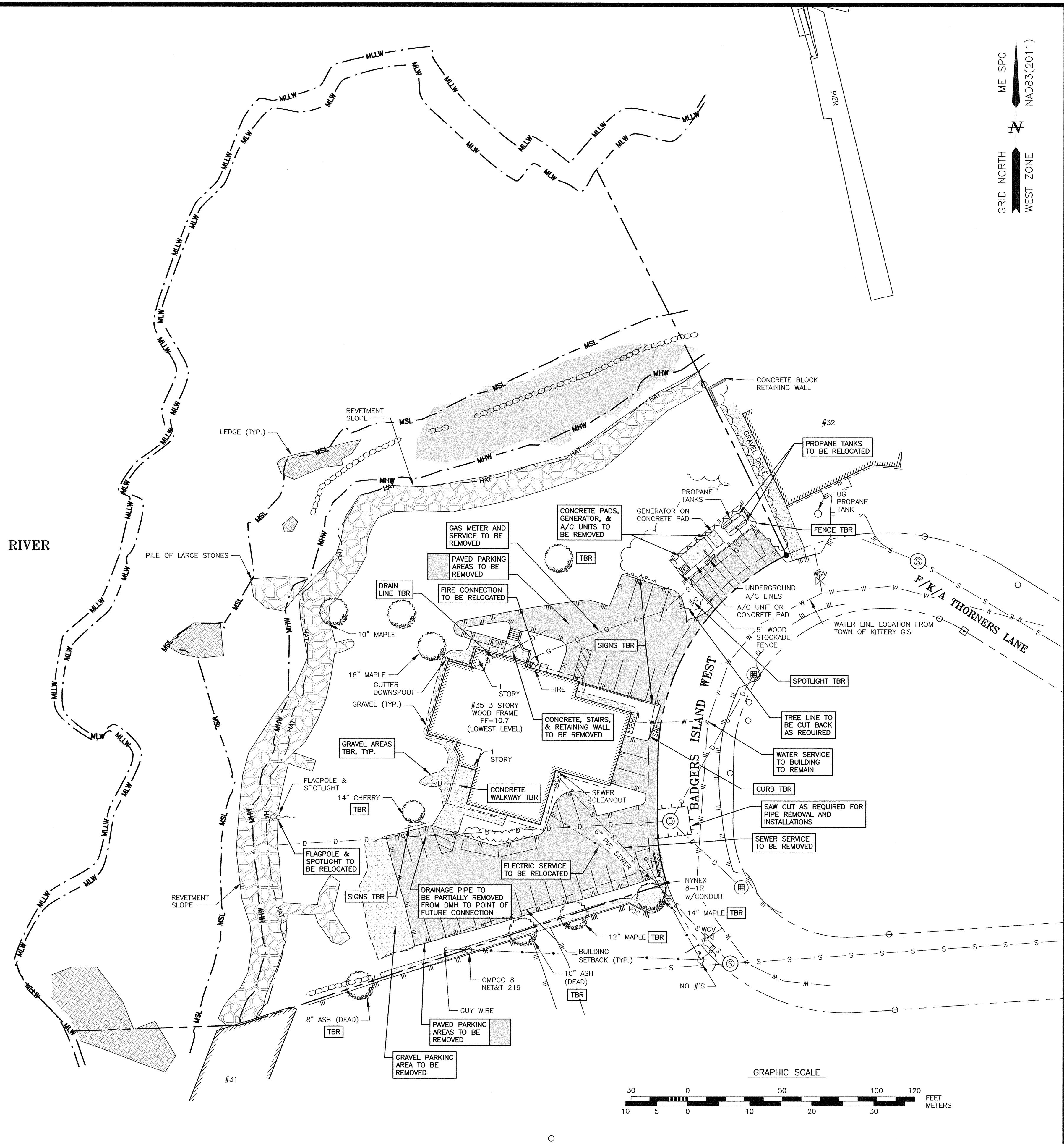
SCALE 1"=20' AUGUST 2022

UTILITY PLAN **C3**

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 KITTEERY RIGHT OF WAY SHALL BE COORDINATED WITH THE TOWN OF KITTEERY 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

PISCATAQUA RIVER
(TIDAL)



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Portsmouth, NH 03801
603.430.9282

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- NOTES:**
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 - 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
KITTEERY, MAINE**

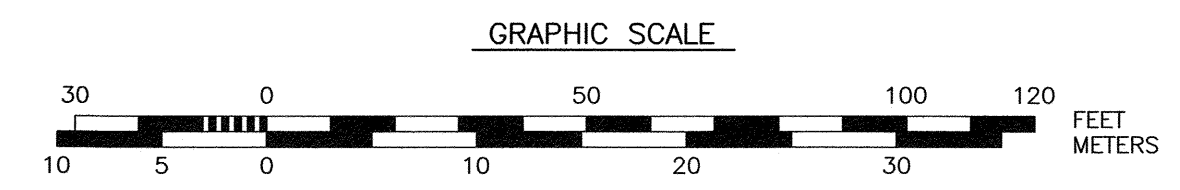
NO.	DESCRIPTION	DATE
2	SEWER & DRAINAGE LINES	5/18/23
1	14" CHERRY TBR	5/15/23
0	ISSUED FOR APPROVAL	1/19/23

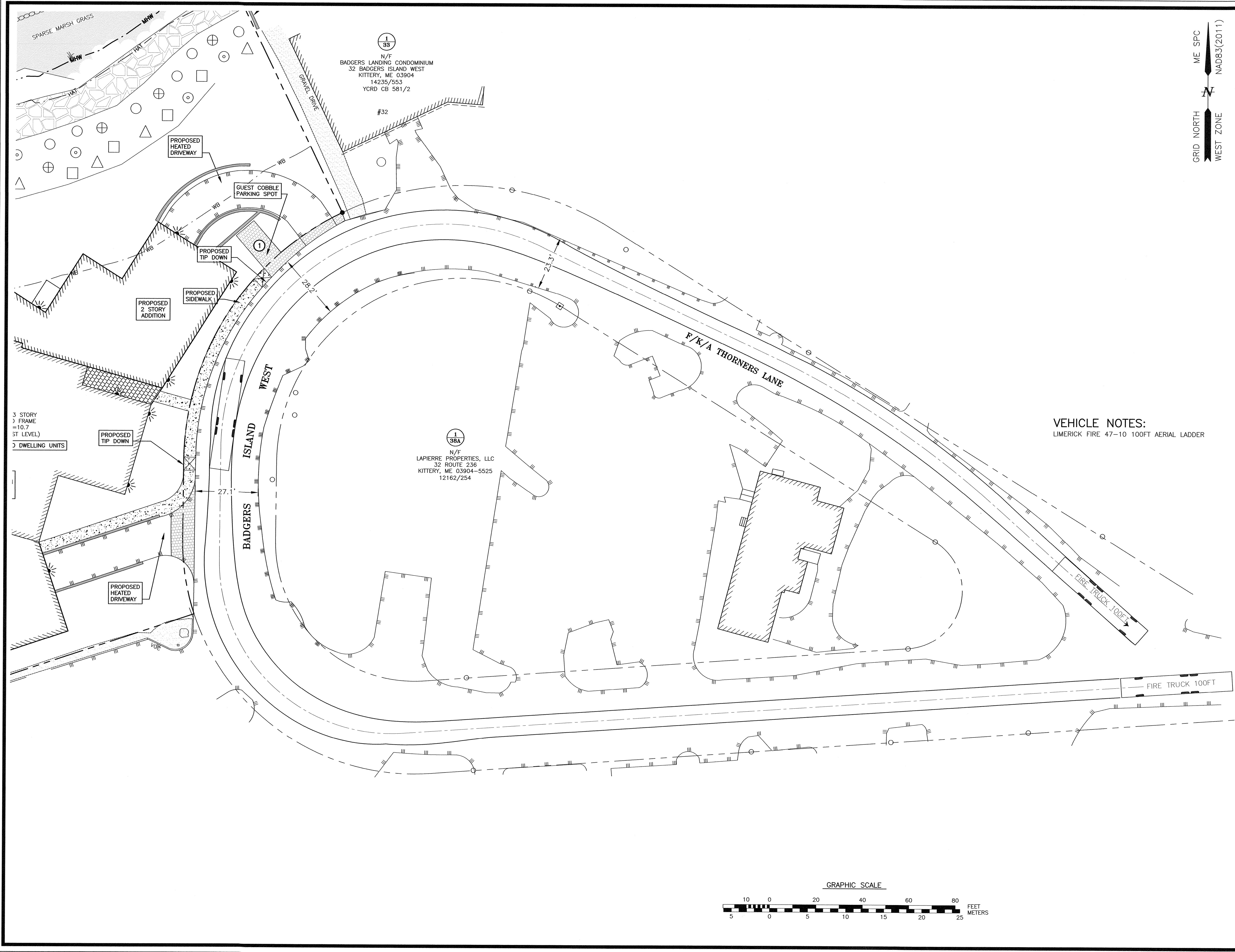
REVISIONS

5/18/23

SCALE 1"=30' AUGUST 2021

DEMOLITION PLAN **C5**





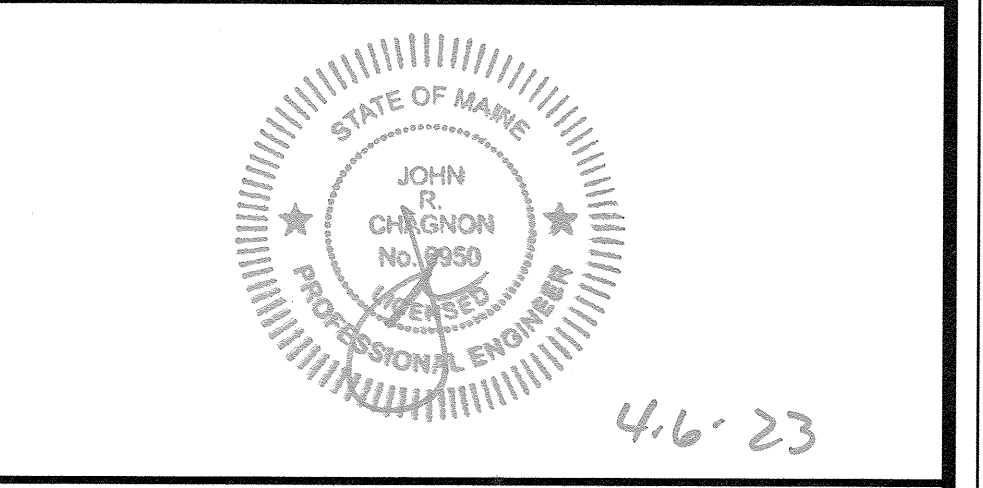
NOTES:

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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.

VEHICLE NOTES:
 LIMERICK FIRE 47-10 100FT AERIAL LADDER

**SITE DEVELOPMENT
 35 BADGERS
 ISLAND WEST
 KITTERY, MAINE**

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



SCALE 1"=20' AUGUST 2022

**TURNING TEMPLATE
 PLAN**

T1

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 SILTOSOXX 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 SILTOSOXX. 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 RESEEDING, 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)

GENERAL COVER	PROPORTION	SEEDING RATE
CREeping RED FESCUE	42%	
TALL FESCUE	42%	48 LBS/ACRE
BIRDSFOOT TREFLOIL	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 RESEEDING 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 RESEEDING 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.

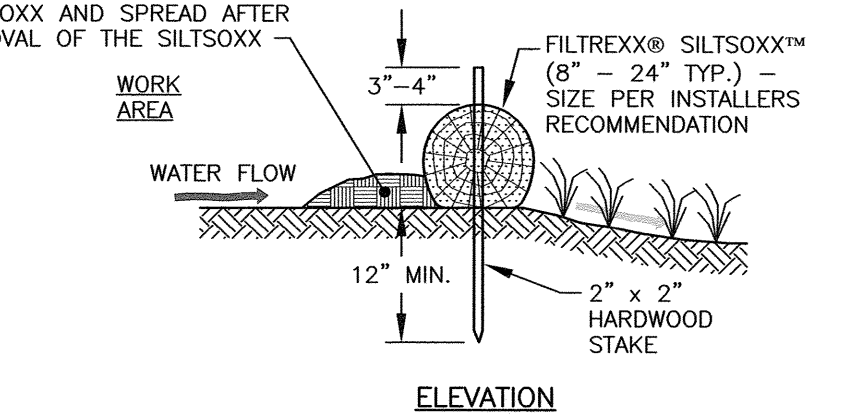
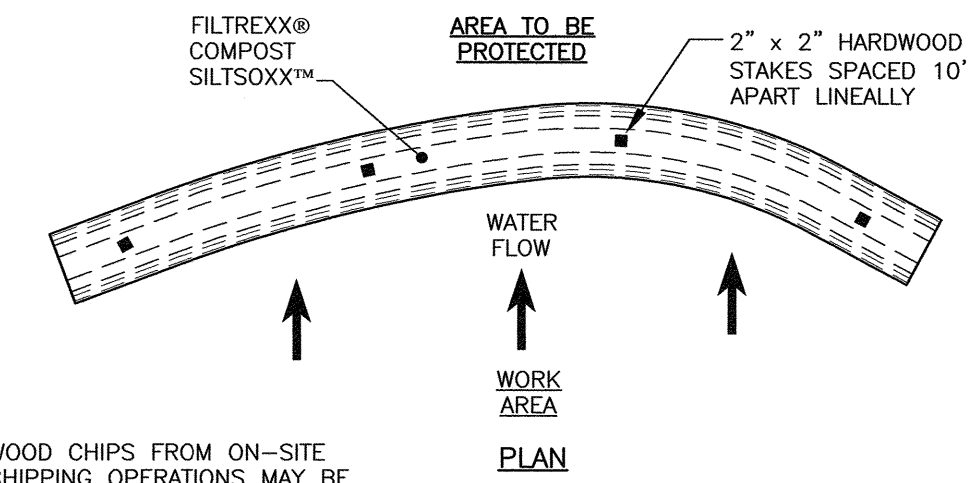
STRUCTURAL BMP'S

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

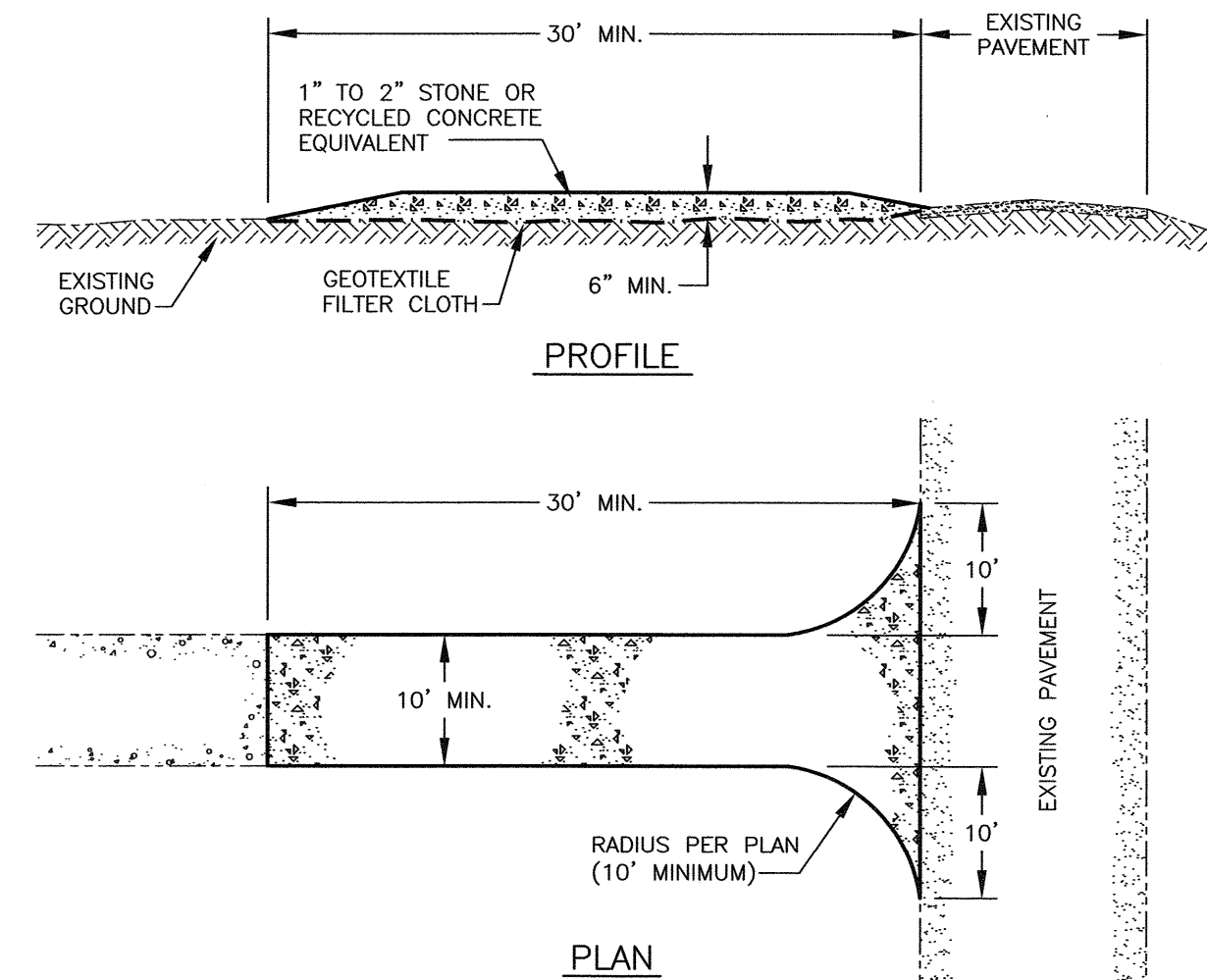
THE FOLLOWING SUMMARIZES THE INSPECTION AND MAINTENANCE REQUIREMENTS FOR THE VARIOUS BMP'S THAT MAY BE FOUND ON THIS PROJECT:

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-STRIPE 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.



- NOTES:**
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
 2. FILTREXX 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. SILTOSOXX 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 FILTREXX® SILTOSOXX™ FILTRATION SYSTEM NTS (AS NEEDED)



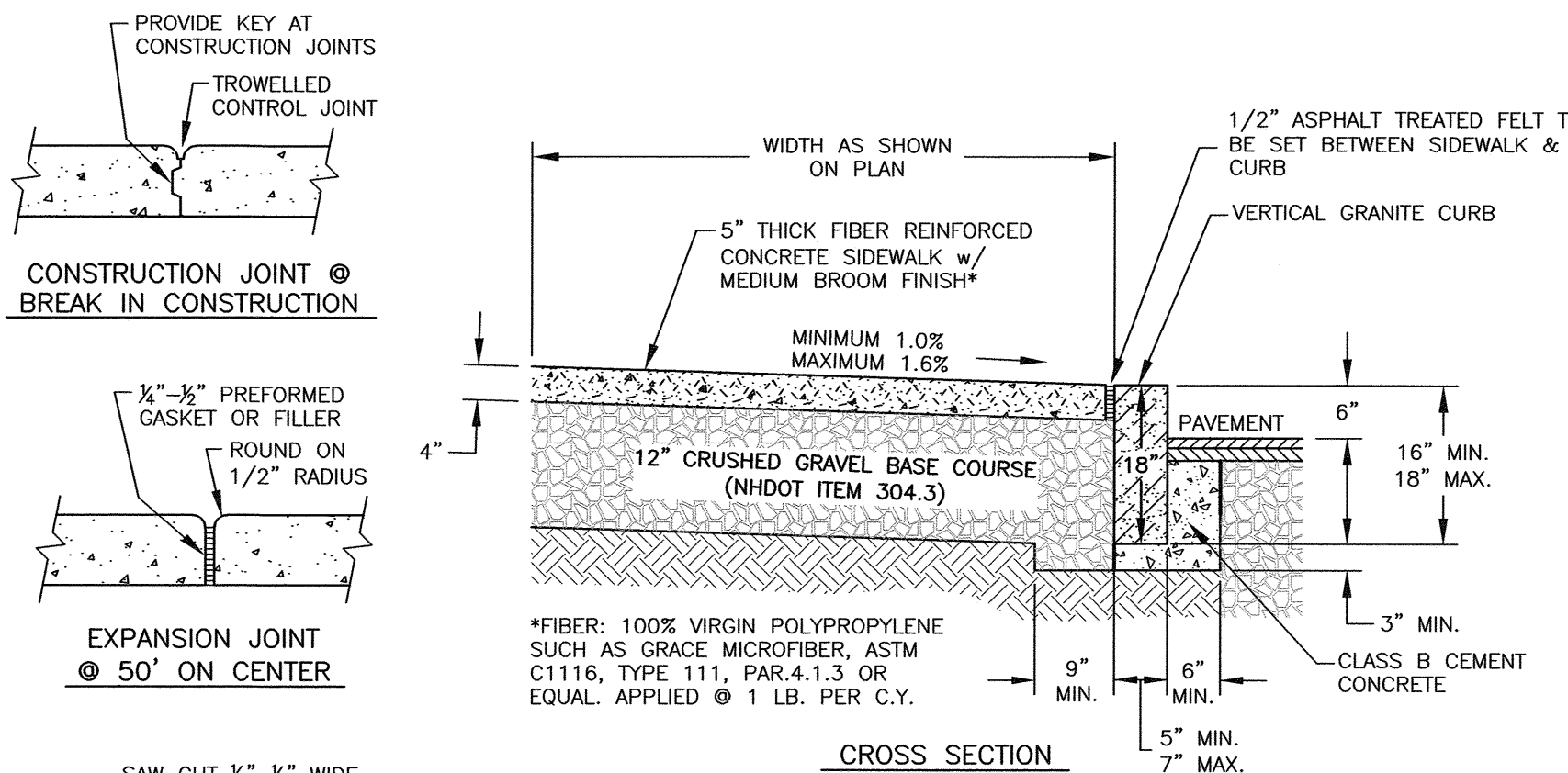
MAINTENANCE

- 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.

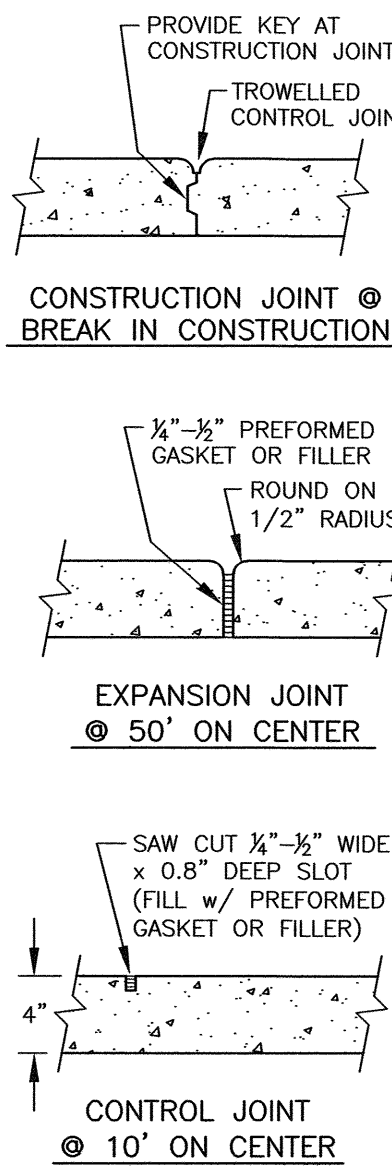
CONSTRUCTION SPECIFICATIONS

- 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 STABILIZED CONSTRUCTION ENTRANCE NTS (C4) SUBSTITUTE FODS IF DESIRED



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



200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

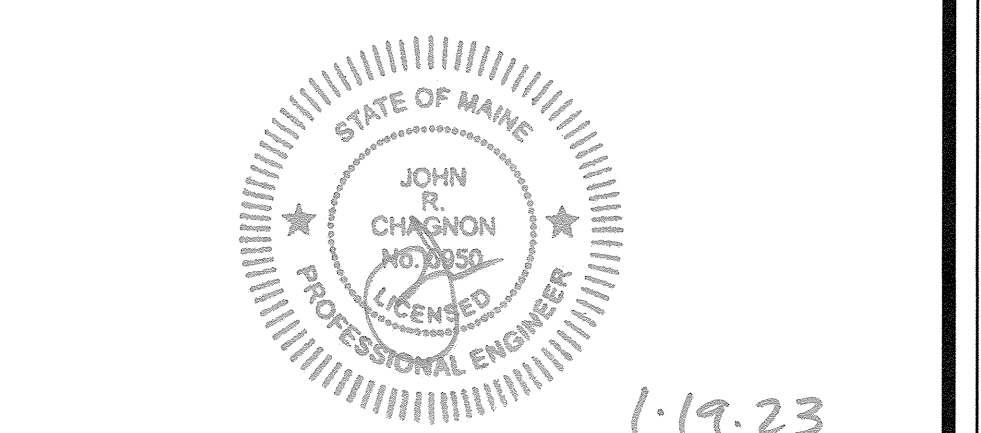
WWW.HALEYWARD.COM

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 APPROVAL	1/19/23
REVISIONS		

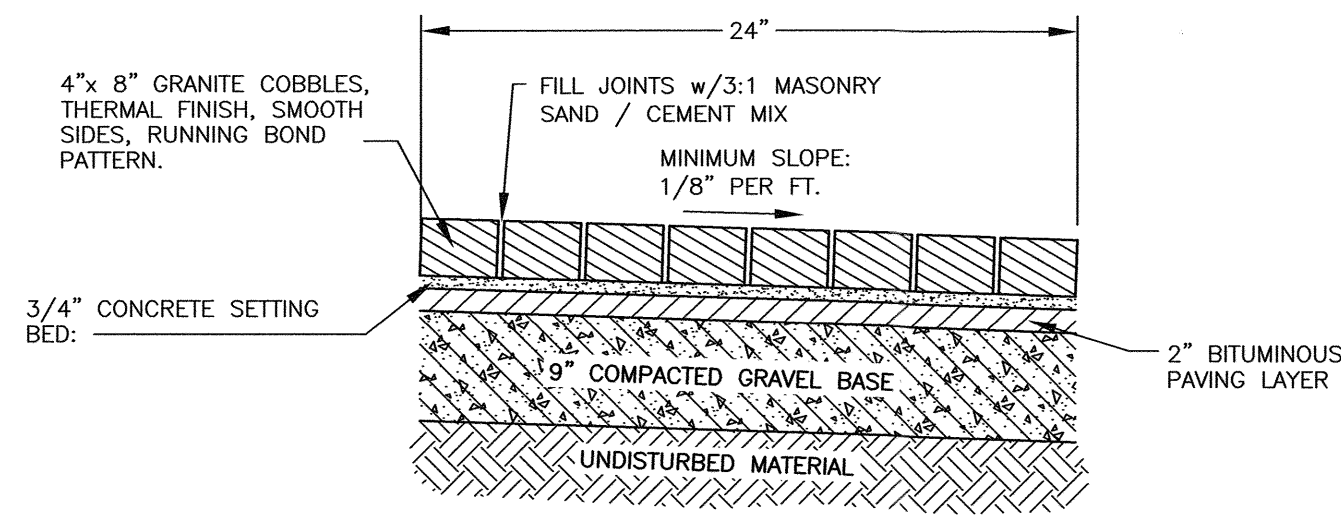


SCALE: AS SHOWN DECEMBER 2022

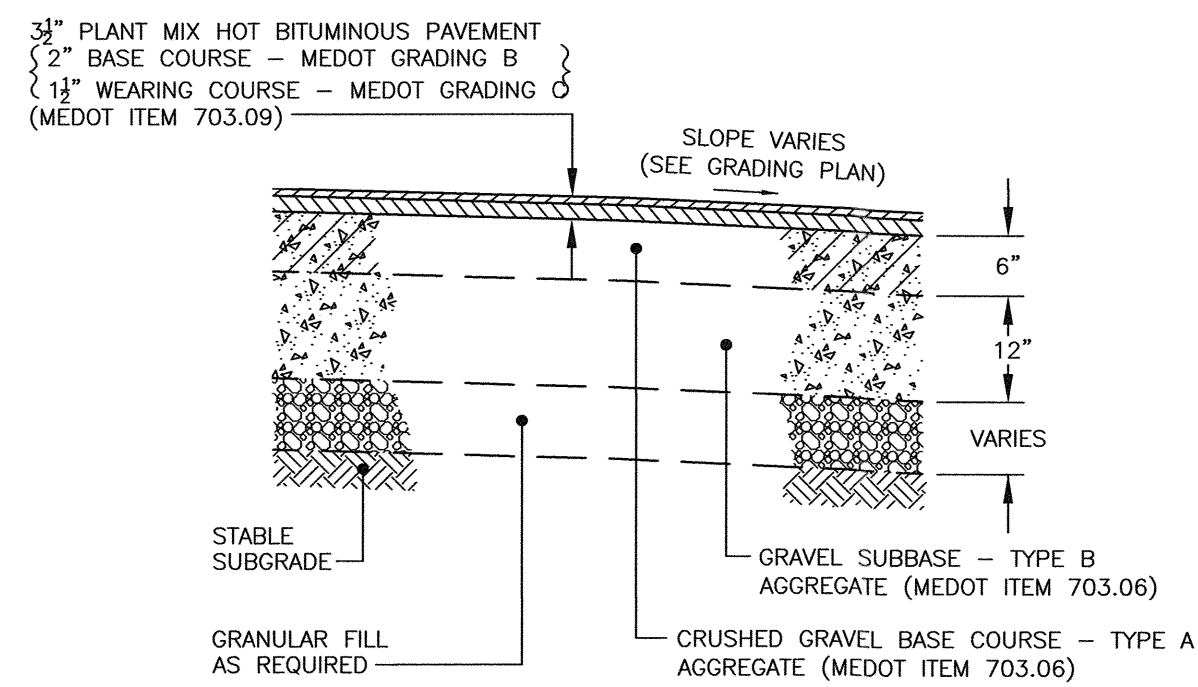
EROSION CONTROL NOTES AND DETAILS D1

NOTES:

- 1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-544-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.
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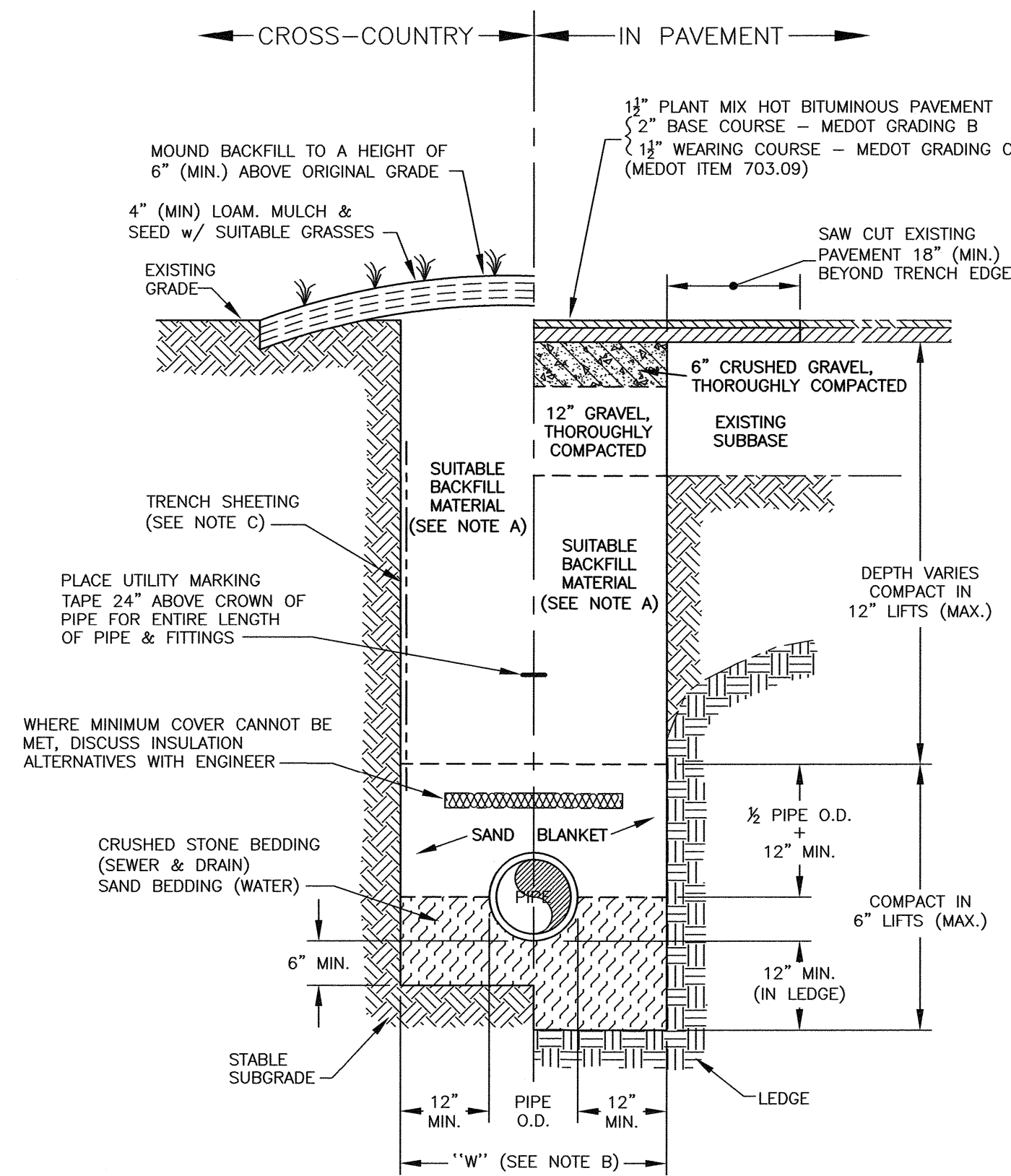


A COBBLE BAND
C2 NTS

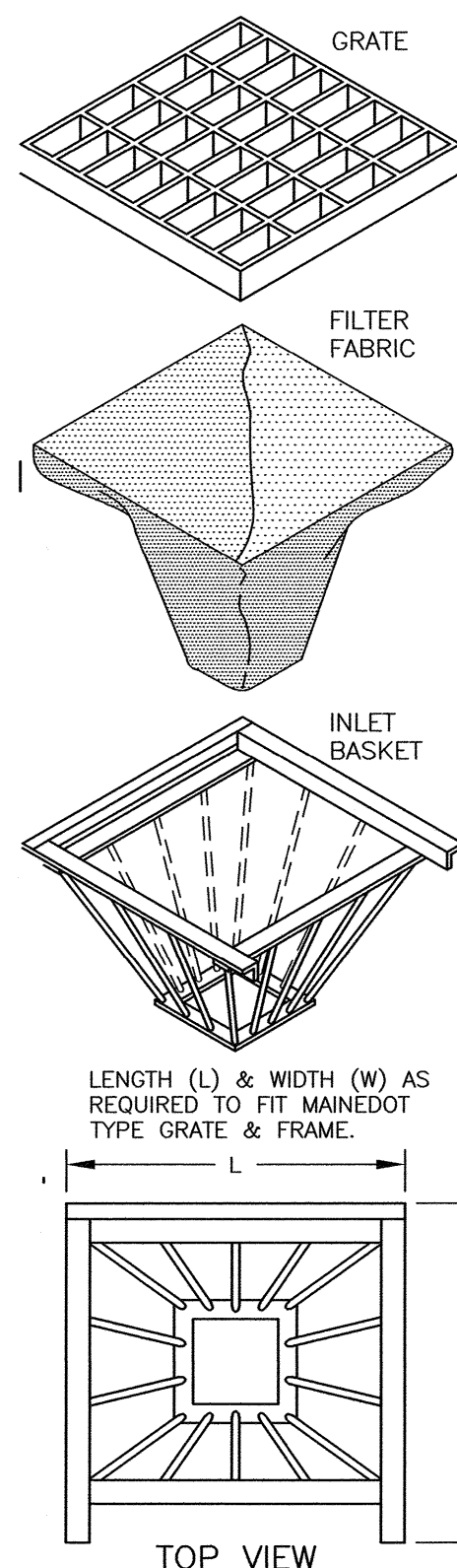


- NOTE:**
- 1) AGGREGATE BASE AND SUBBASE COURSES SHALL CONFORM TO SECTIONS 304 AND 703 OF MAINE DOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, APRIL 1995.
 - 2) PLANT MIX HOT BITUMINOUS PAVEMENT SHALL CONFORM TO SECTIONS 401, 403, 702 AND 703 OF MAINE DOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, APRIL 1995.

B TYPICAL PAVEMENT CROSS-SECTION
C2 NTS

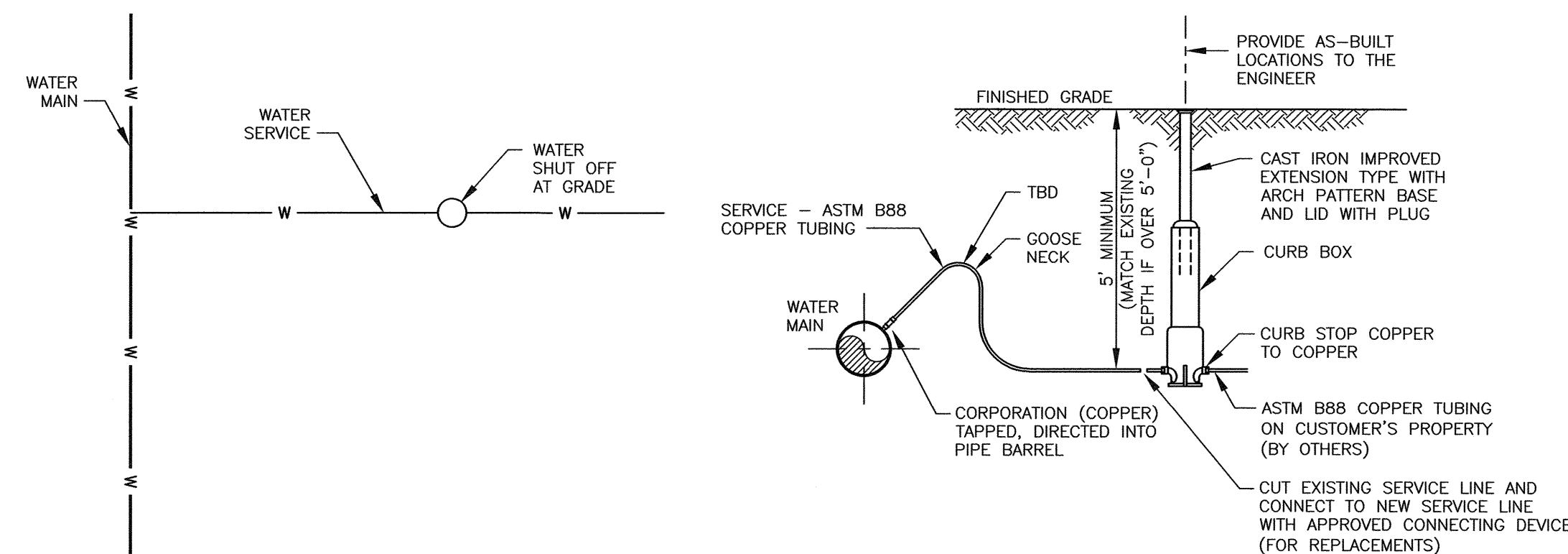


D TYPICAL PIPE TRENCH
C3 NTS



C CATCH BASIN INLET BASKET
C4 NTS

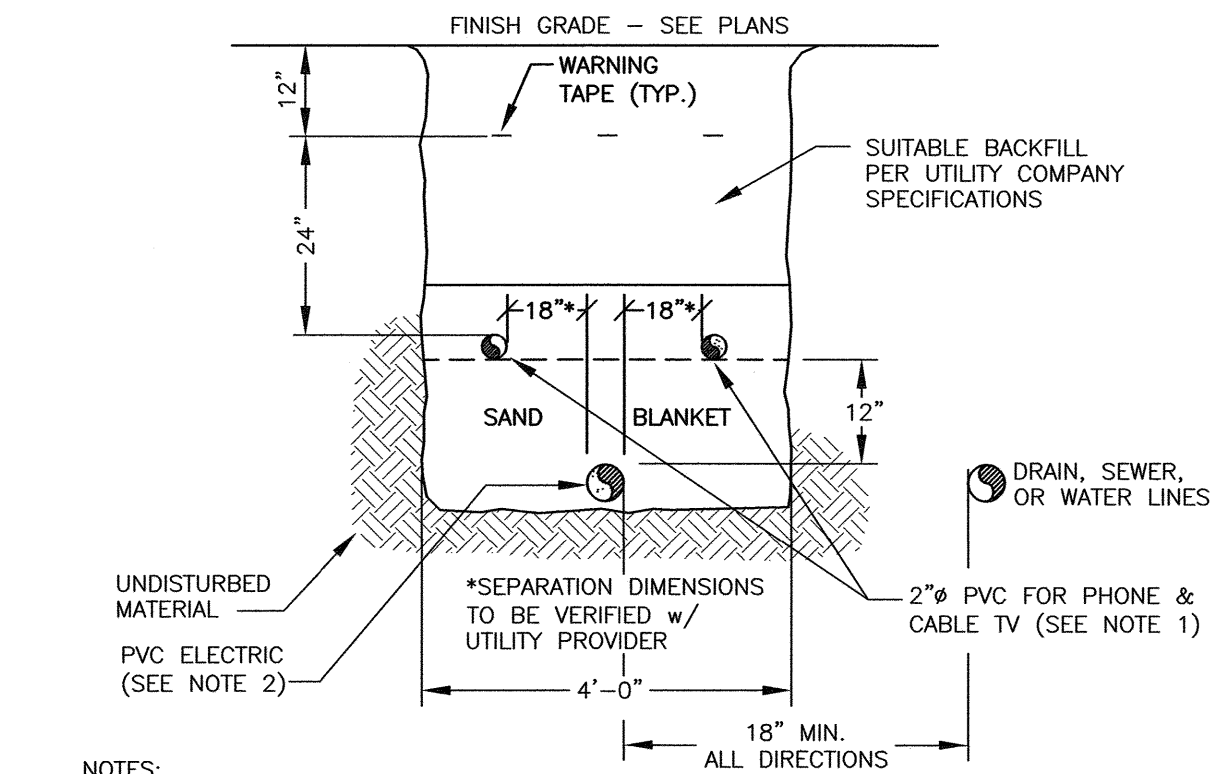
- 1) INLET BASKETS SHALL BE INSTALLED IMMEDIATELY AFTER CATCH BASIN CONSTRUCTION IS COMPLETE AND SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL PAVEMENT BINDER COURSE IS COMPLETE.
- 2) FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO 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.



E TYPICAL WATER SERVICE CONNECTION
C3 NTS

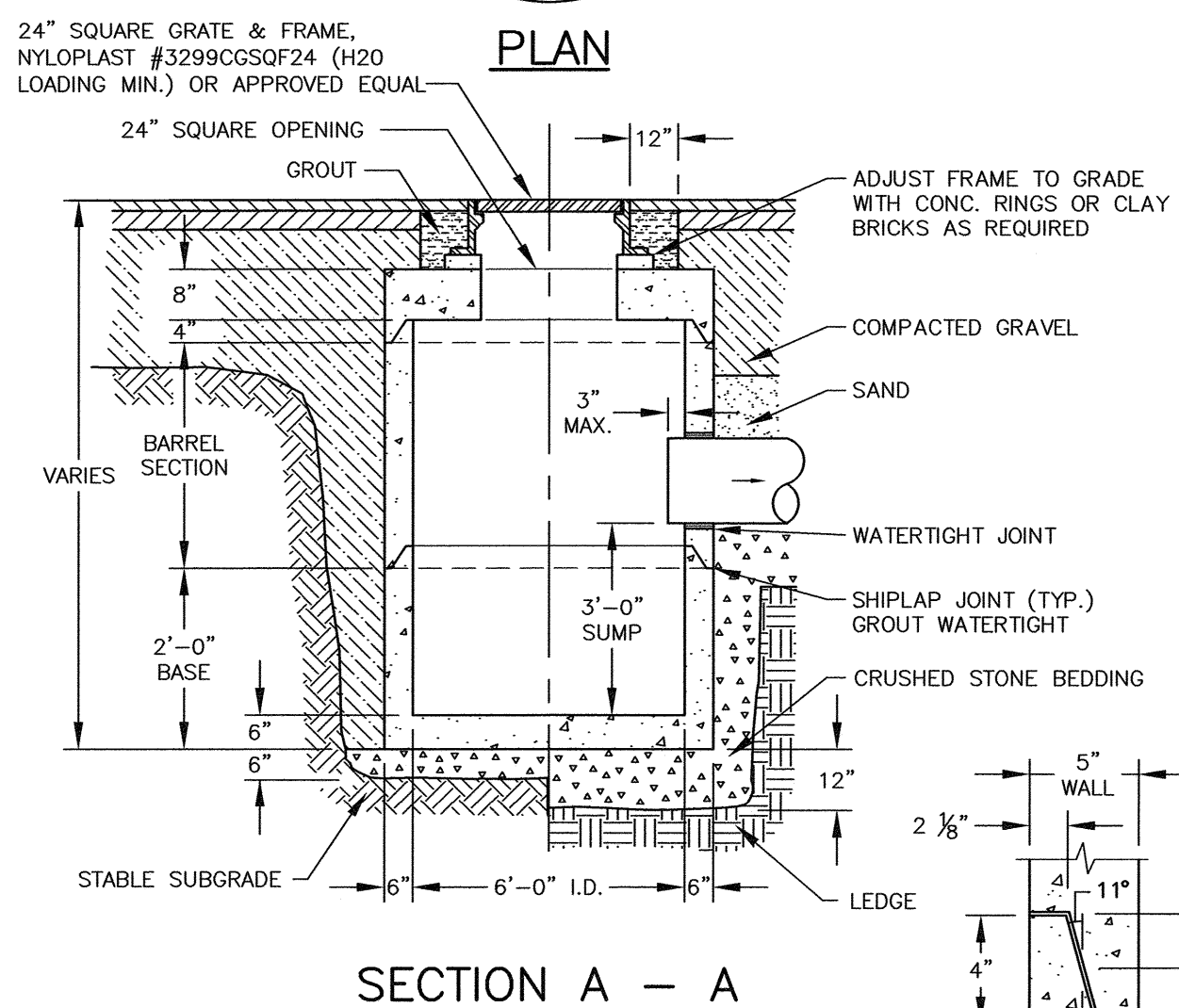
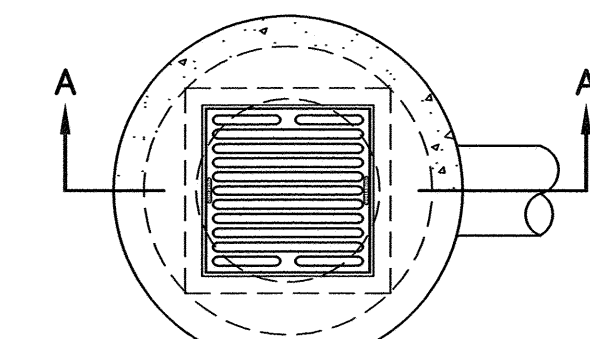
TRENCH NOTES:

- 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.



- 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 UTILITY TRENCH
C3 ELECTRIC/PHONE/CABLE NTS

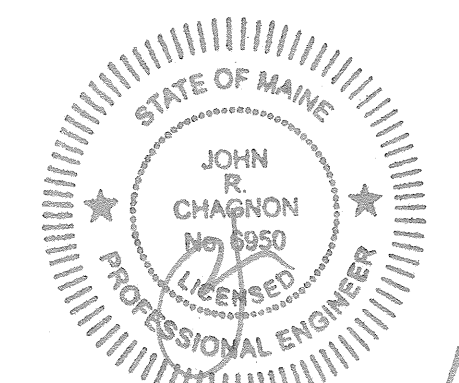


- NOTES:**
1. CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
 2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS & SHALL BE PLACED IN THE CENTER THIRD OF WALL.
 3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO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

G REINFORCED CONCRETE CATCH BASIN
C4 (IF NEEDED) NTS

SITE REDEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, ME

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	1/19/23
REVISIONS		



SCALE: AS SHOWN DECEMBER 2022

DETAILS

D2

NOTES:

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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.

SERVICE CONNECTION NOTES:

1) SEE NOTES FOR SERVICE CONNECTION REQUIREMENTS.

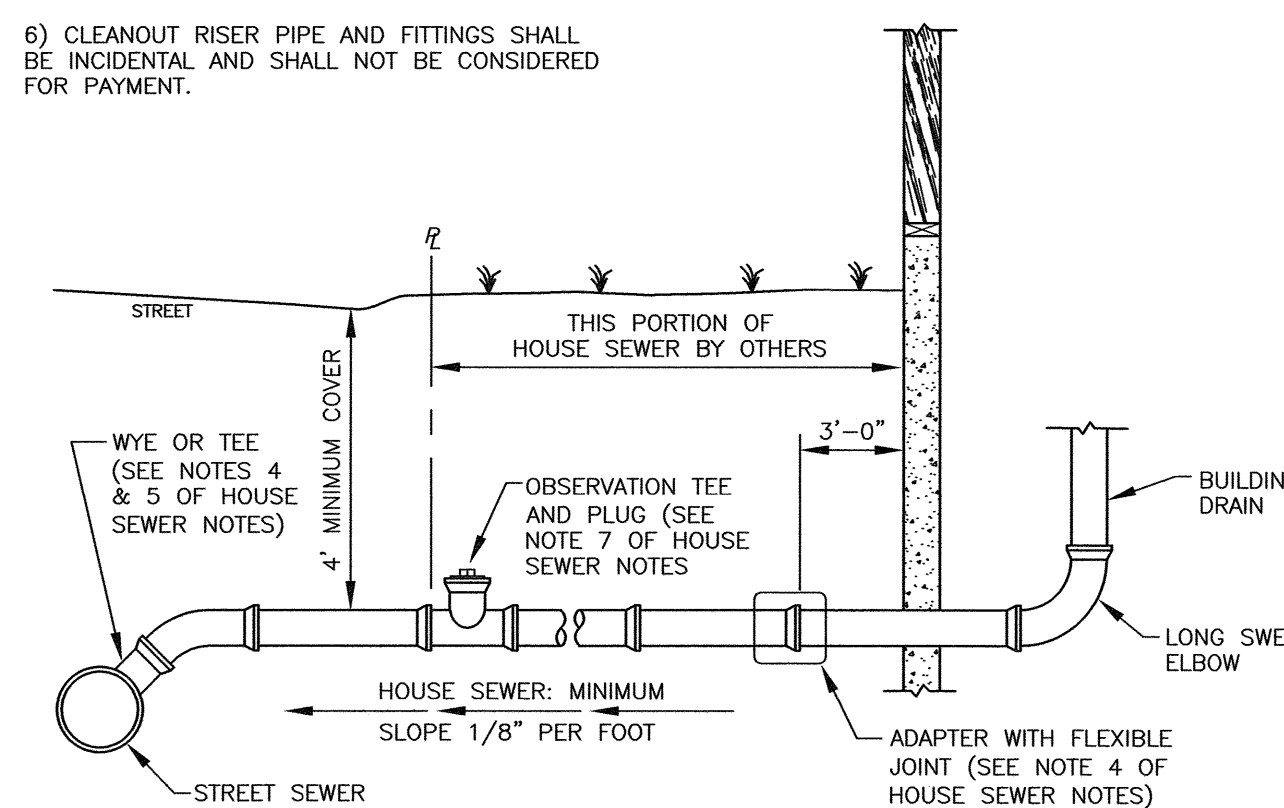
2) SERVICE CONNECTION SHALL BE INSTALLED BELOW WATER MAIN WHERE POSSIBLE.

3) CLEANOUTS SHALL BE INSTALLED AT EACH SERVICE CONNECTION.

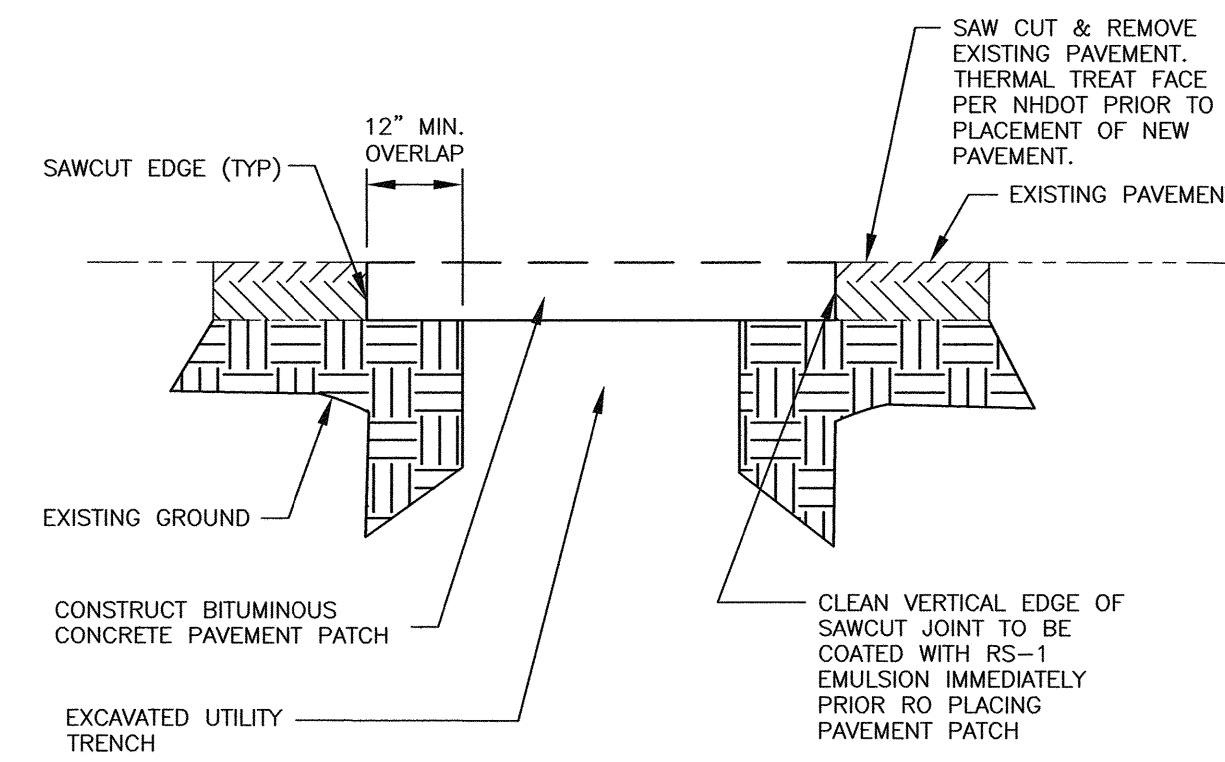
4) REBAR SHALL BE PLACED AT SIDE OF CLEANOUT.

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.

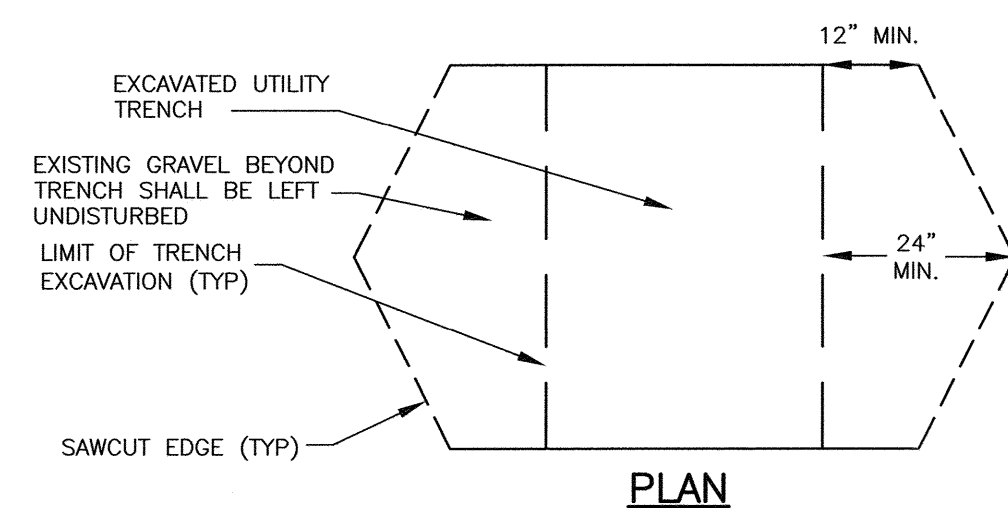


I TYPICAL SEWER SERVICE CONNECTION
C3 NTS

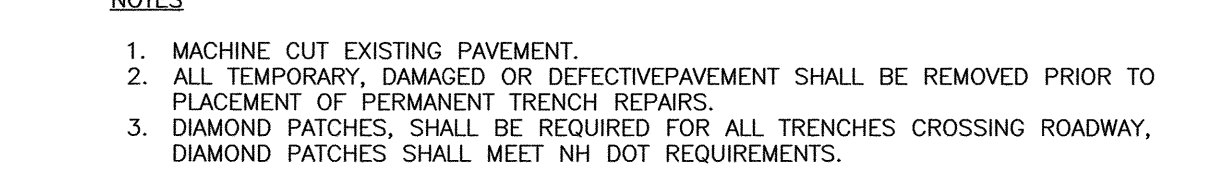


- NOTES**
1. MACHINE CUT EXISTING PAVEMENT.
 2. ALL TEMPORARY, DAMAGED OR DEFECTIVE PAVEMENT SHALL BE REMOVED PRIOR TO PLACEMENT OF PERMANENT TRENCH REPAIRS.
 3. DIAMOND PATCHES, SHALL BE REQUIRED FOR ALL TRENCHES CROSSING ROADWAY, DIAMOND PATCHES SHALL MEET NH DOT REQUIREMENTS.

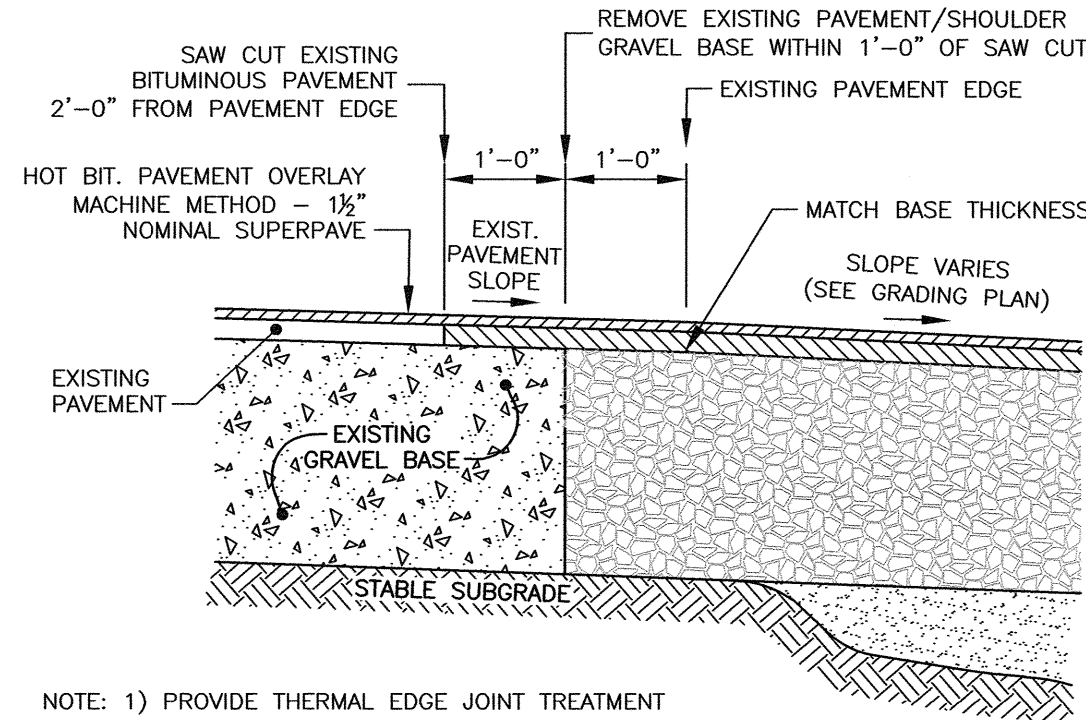
H TRENCH PATCH
C3 NTS



SECTION

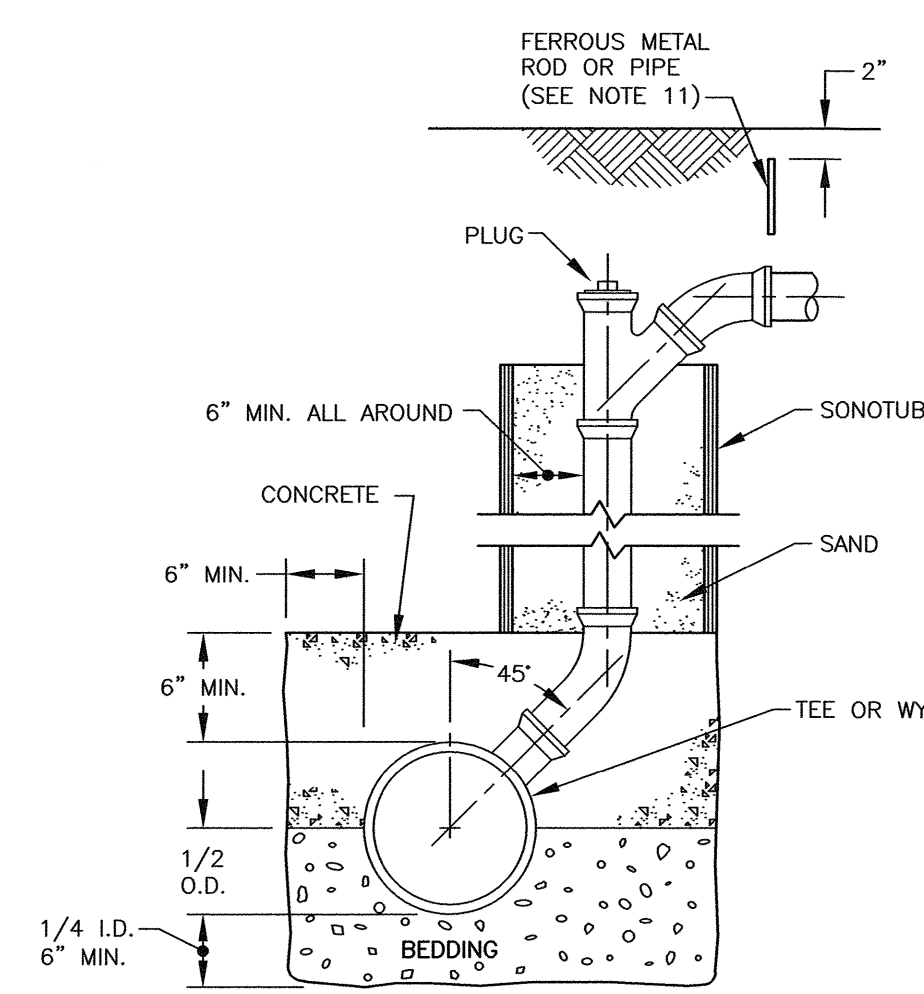


L PAVEMENT JOINT DETAIL
C3 NTS



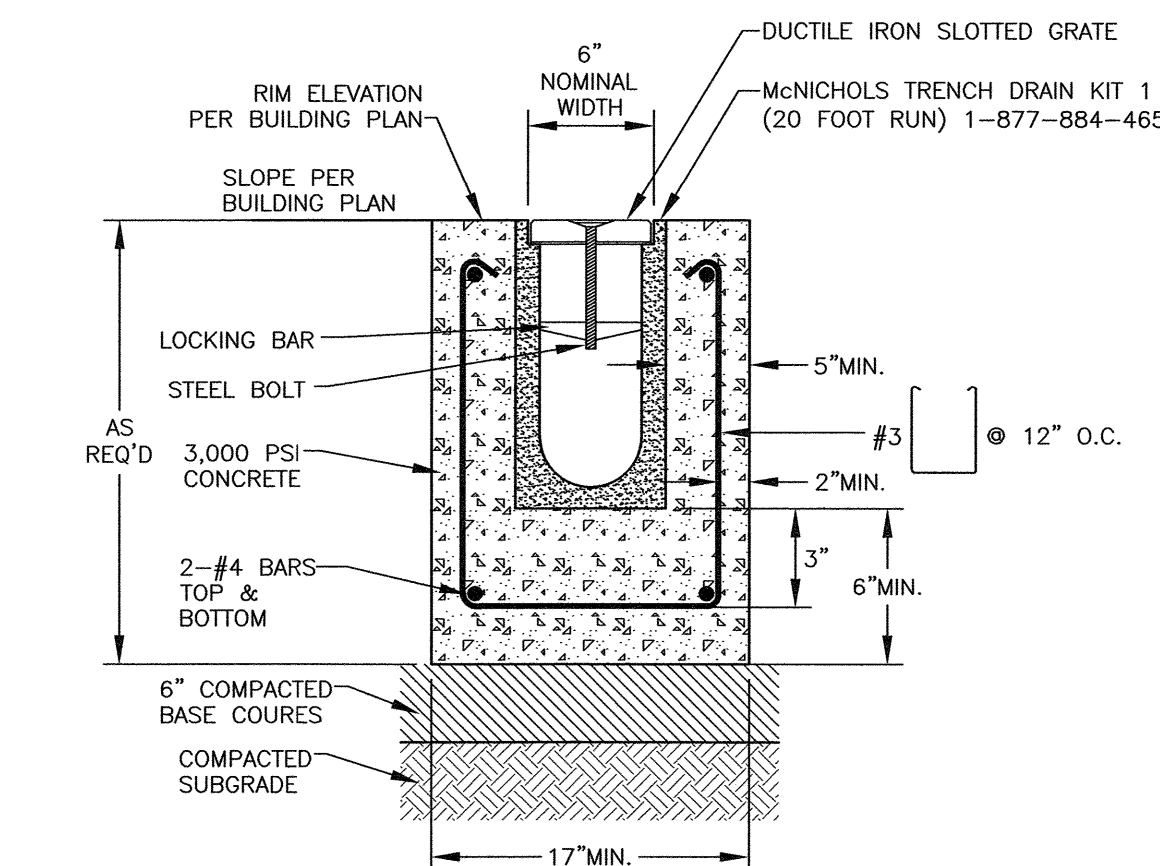
NOTE: 1) PROVIDE THERMAL EDGE JOINT TREATMENT

L PAVEMENT JOINT DETAIL
C3 NTS

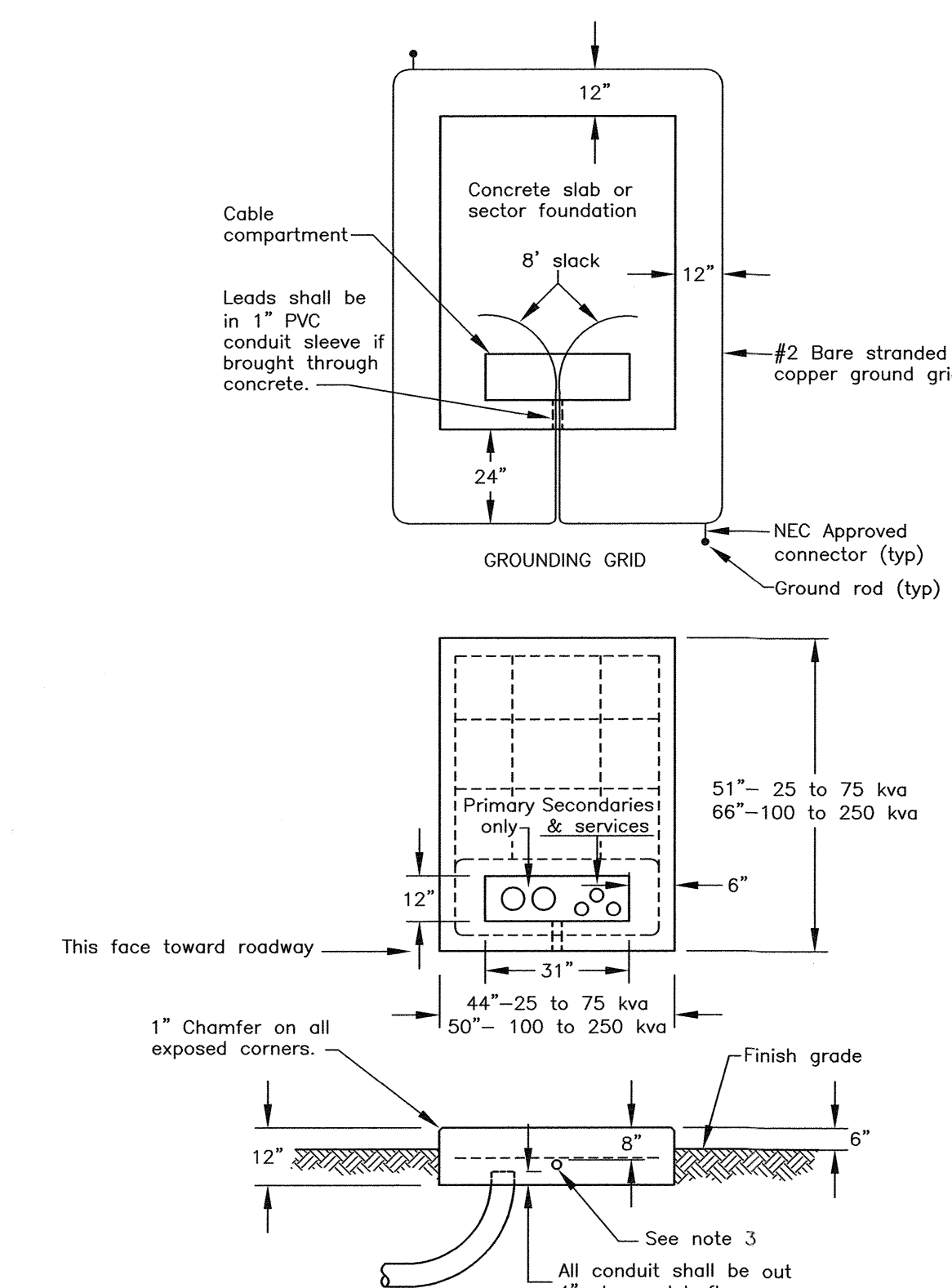


NO BACKFILLING BEFORE CONCRETE HAS TAKEN INITIAL SET (7 HRS. MIN.). BACKFILLING TO BE BROUGHT UP EVENLY ON ALL SIDES.

K SEWER CHIMNEY
C3 IF NEEDED NTS



M EVAPORATION TRENCH DETAIL
C6 NTS



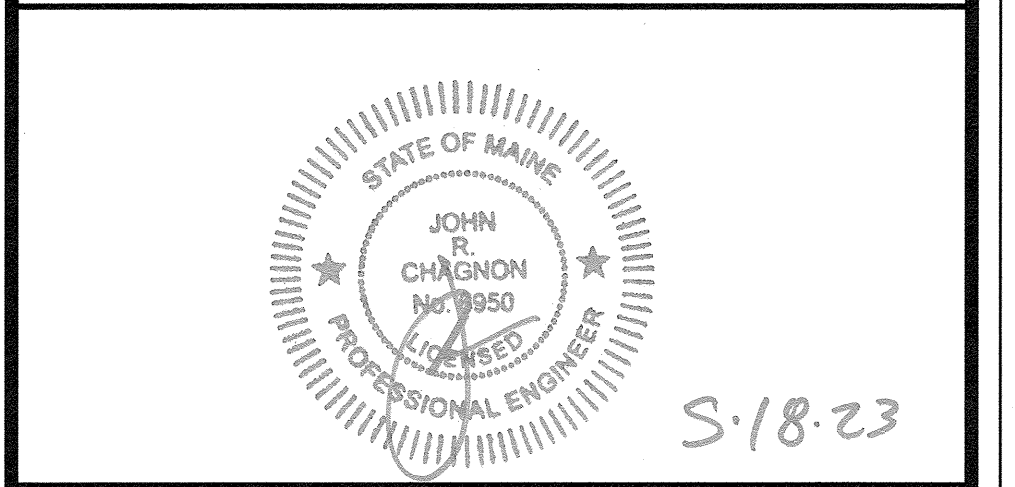
- NOTES**
1. See sheet "Requirements for Padmounted Transformer Slab Details".
 2. All reinforcing to be #6 bars.
 3. 1" PVC conduit sleeve for ground grid leads.
 4. The ground grid shall be supplied and installed by the customer and is to be buried at least 12" below grade. Eight feet of extra wire for each ground grid leg shall be left exposed in the cable compartment to allow for the connection to the transformer; 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 TRANSFORMER PAD
C3 CMP - IF NEEDED NTS

SITE REDEVELOPMENT
35 BADGERS ISLAND WEST
KITTERY, ME

NO.	DESCRIPTION	DATE
1	DETAIL H	5/18/23
0	ISSUED FOR APPROVAL	1/19/23

REVISIONS



SCALE: AS SHOWN DECEMBER 2022

DETAILS **D3**

JELLYFISH DESIGN NOTES

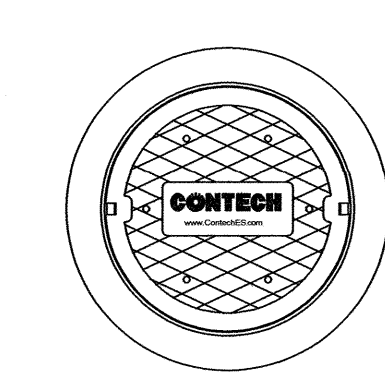
JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VAULT AND/OR SHALLOW ORIENTATIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD.

CARTRIDGE SELECTION	54"	40"	27"	16"
CARTRIDGE LENGTH	54"	40"	27"	16"
OUTLET INVERT TO STRUCTURE INVERT (A)	5'-4"	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

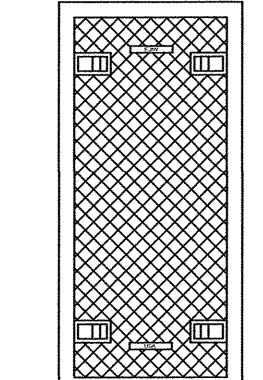
- GENERAL NOTES:**
- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
 - FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.conteches.com
 - JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
 - STRUCTURE SHALL MEET ASHTO 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 ASHTO M309 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
 - STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-867, ASTM C-918, AND ASHTO LOAD FACTOR DESIGN METHOD.
 - OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
 - THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
 - 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:**
- ANY SUB-BASE, BACKFILL, DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
 - CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
 - CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
 - 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.

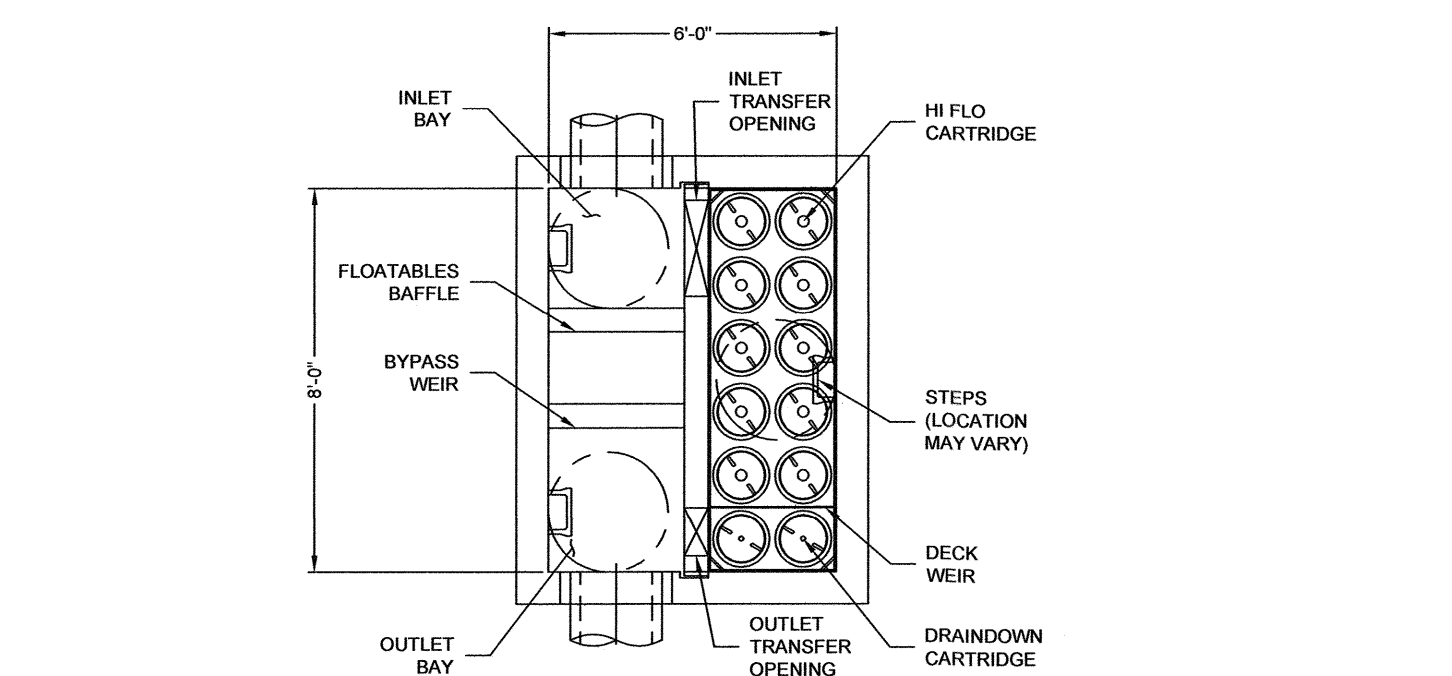
SITE SPECIFIC DATA REQUIREMENTS			
STRUCTURE ID			ID
WATER QUALITY FLOW RATE (cfs)			WQFLOW
PEAK FLOW RATE (cfs)			PEAK
RETURN PERIOD OF PEAK FLOW (yrs)			RETURN
# OF CARTRIDGES REQUIRED (HF / DD)			CART
CARTRIDGE LENGTH			SIZE
PIPE DATA: I.E. MATL DIA SLOPE % HGL			
INLET #1 ELEV MATL DIA SLOPE HGL			
INLET #2 ELEV MATL DIA SLOPE HGL			
OUTLET ELEV MATL DIA SLOPE HGL			
SEE GENERAL NOTES 5-7 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			



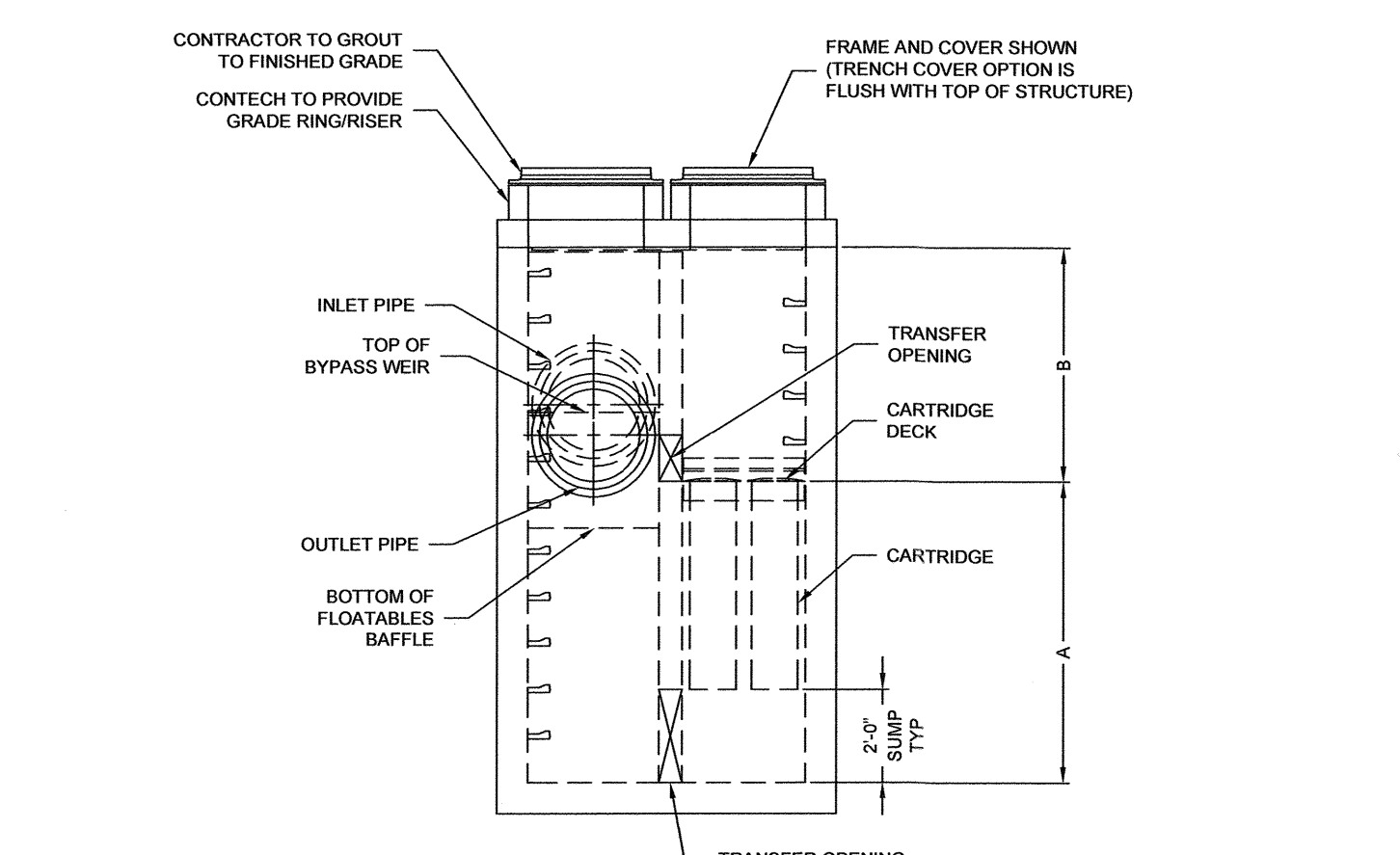
FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



24" TRENCH COVER
(LENGTH VARIES)
N.T.S.



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



ELEVATION VIEW

JELLYFISH FILTER DETAIL

N
C4 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.

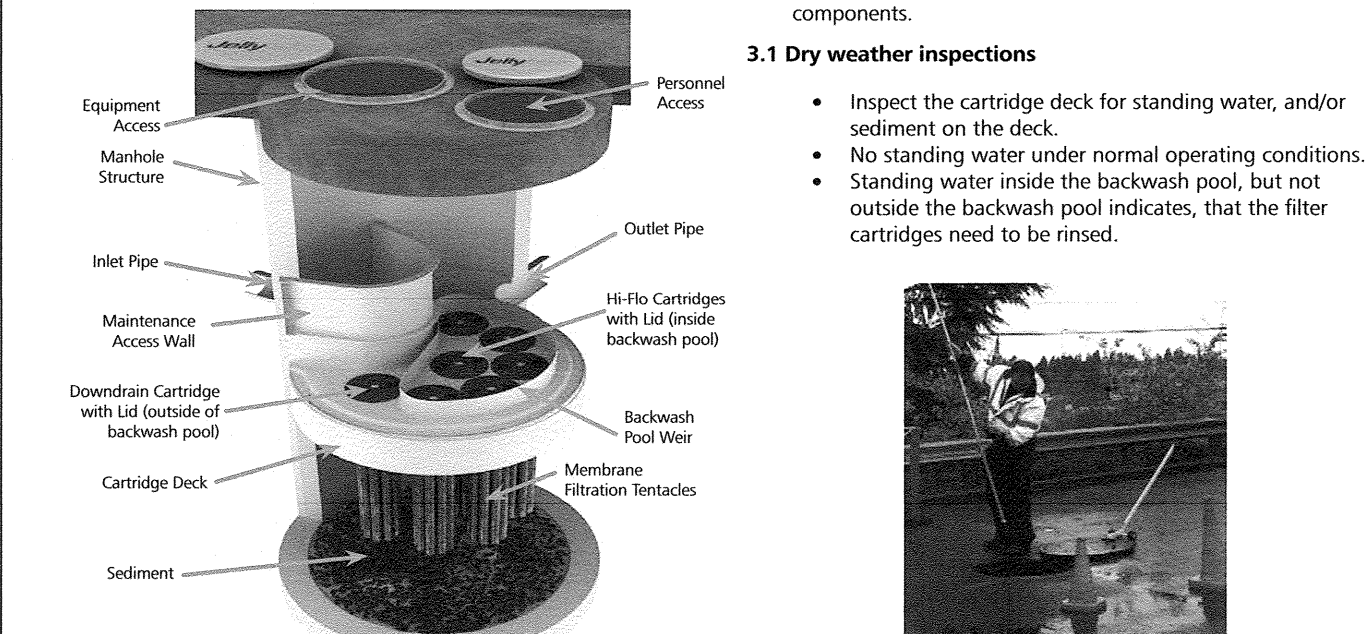
Maintenance frequencies and requirements are site specific and vary depending on pollutant loading. Additional maintenance activities may be required in the event of non-storm event runoff, such as base flow or seasonal flow, an upstream chemical spill or due to excessive sediment loading from site erosion 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.

- 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.
- 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.
- Inspection is required after each major storm event.
- 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:

- Provide traffic control measures as necessary.
- Inspect the MAW or inlet bay for floatable pollutants such as trash, debris, and oil sheen.
- 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.
- Inspect cartridge lids. Missing or damaged cartridge lids to be replaced.
- 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.

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.

3.3 Filter Cartridge Removal

- Remove a cartridge lid.
- 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.*
- 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.

3.4 Filter Cartridge Rinsing

- 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.
- 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. Filter cartridge tentacles should be replaced if damaged or compromised by the spill.

3.5 Maintenance Procedure

The following procedures are recommended when maintaining the Jellyfish Filter:

- Provide traffic control measures as necessary.
- 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.*
- 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.*

3.6 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.

3.7 Chemical Spills

Caution: If a chemical spill has been captured, do not attempt maintenance. Immediately contact the local hazard response agency and contact Contech.

3.8 Filter Cartridge Reinstallation and Replacement

- Cartridges should be installed after the deck has been cleaned. It is important that the receptacle surfaces be free from grit and debris.
- 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.*
- 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.
- 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.

3.9 Sediment and Floatables Extraction

- 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.
- Vacuum floatable trash, debris, and oil, from the MAW opening or inlet bay. Alternatively, floatable solids may be removed by a net or skimmer.
- 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.
- Collected rinse water is typically removed by vacuum hose.
- Reassemble cartridges as detailed later in this document. Reuse O-rings and nuts, ensuring proper placement on each tentacle.



Vacuuming Sump Through MAW



Vacuuming Sump Through MAW

Jellyfish Filter Components & Filter Cartridge Assembly and Installation

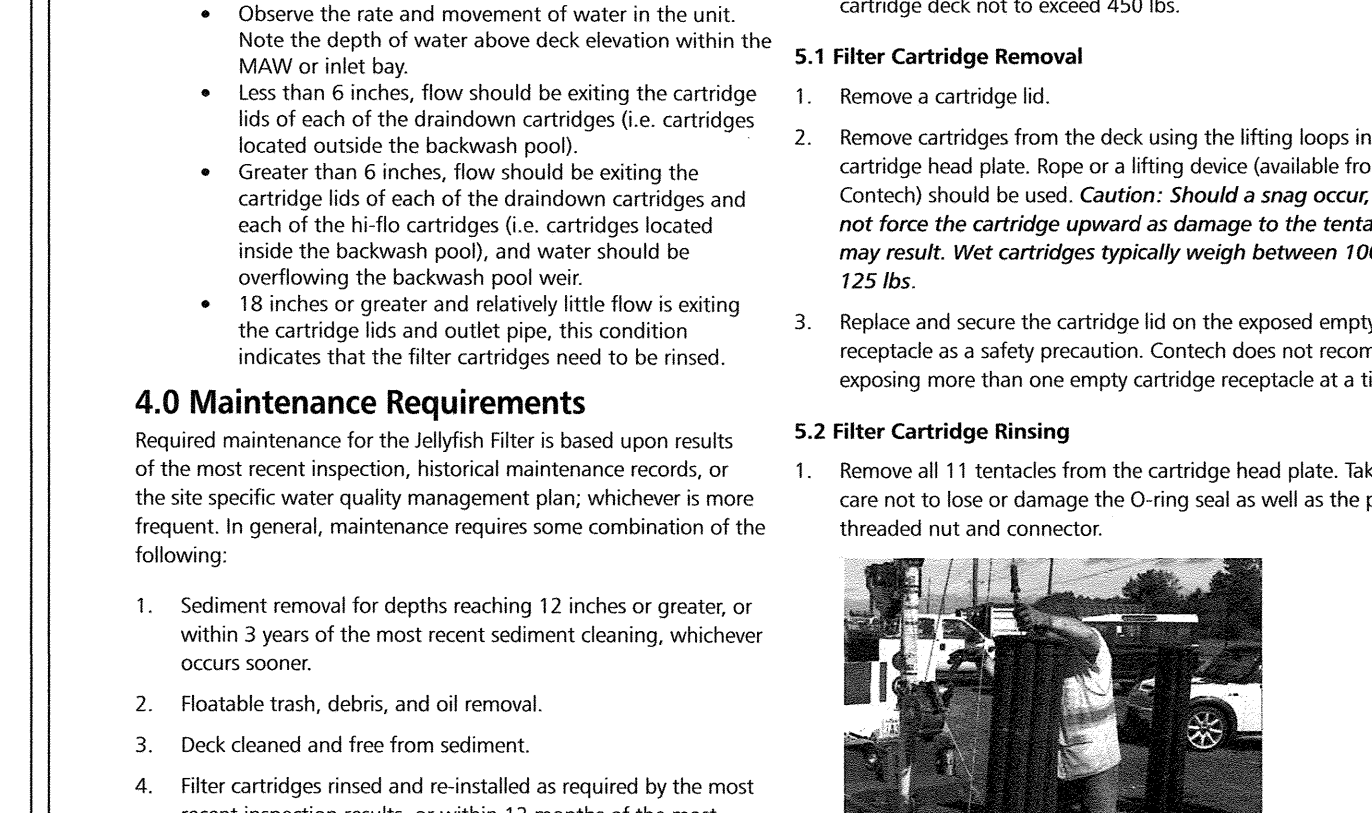


TABLE 1: BOM

ITEM NO.	DESCRIPTION
1	JF HEAD PLATE GASKET
2	JF TENTACLE
3	JF CARTRIDGE GASKET
4	JF HEAD PLATE GASKET
5	JF CARTRIDGE EYELET
6	JF HAN COVER
7	JF RECEPTACLE
8	BUTTON HEAD CAP
9	JF CARTRIDGE NUT

TABLE 2: APPROVED GASKET LUBRICANTS

PART NO.	MFR	DESCRIPTION
7873	LACO	LUBR-JOINT
4000	HERCULES	DUCK BUTTER
3000	DATEY	PIPE LUBRICANT
PLUBR-10	PROSPECT	PIPE JOINT LUBRICANT

Head Plate Gasket Installation:

Install Head Plate Gasket (Item 1) 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 Lids (Item 5). 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 clockwise approximately one-third of a full rotation until Cartridge Lid is firmly secured, creating a watertight seal.

Notes:

- Ensure O-rings are lubricated to facilitate lift and service.
- See note for lubrication details.

Notes:

- 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. Filter cartridge tentacles should be replaced if damaged or compromised by the spill.
- 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.*

Notes:

- 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.
- 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. Filter cartridge tentacles should be replaced if damaged or compromised by the spill.

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

200 Griffin Road, Unit 3
Portsmouth, NH 03801
603.430.9282

WWW.HALEYWARD.COM

NOTES:

- 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.
- 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.
- 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.

Notes:

- 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.
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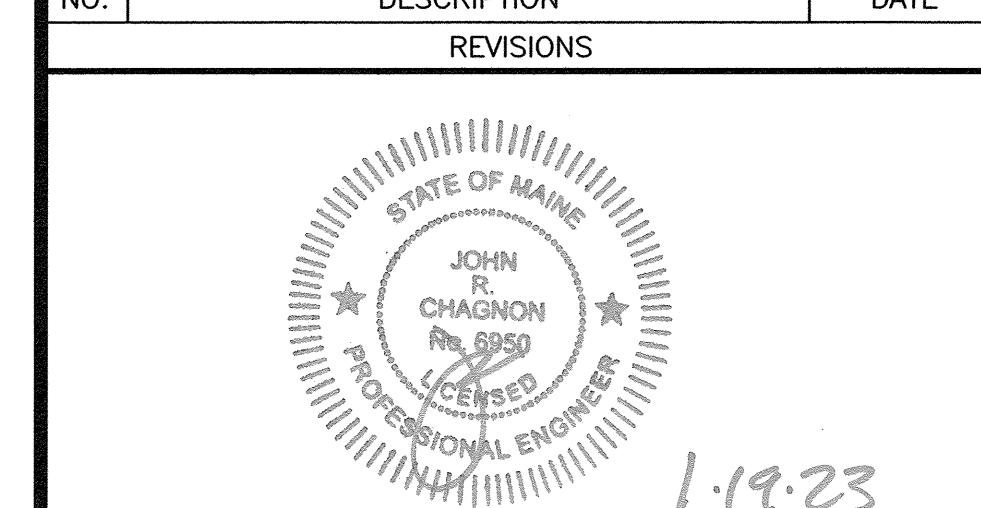
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SITE REDEVELOPMENT 35 BADGERS ISLAND WEST KITTEERY, ME

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

REVISIONS



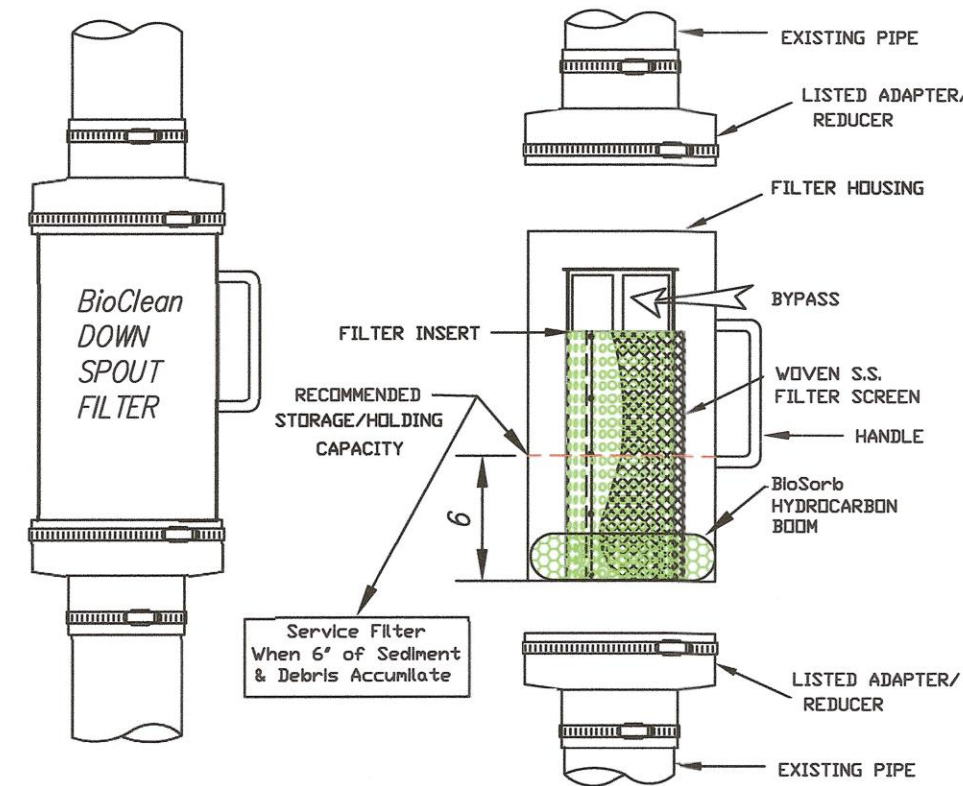
1-19-23

SCALE: AS SHOWN DECEMBER 2022

DETAILS D4

SERVICE MANUAL
(Cleaning Procedures)

Bio Clean DOWNSPOUT FILTER
Screen Type With Hydrocarbon Boom



TOOLS AND EQUIPMENT NEEDED:

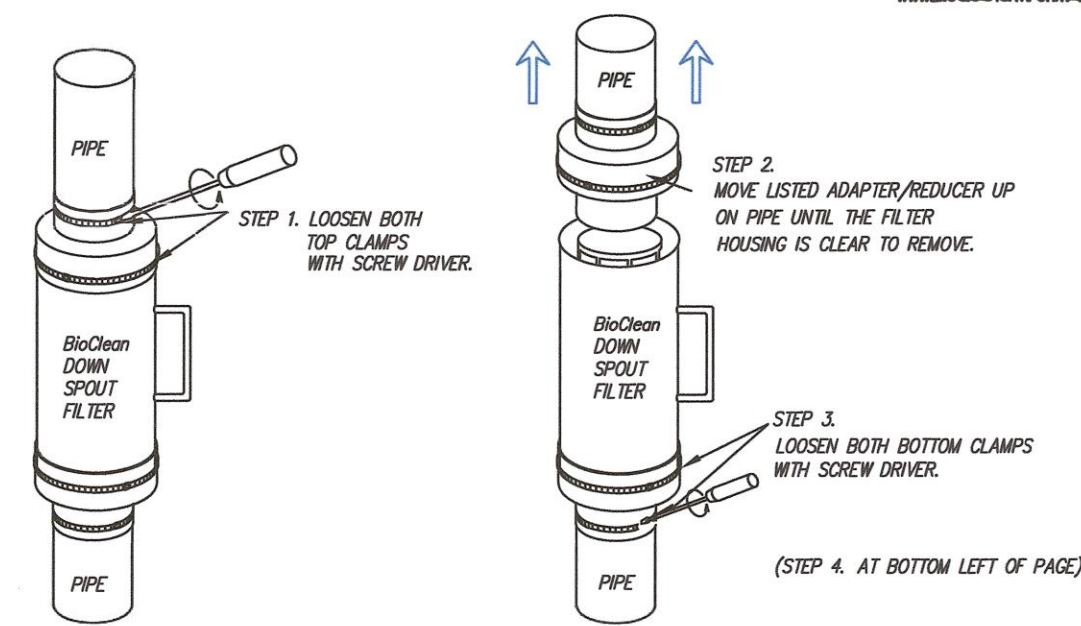
1. Medium size flat screed driver
2. BioSorb hydrocarbon boom. 25-1/2" X 2" dia. (Call Bio Clean to order)
3. Trash container or bag
4. Wooden dowel approx. 3' x 1/2" dia.

DETAIL OF PARTS

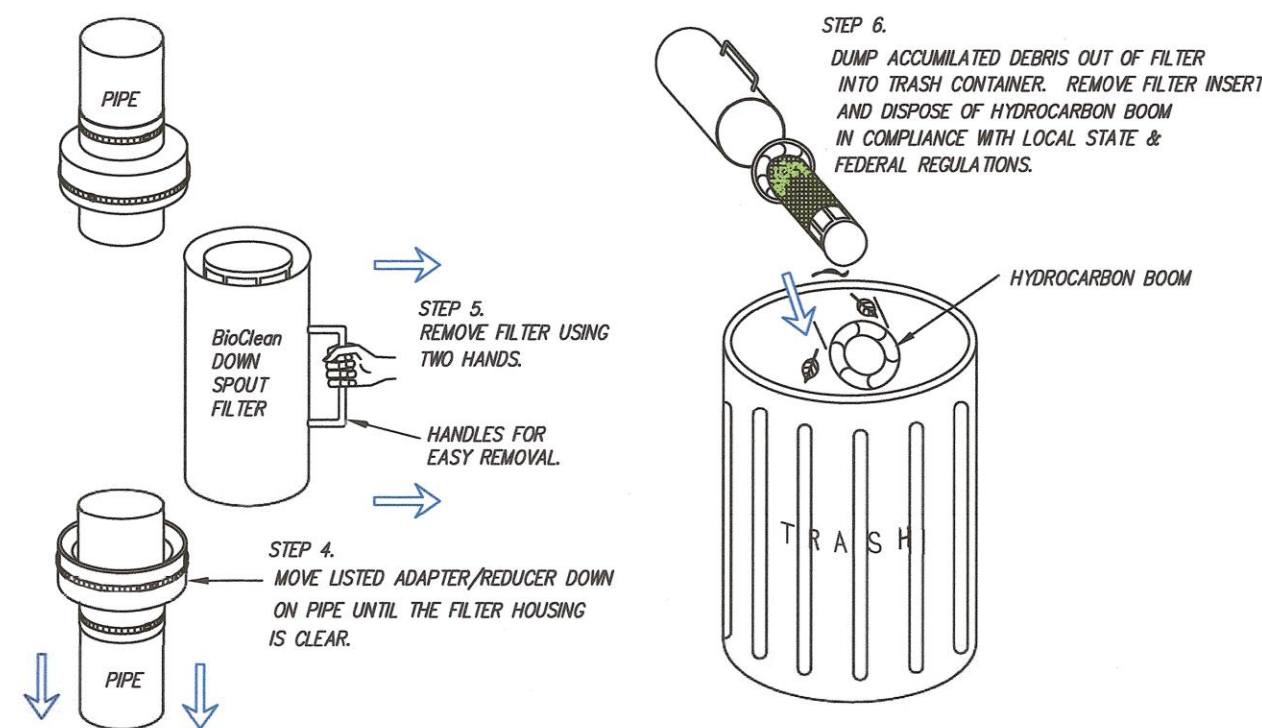


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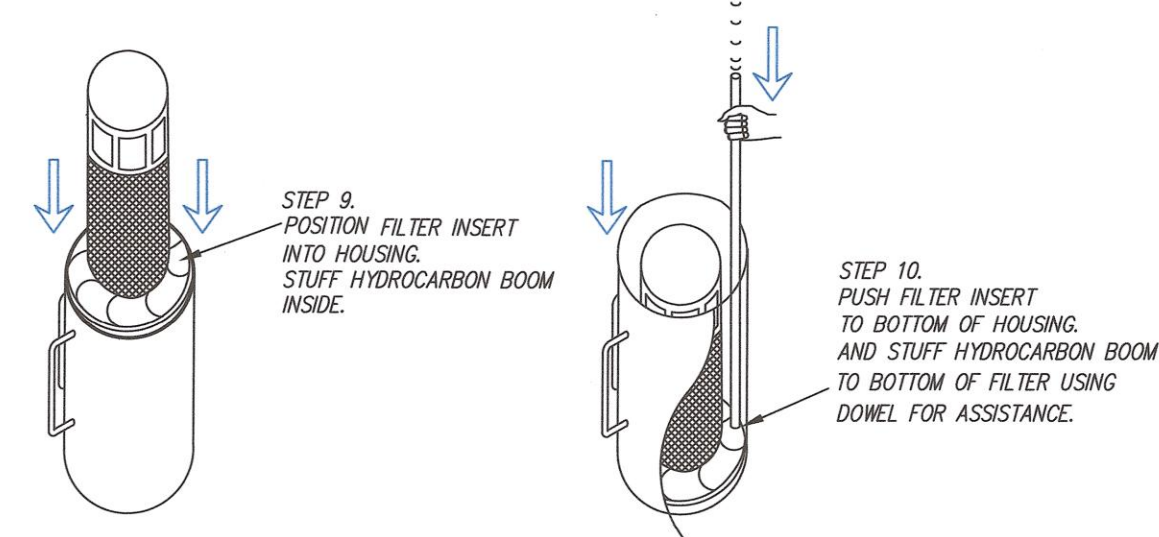
REMOVING FILTER



CLEANING FILTER



REPLACING FILTER INSERT



DOWNSPOUT FILTER:

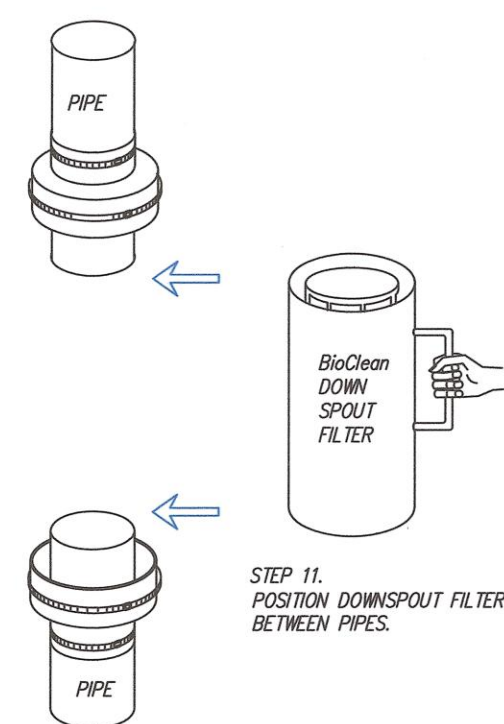
DOWNSPOUT FILTER NOTES:
MAINTENANCE:

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.

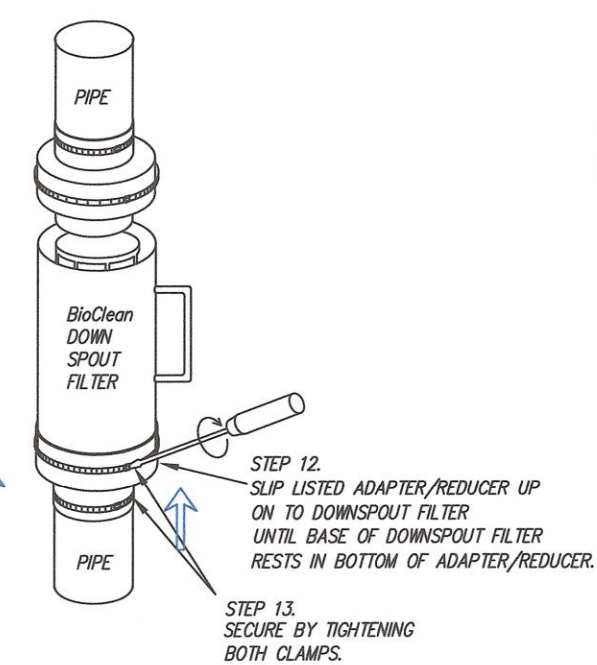
MAINTENANCE NOTES:

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).

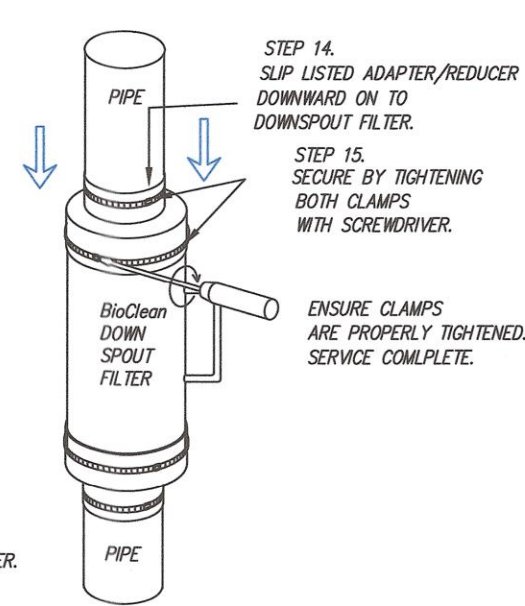
REPLACING FILTER



STEP 11. POSITION DOWNSPOUT FILTER BETWEEN PIPES.

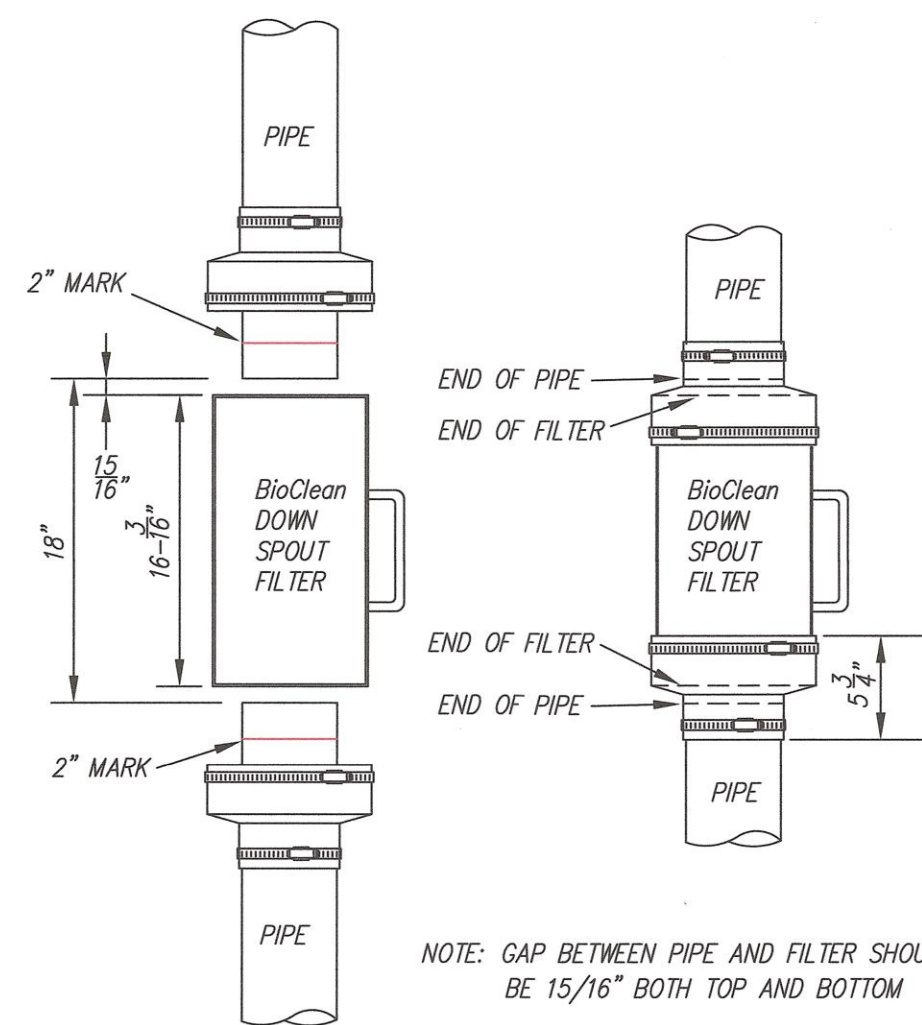


STEP 12. SLIP LISTED ADAPTER/REDUCER UP ON TO DOWNSPOUT FILTER UNTIL BASE OF DOWNSPOUT FILTER RESTS IN BOTTOM OF ADAPTER/REDUCER.
STEP 13. SECURE BY TIGHTENING BOTH CLAMPS.



STEP 14. SLIP LISTED ADAPTER/REDUCER DOWNWARD ON TO DOWNSPOUT FILTER.
STEP 15. SECURE BY TIGHTENING BOTH CLAMPS WITH SCREWDRIVER.
STEP 16. ENSURE CLAMPS ARE PROPERLY TIGHTENED. SERVICE COMPLETE.

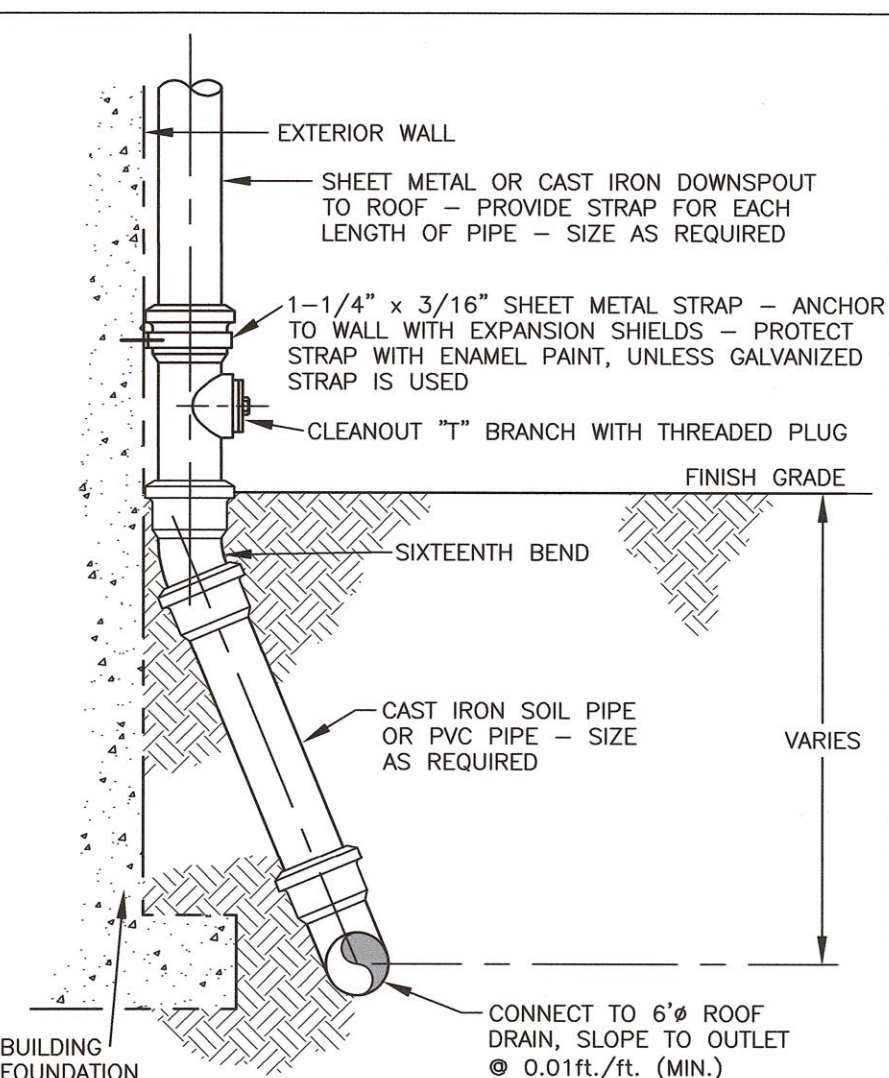
APPROPRIATE INSTALLATION
FILTER CENTERED BETWEEN PIPES WITH EVEN GAPS ON TOP AND BOTTOM



NOTE: GAP BETWEEN PIPE AND FILTER SHOULD BE 15/16" BOTH TOP AND BOTTOM



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0 DOWNSPOUT SHOE
C4 (AT ALL ROOF GUTTERS) NTS

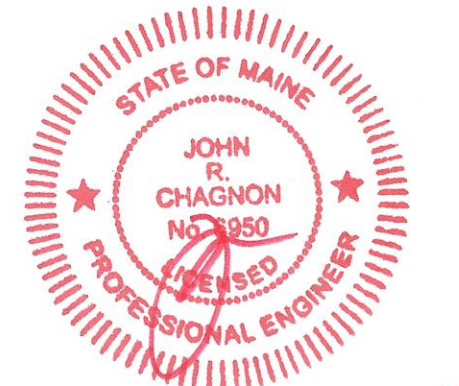
NOTES:

- 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
1	DETAIL 0	5/18/23
0	ISSUED FOR APPROVAL	1/19/23

REVISIONS



5.18.23

SCALE: AS SHOWN DECEMBER 2022

DETAILS

D5

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.

- 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.



