



TOWN OF EXETER, NEW HAMPSHIRE

10 FRONT STREET • EXETER, NH • 03833-3792 • (603) 778-0591 • FAX 772-4709
www.exeternh.gov

LEGAL NOTICE EXETER PLANNING BOARD AGENDA

The Exeter Planning Board will meet on Thursday, August 22, 2024 at **6:30 P.M.** in the Nowak Room of the Town Office Building located at 10 Front Street, Exeter, New Hampshire, to consider the following:

APPROVAL OF MINUTES: August 8, 2024

NEW BUSINESS: PUBLIC HEARINGS

Second public hearing on the 2025 Capital Improvements Program (CIP) projects as presented by the Town Departments. Copies of the proposed document(s) will be available at the Planning Department Office prior to the meeting.

The continued public hearing on the application of Meniscus Financial Holdings, LLC for site plan review and Wetlands and Shoreland Conditional Use Permits for the proposed construction of a commercial vehicle storage area, a 22,500 S.F. accessory storage building and associated site improvements on the property located at 127 Portsmouth Avenue. The property is located in the C-2, Highway Commercial zoning district and is identified as Tax Map Parcel#52-112-2. PB Case #24-4.

The application of 107 Ponemah Road LLC for a multi-family site plan review for the conversion of the existing single-family residence and attached barn located at 50 Linden Street into three (3) residential condominium units. The subject property is located in the R-2, Single Family Residential zoning district. Tax Map Parcel#82-11. PB Case #24-11.

The application of Patrick Houghton for a multi-family site plan review for the proposed construction of two residential duplex structures (total of 4 units) on the property located at 46 Main Street. The subject property is located in the R-2, Single Family Residential zoning district. Tax Map Parcel # 63-1. PB Case #24-12.

OTHER BUSINESS

- Master Plan Discussion
- Land Use Regulations Review
- Field Modifications
- Bond and/or Letter of Credit Reductions and Releases

EXETER PLANNING BOARD

Langdon J. Plumer, Chairman

Posted 08/09/24: Exeter Town Office and Town of Exeter website

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**TOWN OF EXETER
PLANNING BOARD
NOWAK MEETING ROOM
10 FRONT STREET
JULY 11, 2024
DRAFT MINUTES
7:00 PM**

I. PRELIMINARIES:

BOARD MEMBERS PRESENT BY ROLL CALL: Chair Langdon Plumer, Vice-Chair Aaron Brown, Clerk, John Grueter, Pete Cameron (remotely), Gwen English, Jennifer Martel, and Nancy Belanger Select Board Representative

STAFF PRESENT: Conservation & Sustainability Planner Kristen Murphy

II. CALL TO ORDER: Chair Plumer called the meeting to order at 7:00 PM and introduced the members. He noted that the agenda would start with the extension request of Blind Tiger, LLC.

III. OLD BUSINESS

APPROVAL OF MINUTES

June 27, 2024

Ms. English recommended edits.

Mr. Grueter motioned to approve the June 27, 2024 meeting minutes, as amended. Ms. Belanger seconded the motion. A roll call vote was taken, Ms. Belanger voted aye, Ms. English voted aye, Vice-Chair Brown voted aye, Chair Plumer voted aye, Ms. Martel voted aye, Mr. Grueter voted aye and Mr. Cameron voted aye. With all in favor, the motion passed 7-0-0.

IV. NEW BUSINESS:

1. The continued public hearing on the application of Meniscus Financial Holdings, LLC for site plan review and Wetlands and Shoreland Conditional Use Permits for the proposed construction of a commercial vehicle storage area, a 22,500 S.F. accessory storage building and associated site improvements on the property located at 127 Portsmouth Avenue.
C-2, Highway Commercial zoning district
Tax Map Parcel #52-112-2
PB Case #24-4.

Chair Plumer read out loud the Public Hearing Notice.

43 Ms. Murphy indicated that the applicant met with the Technical Review Committee (TRC) on
44 July 13, 2024 and comments were provided from TRC and Underwood Engineering (UEI). She
45 noted there was a site walk in June and the application appeared before the Conservation
46 Commission in July. She noted staff has reviewed the application with a cursory review by the
47 Town Planner, Dave Sharples and that the memo of the Conservation Commission has been
48 provided. She noted that Mr. Sharples indicated a waiver from architectural standards was
49 recommended.

50
51 Christian Smith of Beals Associates indicated that Doug from Jewett Construction was also
52 present. He discussed the drain and infiltration testing on the premises and native soils. He
53 indicated a memo from the traffic engineer concerning crossing to the existing site and stop sign
54 on entrance to Route 108. He discussed the three 3.5" caliper trees, and gray birch at 10-12'
55 called for. He noted that a memo from UEI was received Tuesday morning and addressed
56 comments 49-52. He discussed the University of New Hampshire stormwater fact sheet which is
57 one page and not germane to the under drained system proposed. He noted that UNH has a 25-
58 page document concerning the design. He addressed the typo on comment 53 for stone fill
59 depth which should be 3.'

60
61 Mr. Smith addressed the test pit close to the proposed building and the test pit dug into the
62 banking to avoid removing trees to access the top of the hill. He discussed infiltration rates and
63 the proposed stone drip edge.

64
65 Ms. Smith indicated that Jewett Construction went through the architectural rules and feels
66 they comply. Mr. Grueter asked about the roof pitch, and Mr. Smith responded it has more
67 pitch per the standards now.

68
69 Ms. English asked about the addition of a garage door on the GTE Road side. Mr. Grueter asked
70 if it would be for loading and unloading. Mr. Smith indicated that it was requested by Mr. Foss
71 so that the pick-up truck could back in. There would be no direct deliveries. Mr. Grueter asked
72 how long the driveway would be and Mr. Smith indicated 10.'

73
74 Mr. Grueter indicated there were more windows on the old design and expressed concerns with
75 the narrow road and with the garage. Ms. Smith indicated that glass was reduced after
76 comments made by an abutter who expressed concerns with bird strike and to make the front
77 look less retail because it is not.

78
79 Ms. Murphy indicated that Drew Koff was present representing the Conservation Commission
80 who recommended denial of the Conditional Use Permits because of shoreland buffer impacts
81 and water quality. Mr. Koff indicated that the Conservation Commission reviewed the wetland
82 and shoreland CUP requested and recommended denial due to the impacts to shoreland buffer
83 and water quality. He stated that Commission member Don Clement said it best that in the
84 town's wisdom regulations were adopted to protect the resources, maintain buffers and this
85 site had important water quality that needed protecting. He indicated that both structures
86 encroached on the shoreland buffer. He stated that the orange area shown on the plan is the

87 impact to the 150' shoreland setback. Mr. Smith responded that there is a small amount of
88 pervious parking lot which will collect stormwater in the underdrains proposed and a stone
89 infiltration trench on the southwest side of the building. He indicated 12,268 SF of impact in the
90 150' buffer.

91
92 Mr. Koff noted the area shown in green is the 150-300' buffer and the whole site is in the buffer
93 for the Exeter drinking water via the intake upstream. Some of the impacts are within 150' of
94 the town's drinking water resource and will have significant impact to the watershed around the
95 building site. He noted impacts to the mature forest which serves to absorb and filter rain and
96 with the margin between the stormwater and forest permanently removed that would be a
97 significant impact. He indicated the Commission voted unanimously that there was just too
98 much risk to the town's water supply and that the town doesn't have these regulations so they
99 can be waived every time. He noted that the plan did not take the resources into account, and
100 he recommended the building be smaller and did not understand the need for such a big
101 parking lot. He noted when the applicant came for their conceptual it was just a parking lot.
102 Mr. Koff noted the Commission unanimously recommended against issuing waivers because of
103 the potential impact to water quality.

104
105 Mr. Koff noted the last time they saw the plan it wasn't proposing pervious pavement, the
106 design changed, and he feels it needs to be more robust given the sensitive area. He indicated
107 they discussed the depth of the underdrain, and it was fairly shallow. Mr. Koff would like to see
108 UEI respond because he, himself is not a stormwater guy.

109
110 Ms. English agreed that they needed to make sure the plan was going to function. With regard
111 to the size of the building, Ms. English calculated that they could put 42 ladder firetrucks fender
112 to fender, it was enormous and in a sensitive location seems too much.

113
114 Mr. Smith indicated the stormwater treatment is supported by the media and gravel beneath
115 the surface, piped to a large culvert which drains to Wheelwright Creek downstream. Mr. Smith
116 indicated that Foss Motors is trying to grow and do this once, they are the number one Dodge
117 Ram/Jeep dealership in the country. Ms. English responded that while she understood their
118 plan to expand the business this is a sensitive site, and she did not recall an impact such as this.
119 Mr. Grueter agreed there are other locations for storage.

120
121 Ms. Belanger noted that the number of cars being parked was an unknown.

122
123 Chair Plumer opened the hearing to the public for comments at 7:42 PM.

124
125 Linda Haskins of Front Street noted that she is a State Representative. She indicated that when
126 you know better – you need to do better. She stated that residents here have some concerns
127 that the project is too big and want to protect their critical water source and feels this plan is
128 going in the wrong direction.

129

130 Vice-Chair Brown indicated there has been a lot of information about pervious vs. impervious.
131 He stated that this is a pretty intense use for this location. He acknowledged they need a waiver
132 regardless of what they do but the site is completely in the buffer zone and should be continued
133 so there is no impact on the drinking water ensured versus hoping.

134
135 Ms. Martel agreed that the Conservation Commission review was very reasonable, and the
136 Board should take their recommendation seriously. She agreed there needed to be more work
137 to convince the Board this is zero impact.

138
139 Danielle Frank of 31 Haven Lane expressed concerns about the impact to drinking water.

140
141 Mr. Smith requested a continuance to go back and take another shot at the plan and to respond
142 to UEI.

143
144 Ms. Murphy reviewed the Board's schedule but indicated that they could be first on the agenda
145 for the August 22 meeting but the first meeting in August is completely devoted to the Capital
146 Improvement Plan presentation.

147
148 Vice-Chair Brown recommended that architectural standards should be considered, and the
149 Conservation Commission kept in the loop.

150
151 ***Vice-Chair Brown moved that the application of Meniscus Financial Holdings, LLC Meniscus***
152 ***Financial Holdings, LLC, Planning Board Case #24-4 be continued to the Exeter Planning***
153 ***Board's meeting on August 22, 2024 at 7 PM. Ms. Belanger seconded the motion. A roll call***
154 ***vote was taken: Ms. Belanger voted aye, Mr. Cameron voted aye, Ms. Martel voted aye, Chair***
155 ***Plumer voted aye, Vice-Chair Brown voted aye, Ms. English voted aye and Mr. Grueter voted***
156 ***aye. The motion passed unanimously 7-0-0.***

157
158 2. The application of I. S. Realty Trust for a minor subdivision and Wetlands Conditional Use Permit
159 for the proposed subdivision of an existing 5.58-acre parcel into three (3) residential lots. The
160 subject property is located at 100 Linden Street (and Patricia Avenue)
161 R-2, Single Family Residential zoning district
162 Tax Map Parcel #104-71
163 PB Case #24-7.

164
165 Chair Plumer read out loud the Public Hearing Notice and asked if the case was ready to be
166 heard. Ms. Murphy indicated the case was ready to be heard.

167
168 ***Ms. English motioned to open Planning Board Case #24-7. Mr. Cameron seconded the motion.***
169 ***A roll call vote was taken, Mr. Cameron voted aye, Ms. Martel voted aye, Chair Plumer voted***
170 ***aye, Vice-Chair Brown voted aye, Ms. English voted aye, Ms. Belanger voted aye and Mr.***
171 ***Grueter voted aye. The motion passed unanimously 7-0-0.***

172

173 Ms. Murphy indicated the application was for a minor subdivision with wetland's CUP. Plans
174 and supporting documents dated June 25, 2024 were provided. The applicant appeared before
175 the Zoning Board of Adjustment on June 18, 2024 and received a variance for minimum lot
176 frontage. The notice of decision and minutes are provided. The CUP was presented to the
177 Conservation Commission on July 9, 2024 and the Commission voted unanimously in support.
178 There was no Technical Review Committee review. The application was reviewed by staff and
179 there are no waivers requested. She has a proposed list of conditions for approval.

180
181 Mr. Hunter presented the plan. He indicated the dead end, right of way and utilities, well and
182 septic.

183
184 Ms. English noted this was originally proposed as a five-lot cul-de-sac.

185
186 Chair Plumer opened the hearing to comments from the public at 8:02 PM.

187
188 A resident of 14 Riverbend Circle thanked Mr. Hunter for reducing the plan. He expressed
189 concerns with runoff and replacing vegetation. He noted everyone downstream was "thick with
190 water."

191
192 Mr. Grueter asked about the detention pond and if it functioned. Seneca indicated there was
193 more runoff now than before and that may be due to the removed trees. He indicated sumps
194 are running ten months of the year, some all year round.

195
196 Ms. English asked about vegetation and Mr. Hunter indicated there is currently very little. In
197 2019 the property was logged. He plans to replace that vegetation. Seneca indicated that the
198 utilities clear cut their right of way.

199
200 Mr. Grueter noted the Conservation Commission approved based on replacing the vegetation.
201 Vice-Chair Brown noted that Code Enforcement could follow up and the Town Planner also. Ms.
202 Martel stated that although those mechanisms were in place before, the restoration did not
203 take place. Mr. Hunter indicated the trees died. Mr. Grueter recommended following up on
204 that.

205
206 Ms. English asked about stone drip edge and Mr. Hunter indicated an architect was working on
207 it.

208
209 Ms. Murphy read out loud the proposed conditions of approval:

- 210
- 211 1. A dwg file of the plan shall be provided to the Town Planner showing all property lines and
212 monumentation prior to signing the final plans. This plan must be in NAD 1983 State Plane
213 New Hampshire FIPS 2800 Feet coordinates; and
 - 214 2. All monumentation shall be set in accordance with Section 9.25 of the Site Plan and
215 Subdivision Regulations prior to the signing the final plans.
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Chair Plumer reviewed the criteria for the CUP. Mr. Hunter indicated the use was permitted in the zone. Vice-Chair Brown indicated the design was less intense than seen previously as far as alternate designs that were less detrimental. Vice-Chair Brown indicated that the wetland scientist requirement did not apply to a minor subdivision or question #6 another site. Mr. Hunter indicated that the buffer impact was less, and answered yes to question five about health, safety, welfare not detrimental to public health, and ground water not being contaminated. Mr. Hunter answered yes to question seven about restoration and #8 concerning DES 485a:17 and US Army Corp 404 Clean Water Act.

Vice-Chair Brown motioned after reviewing the criteria for the wetlands conditional use permit that the request of I S Realty Trust, Planning Board Case #24-7 for a wetlands conditional use permit be approved. Ms. Belanger seconded the motion. A roll call vote was taken: Mr. Cameron voted aye, Ms. English voted aye, Ms. Belanger voted aye, Vice-Chair Brown voted aye, Chair Plumer voted aye, Ms. Martel voted aye and Mr. Grueter voted aye. The motion was approved unanimously 7-0-0.

The Board discussed the trees. Ms. Murphy noted it was not this applicant that removed them, that was Cypress Circle Dev. Mr. Hunter indicated that he would clear cut within 30' of the foundation. Ms. Murphy reviewed the previous recommendation. Ms. English indicated there is a list on the town website of native trees and shrubs that are recommended. Ms. Martel agreed there could be 12 trees and 12 shrubs selected from the Tree Committee list on the website. Ms. Murphy read proposed condition #3:

- Applicant to plant a mix of 12 native canopy trees and 12 shrubs from the town's recommended species list.

Ms. English motioned that the request of I S Realty Trust, Planning Board Case #24-7 for a minor subdivision be approved with the three conditions outlined by Ms. Murphy. Ms. Belanger seconded the motion. A roll call vote was taken: Mr. Cameron voted aye, Ms. Martel voted aye, Chair Plumer voted aye, Vice-Chair Brown voted aye, Ms. English voted aye, Ms. Belanger voted aye and Mr. Grueter voted aye. The motion passed unanimously 7-0-0.

3. The application of Green & Company for a design review of a proposed mixed-use development on the property at 76 Portsmouth Avenue.
C-2, Highway Commercial zoning district.
Tax Map Parcel #65-118.
PB Case #24-8

Chair Plumer read out loud the Public Hearing Notice for a conceptual design review discussion per RSA 676:4. Ms. Murphy noted the discussion was non-binding and abutters were notified.

Paige Libbey of Jones & Beach presented the conceptual design using the tax map overlay. She indicated the location of the Fisher Auto Parts store and the Thirsty Moose and Verani Realty,

261 Route 108, Jady Hill and Haven Lane. She noted there is a drainage easement between Thirsty
262 Moose and a large, deep culver/swale and wetlands on the south. She discussed the middle
263 ditch which outlands to Webster Ave wetlands and Wheelwright Creek. She indicated the man-
264 made ditches.

265
266 Ms. Libbey reviewed the proposed buildings which would be commercial in the front with
267 apartments and basement parking, four stories in the Mixed Used Neighborhood Development
268 (MUND) zone. She indicated the proposed triplex in the back and proposed extension of Haven
269 Lane and proposed firetruck turnaround. She noted that parking in MUND is one space per
270 residential unit, but they were increasing to 1.5 spaces per unit. There would be 121 units
271 between three buildings and ten percent would be affordable housing as required. She indicated
272 there has been no traffic study yet.

273
274 Ms. Libbey briefly touched upon wetland and buffer impacts and noted they attended the
275 Conservation Commission's meeting. She reviewed plans to relocate the man-made ditch. She
276 showed wetlands in orange and noted no impacts to natural buffers. She indicated roof water
277 would be collected and treated. She noted the project will require State Alteration of Terrain
278 (Aot) and there will be temporary impact to the 40' buffer with a robust planting plan and
279 landscaping along the property line. She indicated right now there is no treatment at all, and
280 the town now has stormwater regulations.

281
282 Chair Plumer opened the discussion to the public for comments at 8:40 PM.

283
284 Mr. Grueter asked about the exit on Haven Lane and Ms. Libbey noted it was always part of the
285 property and part of the C-2 District.

286
287 Mr. Cameron asked about the large culvert that provides a lot of drainage to Portsmouth
288 Avenue.

289
290 Vice-Chair Brown indicated he was sure the residents appreciated the existing natural buffer
291 that is there now.

292
293 Ryan O'Brien of 20 Haven Lane expressed concerns about Jady Hill's wet basements and poorly
294 drained soils in the entire area. He expressed concerns with creating a water dam which would
295 flood all the existing homes. Mr. O'Brien expressed concerns with impact to wildlife habitat
296 which he described as a prime habitat and concerns that the wildlife would be cut off from their
297 drinking supply and interrupt the wildlife corridor's continuity. He expressed concerns with
298 traffic safety and was not sure why there had to be two ways in and out when most
299 developments have one. He expressed concerns about such a high density connecting directly
300 to single-family homes. He expressed concerns with the potential for cut-thru traffic and 124
301 units in a very small space connecting to Haven Lane. He noted concerns with green space
302 around the buildings and the buffer between the R-2 and C-2 districts and removing vegetation
303 that would extend Portsmouth Avenue into the neighborhood. He stressed that a buffer was
304 needed. He expressed additional concerns with water, water supply and sewer as well as water

305 pressure. He noted there was just a 3 million bond and questioned whether that was going to
306 manage this. He requested the development not be allowed to affect the Jady Hill area and to
307 remove the proposed connection to Haven Lane and to create a much wider vegetative buffer,
308 and to address water and wildlife migrations.

309
310 Kyle Taylor of 30 Haven Lane noted that he ran a landscape business and has done plowing in
311 the neighborhood. He witnessed the effect of a blizzard followed by a heavy rain event blocking
312 drains on Bonny Drive and the creek which ran down Haven Lane. He noted the drains are not
313 working and water ponds at Bonny Drive. The culvert in the woods is no longer there. He
314 expressed concerns with sewers and the big dig, storm drains and gas lines. He noted tree roots
315 are into the clay pipes. He has concerns with the man-made trenches. Mr. Taylor noted that
316 the 2023 MUND intent was not for this section to be tied to a commercial district.

317
318 (unidentified) of 11 Bonny Drive indicated problems with the basement, made comparison to
319 town versus city and wildlife concerns.

320
321 Taylor Adams of 8 Bonny Lane showed the poorly drained soils shown in orange on the town
322 map and questioned why they are not reflected on this plan. She expressed buffer impact
323 concerns and sump pumps already running to get water out of basements especially in the
324 winter and spring flooding season. She worried the hydraulic pressure would crack her
325 foundation. She expressed concerns with additional pavement, decreased value to existing
326 homes and water damage and the removal of a mature forest which provides great water
327 drainage, noise pollution and the number of units. She asked how water would be provided to
328 so many. She was also concerned about traffic and people cutting through if the connection
329 were made to Haven Lane, and speed control. She mentioned adverse possession, easements
330 and privacy fencing.

331
332 Lisa Medlock of 11 Haven Lane stated there are no sidewalks on Jady Hill. People walk in the
333 street. She expressed concerns with pollution, traffic, loss of green space and increasing heat
334 and energy consumption, drainage and property values. She stated that their neighborhood is
335 zoned R-2 and this was not intended to be C-2 mixed. Ms. Medlock read the purpose statement
336 in the ordinance: to lessen congestion, overcrowding, control population growth,
337 environmental stability, water, sewer and schools. She requested the project be scaled down
338 with no access to Bonny Drive or Haven Lane and to consider the water supply.

339
340 Danielle Frank of 31 Haven Lane discussed the natural environment existing and the flora and
341 fauna and dense population of wildlife. She expressed concerns that the large-scale
342 construction would damage this ecosystem. She noted that Article 3 expanded the MUND and
343 requires high quality development consistent with the scale of the neighborhood. She noted
344 her neighborhood is R-2 zoned homes and connection to it is not consistent with the intent of
345 MUND. The C-2 district is designed to support this kind of traffic.

346

347 Mr. and Mrs. Franceschi of 36 Haven Lane claimed a marker was removed and a lot of trees
348 destroyed already. Mrs. Franceschi expressed concerns with 700 residents in the school,
349 hospital, traffic and asked “do we want another Portsmouth?”

350

351 A resident of 22 Haven Lane echoed concerns with schools, police and fire. She asked to
352 consider the scope of the project, water runoff, wildlife and safety with no cut through.

353

354 Stephanie Franceschi of 36 Haven Lane expressed concerns about water in basements and
355 placing kids playing in danger.

356

357 Jen Thomas of 28 Haven Lane compared the development of the town to becoming a city. She
358 expressed concerns with congestion with so many additional residents in one place.

359

360 Ms. Belanger requested that letters that were received be placed on the website.

361

362 Josh of 10 Haven Lane expressed traffic impact and requested the development keep to the
363 Portsmouth Avenue side. He noted man made or not the drainage was necessary. He
364 recommended putting the proposed buildings at an angle with no access to Haven Lane and
365 proper drainage.

366

367 Chair Plumer indicated there should be a better transition between residential and commercial.

368

369 Ms. Martel agreed the MUND expansion intention may not be reflected.

370

371 Ms. English expressed concerns with the project backing up to a residential neighborhood.

372

373 Steve Taylor of 30 Haven Lane requested a site walk so the Board could see the buffer. He
374 noted he liked the idea of the diagonal angle to keep the three buildings on Portsmouth Avenue
375 and to have no access to Haven Lane.

376

377 ***Vice-Chair Brown moved that the design review process for Green Company, Planning Board***
378 ***Case #24-8 has concluded and to instruct the Town Planner to notify the applicant in writing***
379 ***pursuant to NH RSA 676:4. Ms. Belanger seconded the motion. A roll call vote was taken: Mr.***
380 ***Cameron voted aye, Chair Plumer voted aye, Vice-Chair Brown voted aye, Ms. English voted***
381 ***aye, Ms. Belanger voted aye and Mr. Grueter voted aye. The motion passed unanimously 7-0-***
382 ***0.***

383

384 V. OTHER BUSINESS

385

- 386 • Blind Tiger, LLC (Exeter Country Club) – 58 Jady Hill Avenue
387 Request for Extension of Conditional Approval granted July 13, 2023
388 PB #23-2

389

390 Chair Plumer read out loud the Public Hearing Notice.

391

392 (unidentified) requested a one-year extension on behalf of Blind Tiger, LLC.

393

394 ***Ms. English motioned to grant the request for a one-year extension of the approval for***
395 ***Blind Tiger, LLC. To July 13, 2025. Ms. Belanger seconded the motion. A roll call vote***
396 ***was taken: Ms. Belanger voted aye, Ms. English voted aye, Vice-Chair Brown voted***
397 ***aye, Chair Plumer voted aye, Mr. Grueter voted aye, Ms. Martel voted aye and Mr.***
398 ***Cameron voted aye. The motion passed unanimously 7-0-0.***

399

400 • Master Plan Discussion

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402 • Field Modifications

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404 • Bond and/or Letter of Credit Reductions and Release

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407 **VII. TOWN PLANNER'S ITEMS**

408 **VIII. CHAIRPERSON'S ITEMS**

409 Chair Plumer noted the next meeting is on August 8, 2024 for the Capital Improvement Plan.

410 **IX. PB REPRESENTATIVE'S REPORT ON "OTHER COMMITTEE ACTIVITY"**

411 **X. ADJOURN**

412 ***Vice-Chair Brown motioned to adjourn the meeting at 9:46 PM. Ms. Belanger seconded the***
413 ***motion. A vote was taken, all were in favor, the motion passed unanimously.***

414 Respectfully submitted.

415 Daniel Hoijer,

416 Recording Secretary

417 Via Exeter TV

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**TOWN OF EXETER
PLANNING BOARD
NOWAK MEETING ROOM
10 FRONT STREET
AUGUST 8, 2024
DRAFT MINUTES
7:00 PM**

I. PRELIMINARIES:

BOARD MEMBERS PRESENT BY ROLL CALL: Chair Langdon Plumer, Clerk, John Grueter, Gwen English, Jennifer Martel, and Nancy Belanger Select Board Representative

STAFF PRESENT: Town Manager Russell Dean, Town Planner Dave Sharples (remotely) Conservation & Sustainability Planner Kristen Murphy

II. CALL TO ORDER: Chair Plumer called the meeting to order at 7:00 PM and introduced the members.

III. OLD BUSINESS

APPROVAL OF MINUTES

July 11, 2024

Chair Plumer indicated approval of the July 11, 2024 minutes would be waived tonight.

IV. NEW BUSINESS:

Public hearing on the 2025 Capital Improvements Program (CIP) projects as presented by the Town Departments. Copies of the proposed document(s) will be available at the Planning Department Office prior to the meeting

Town Manager Russ Dean thanked the Departments for being at the meeting for the Capital Improvements Program. He indicated a 60% increase in the Town's valuation with a 26.78% lower tax rate projected to be set in November of this year.

Mr. Dean briefly reviewed some of the projects being presented such as the Linden Street Bridge which had an escalation in cost. He noted that the Town is working with Philips Exeter Academy for a drinking water source at Drinkwater Road, the Select Board voted to replace Pickpocket Dam, and the Town is looking for grant funding with a warrant article for that project in FY 25. He noted the substation is underway and the Town has an architect for that.

40 Mr. Dean indicated that the Departments reviewed the proposed CIP as a team.

41 PUBLIC WORKS

42 Public Works Director Steve Cronin indicated that Paul Vlasich, Steve Dalton and Jay Perkins were also
43 present.

44 Groundwater Source - \$6.8 m

45 Mr. Cronin discussed the groundwater source project evaluated in 2024. A site was identified on
46 Drinkwater Road which is part of a known aquifer and connected to the Lary Lane Treatment Plant.
47 Drilling and testing is happening this month. Private wells will be monitored. The Project will have final
48 design and connection with work on a building, transmission lines and rehabilitation of the Lary Lane
49 well.

50 Mr. Grueter asked about PEA's involvement and Mr. Cronin indicated there would be an easement
51 purchased which is included in the projected cost.

52 Great Bay Nitrogen General Permit - \$395,000

53 Mr. Cronin noted as part of this project the street sweeper would be replaced at a cost of \$385,000 and
54 \$10,000 would fund the enhanced sweeping program. Mr. Cronin explained that SARS funding was
55 applied for and is available with the Clean Water SRF (State Revolving Fund).

56 Pickpocket Dam - \$2,100,000

57 Mr. Cronin indicated the dam was reclassified as a high hazard dam in 2018 and a feasibility study
58 completed in 2024. The Select Board voted in June to remove the dam. There is a deadline for
59 completion in December, 2027 and multiple grants are being pursued, four that they are already aware
60 of.

61 Chair Plumer asked about the area of impact and work needed after removal. Paul Vlasich reviewed the
62 area from Haugh Road to Little River and noted there would be some monitoring afterward.

63 Mr. Grueter asked about the deadline in 2027 and Mr. Vlasich indicated the request for action resulted
64 in a negotiated date, the Select Board decided what to do and notified DES (Department of
65 Environmental Services).

66 Mr. Grueter asked if Mr. Vlasich thought there would be enough time and Mr. Vlasich indicated if the
67 Town secures funding but if the deadline isn't able to be met, they would talk about it.

68 Clemson Pond (pg. 29) - \$500,000

69 Mr. Cronin noted this is part of Wastewater Treatment to remove sediment and inspected and assessing
70 the condition of the CSO barrels at the discharge point.

71 Mr. Grueter asked if the tide gates are inspected regularly, and Mr. Cronin indicated this was inspected
72 and is known to be leaking.

73 Wastewater Treatment Effluent Flume (pg. 33) - \$245,000

74 Mr. Cronin indicated the concrete coating had failed and concrete is exposed. The cost is to replace the
75 coating.

76 Linden Street Bridge Rehabilitation (pg. 21) - \$1,257,900

77 Mr. Cronin indicated settlement and bulging were identified and the guardrail does not meet crash
78 ratings. Bids came in significantly higher than estimated (orig. est. \$500,000-\$600,000). There is
79 \$310,000 available in bridge aid.

80 Ms. Martel asked if the bridge was for vehicular traffic and Mr. Cronin indicated yes.

81 Mr. Grueter asked if the cost of construction was going down and Mr. Cronin indicated it was leveling
82 out but not dropping.

83 Fuel Island for Public Works Facility (pg. 2) - \$575,000

84 Mr. Cronin indicated the siphon pumps were at the end of their life and the canopy and base are
85 deteriorating. Public Works would also like to be able to track usage. A new location would be found.

86 Mr. Grueter asked if the cost included the underground tanks and Mr. Cronin indicated yes.

87 Front at Pine, Linden Street Intersection Improvement (pg. 16) - \$250,000

88 Mr. Cronin noted a proposed roundabout was funded and they have the design and are working with
89 abutters now. Easements are a part of that process, but this project is for inspecting drainage and sewer
90 pipes with advanced deterioration.

91 Transfer Station Improvement - \$100,000

92 Mr. Cronin indicated that the Sustainability Advisory Committee recommended a Styrofoam recycling
93 program which Kristen Murphy will detail. This cost is for paving and widening the entry, marking and
94 signage and relocating the cardboard and construction platform.

95 Truck #33 (pg. 68) - \$160,000

96 Mr. Cronin noted the 2008 International Dump would be replaced with a smaller F-550 with hook lift
97 and sander.

98 Sidewalk Tractor #58 (pg. 72) - \$50,000

99 Mr. Cronin indicated the existing tractor with a 20-year life span was purchased in 1991 and is used for
100 sidewalk snow plowing, and trimming brush.

101 Ms. English asked if it will continue to be used and Mr. Cronin indicated it would be traded or sold when
102 the replacement is acquired.

103 Surface Water Treatment Plant (pg. 3) - \$2 m in FY 2026 and tbd in FY 2027

104 Mr. Cronin indicated the plant is in the 100-year floodplain. This will be a costly item with \$2 million for
105 design work in FY 2026 and an amount to be determined in FY 2027. A request for quote (RFQ) will be
106 advertised this month.

- 107 Water Street Reconstruction (pg. 27) - \$600,000 in FY 2026 and \$6,305,000 in FY 2027
108 Intersection Improvement Program (pg. 20) - \$50,000 in FY 2026 (Phase III)
109 High Street Cross Country Sewer Rehabilitation - \$3,42 m in FY 2026
110 Mr. Cronin noted design funding in FY 2023 and an application for funding from the State Revolving
111 Fund.
112 Washington Street Improvements (pg. 26) - \$250,000 in FY 2027 and \$2,230,000 in FY 2028
113 Court Street Pumping Station (pg. 30) - \$500,000 in FY 2027, tbd in FY 2028 for building upgrades
114 Green Street Utility Reconstruction (pg. 19) - \$750,000 for design in FY 2028 and \$11,500,000 FY 29
115 Portsmouth Avenue Reconstruction (pg. 23) - \$75,000 FY 28, \$300,000 FY 29, \$4,910,000 FY 30
116 Mr. Cronin discussed traffic flow, stormwater, sidewalk and street 'scapes, water and sewer and traffic
117 and signal coordination needs.

118 RECREATION

119 Parks & Recreation Director Greg Bisson presented the CIP for Park Improvement detailed on Page 6
120 with funding of \$100,000. He indicated there were many projects and discussed in detail Gilman Park
121 which needed drainage, regrading and guardrail work. The depression where the playground used to be
122 needs to be leveled. He discussed the use of robotic mowers at other locations which is going well and
123 enclosing the portapottys. He noted the spray pad is 16 years old and will have repairs next year to
124 address the loss of hundreds of gallons of water from leaking pipes.

125 Mr. Bisson discussed rehabilitation of the pool house and repainting with help from PEA volunteers,
126 replacing windows and counter tops, removing cement walls and replacing with more modern poly,
127 making changing stalls ADA compliant and resurfacing the floor and painting walls. He noted the
128 facilities assessment recommended replacement, but he felt the rehabilitation would get another 20
129 years out of it.

130 Mr. Bisson discussed plans to continue the pathway to 10 Hampton Road.

131 Mr. Bisson discussed ADA accommodations for senior programming in FY 2025. A van would cost
132 \$90,000 - used and he is looking for grants.

133 Mr. Bisson discussed the condition of the tennis courts (pg. 14) and engineering. There was no drainage
134 considered in 1974 when they were constructed. Different concrete is recommended that will be crack
135 resistant. The property is eligible for land and water relief. Fencing will be replaced and there will be
136 ADA accommodation and potentially lighting until 9 PM.

137 PLANNING

138 Electric Vehicle Charging Stations Downtown (pg. 8)

139 Conservation & Sustainability Planner Kristen Murphy presented a proposal recommended by the
140 Sustainability Adv. Committee for four electric vehicle charging stations at the municipal lot. She

141 explained the recommendation of spots per registered vehicle by the US Dept. Energy at 3.4% with 22
142 needed and 17 available (including spots in Stratham) this would bring in more spots and business to
143 downtown. Revision Energy provided a high range quote for the four ports of \$120,000. The 30%
144 federal tax credit would be eligible and an 80/20 federal/local grant from the Department of
145 Transportation could be applied for next year.

146 The Board discussed how to keep vehicle charger users from leaving their cars parked after charging and
147 Ms. Murphy indicated there could be penalties and charging can be set up in a host of different ways.
148 Mr. Grueter noted there is a Walmart with electric vehicle charging stations that continues to charge a
149 fee while the car is parked in the station even after the vehicle is 100% charged.

150 Styrofoam Recycling (pg. 10)

151 Conservation & Sustainability Planner Kristen Murphy presented the proposal for funding a Styrofoam
152 recycling system at the transfer station. She noted that the Town of Gilford has one which takes the
153 Styrofoam and reduces it to long coils which are stored on pallets and marketed for sale at \$750/ton.
154 She noted this would also save on hauling fees. She noted of the \$80,000 cost there is a \$50,000 grant
155 available. Ms. Murphy noted there will be a Styrofoam recycling event this fall and that would be
156 hauled to Gilford who accepts the Styrofoam from other communities. The Styrofoam is hand fed into
157 the unit and there would be no food containers accepted. Ms. Belanger asked about additional
158 personnel and Ms. Murphy indicated possibly additional hours for the part-time staff.

159 Master Plan Update FY 2028 - \$50,000*

160 Town Planner Dave Sharples indicated the Master Plan was last updated in 2018 and all but one of the
161 66 or 67 items has been implemented. There were over 1000 responses to the survey.

162 Ms. Martel asked if \$50,000 would be enough. *Mr. Sharples indicated the figure would be updated
163 when closer to FY 2028.

164 Train Station (pg. 1)

165 Mr. Sharples indicated the proposal to upgrade the Downeaster Train Station and have design,
166 engineering and surveying.

167 Mr. Grueter asked about cost sharing and Mr. Sharples indicated he would have more information on
168 that at the next meeting. Chair Plumer noted it would be nice if the state stepped forward. Mr. Dean
169 noted there may be grant funding available for the right project. The State of Maine funds quite a bit of
170 it.

171 ADA Improvements (pg. 7)

172 Mr. Sharples noted the Building Inspector is the ADA coordinator for the Town. \$25,000 would be
173 funded for upgrades annually.

174 Police & Fire (pg. 11)

175 Mr. Sharples indicated the records management system would be upgraded to a cloud storage system.
176 The upfront cost is \$35,000 and then \$80,000/yr. with a cost of \$360,000.

177 Court Street Fire Station Renovation (pg. 5)

178 Mr. Sharples noted that the voters approved the new police and fire substation and all but five or six
179 items will be addressed with that new facility. The plan is to go back to the original design for Court
180 Street Station which was designed for four firefighters. After a break in period to see how things are
181 going with the new substation, they would like to address the hot, warm and cold zones for
182 decontamination and turnout gear.

183 Chair Plumer asked if the call center would remain. and Mr. Sharples noted that would be moved to the
184 new substation.

185 Radio Repeaters (pg. 12)

186 Mr. Sharples indicated this will be deferred until the new substation is built to see what coverage the
187 area would have.

188 Complete Street Study

189 Mr. Sharples noted there is a change in funding CIP from a minimum cost of \$25,000 to \$75,000 so the
190 Complete Street Study, one of the remaining items identified in the 2018 Master Plan, will be put in the
191 budget. Ms. Martel noted that study will be helpful with design for Portsmouth Ave.

192 **V. OTHER BUSINESS**

193

194 • Master Plan Discussion

195

196 • Field Modifications

197

198 • Bond and/or Letter of Credit Reductions and Release

199

200 **VII. TOWN PLANNER'S ITEMS**

201 Mr. Sharples reminded that the meeting on August 22nd will be the public hearing and begin at 6:30 PM
202 with the regular meeting to begin at 7 PM.

203 **VIII. CHAIRPERSON'S ITEMS**

204 **IX. PB REPRESENTATIVE'S REPORT ON "OTHER COMMITTEE ACTIVITY"**

205 **X. ADJOURN**

206 ***Ms. Belanger motioned to adjourn the meeting at 8:34 PM. Mr. Grueter seconded the***
207 ***motion. A vote was taken, all were in favor, the motion passed unanimously.***

208 Respectfully submitted.

209 Daniel Hoijer,
210 Recording Secretary (Via Exeter TV)



TOWN OF EXETER

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www.exeternh.gov

Exeter Planning Board

Langdon Plumer, Chair

Aaron Brown, Vice-Chair

John Grueter, Clerk

Gwen English

Pete Cameron

Jennifer Martel

Nancy Belanger, Select Board Rep

Dan Chartrand, Select Board Rep Alternate

August 22, 2024

Re: Capital Improvement Program 2025-2030

Honorable members of the Select Board:

On August 8, 2024 and August 22, 2024, the Planning Board held public hearings on the Capital Improvement Program 2025-2030. At the hearings, department heads presented their requests followed by an open discussion and dialogue between the board and the various Town departments submitting requests. After review, the Planning Board endorses the proposed plan with the following recommendations.

The Town should consider the availability of federal funding to help determine the timing of Capital Improvement projects. They should actively pursue any applicable funding and be open to the possibility of moving projects forward in a timely manner should funding be secured.

The Planning Board fully supports the new Police Station/Fire Substation and recommends this project should be a priority to protect the health, safety and well-being of our community.

Respectively submitted,

Langdon Plumer

Planning Board Chair

enc (1)

Town of Exeter
2025 -2030 Capital Improvement Program

Background

The Town of Exeter Capital Improvement Program (CIP) identifies the significant capital needs of the town and indicates how these improvements might be funded over a six-year period. It describes long-term capital needs for all municipal departments including highway, police, fire, parks and recreation, water, sewer, public library and other departments.

The Capital Improvement Program is a planning level document. It identifies and sequences projects, but does not provide for funding. Under the Town's form of government, the deliberative session and the voters make final decisions on the funding of recommended capital improvements.

The Capital Improvement Program is updated annually and projects change as circumstances change. Adjustments are made for new mandates, regulations, growth in population, transportation alternatives, changes in priorities, or other needs. One effective use of the CIP is that it provides for considerable advance project identification, public discussion, project design and definition of scope, cost estimating, and financial planning.

Purpose

The goal of the CIP is to establish a system of procedures and priorities by which to evaluate public improvement projects in terms of public safety, public need, project continuity, financial resources, and the strategic goals for the Town. The CIP allows town departments to establish a methodology and priority system to providing efficient and effective services. It also provides an opportunity for citizens and interested parties to voice their requests for community improvement projects.

Process

The Capital Improvement Program is coordinated annually by the Town's Planning Department. Municipal departments submit a 6-year listing of proposed CIP projects, including vehicle and equipment needs that are in excess of \$25,000. The requests are then reviewed and updated by the Town Manager and Town Planner and after some revision, presented to the Planning Board. The Planning Board provides recommendations at a working meeting in August and later in September, adopts the CIP, forwarding it to the Selectmen. Both the Budget Committee and Board of Selectmen review the CIP, with the latter determining the final list of projects to be presented at the Town Meeting each year. Under SB2, selected projects are then voted on by the voters at the March elections.

Guiding Principles

The guiding principles used to develop the Capital Improvement Program (CIP) are as follows:

- To preserve and improve town owned infrastructure through proper public facility planning, construction, rehabilitation and maintenance;
- To maximize the useful life of capital investments by scheduling major renovations and modifications at the appropriate time in the life-cycle of the facility;
- To identify and examine current and future infrastructure needs and establish priorities among projects so that available resources are used to the town's best advantage;
- To improve financial planning by comparing needs with resources, estimating future bond issues as required, and identifying potential fiscal implications to Exeter taxpayers and ratepayers;
- To provide a forward looking planning tool for the purpose of contributing to the creation of a stable property tax rate;
- To aid the Town's elected officials, appointed committees, and department heads in the prioritization, coordination, and sequencing of various municipal improvements;
- To inform residents, business owners and developers of needed and planned improvements.

About This Document:

This report is divided into multiple sections which are as follows:

Section 1: Facilities

Section 2: General Fund Projects

Section 3: Sewer Fund Projects

Section 4: Water Fund Projects

Section 5: Vehicles and Equipment – All Funds (General, Water, Sewer, Revolving)

Section 6: Financial Schedules

- Project Listing – General Fund
- Project Listing – Water Fund
- Project Listing – Sewer Fund
- Project Listing – Vehicles & Equipment
- Existing Debt Service – All Funds
- Proposed Debt Service – All Funds

DRAFT 2025-2030 CIP TABLE OF CONTENTS

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Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/27/2024

Year Funding is Requested: 2026

Project Title: Exeter Downeaster Train Station

Project Type: improvements

Project Cost: TBD

Department: Economic Development

Contact Name: Darren Winham

Project Ranking: _____ of _____

Useful Life (Years): TBD

Master Plan (Y/N): Yes

Growth Related (Y/N): Yes

Service Related (Y/N): No

Externally Mandated (Y/N): No



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other _____

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: improve transportation options, connectivity and provide regional vibrancy

Project Description

This project seeks to construct a new train station facility, complete with handicapped accessible bathrooms, informational kiosks, warming/waiting area, station host office, potential space for the Exeter Area Chamber of Commerce, bike racks, Quic-Trac machine, custodial closet and other amenities. Exeter's existing station consists only of a parking area, covered platform and a minimal informational display. With the exception of Haverhill (which is also a commuter rail station), Exeter is the only stop on the Downeaster without a train station. It is far and away the barest station and doesn't even offer bathrooms or access to a warm environment. This project would promote other-modal transportation, increase the safety and quality for rail passengers and contribute to the vibrancy of the community. Work will also include minor repairs to the existing platform and snow melt system. The \$50,000 will be used for architectural design and engineering (\$35,000) and miscellaneous items that include permitting, survey, site assessment, etc. (\$15,000).

The \$50,000					
FY25	FY26	FY27	FY28	FY29	FY30
	\$50,000				
Oper					
Total Operating Expense	\$0				
\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "

Salaries & Wages:	
Employees Benefits:	
Expenses:	0
Other:	
Total:	\$0

Estimated Project Cost: \$0

Estimated Fiscal Capital Cost

#REF!



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2025

Project Title: Public Works Facility - Fuel Island

Project Type: Highway - Facilities

Project Cost: \$575,000

Department: Public Works - Maintenance

Contact Name: Jeff Beck

Project Ranking: _____ of _____

Useful Life (Years): 50

Master Plan (Y/N): Yes

Growth Related (Y/N): No

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Project Description

The condition of the fuel island remains a concern for the department. The siphon pumps are outdated and at the end of their useful life, the canopy and island base are deteriorating, and the current fuel system does not allow for tracking of fuel and vehicle usage. Potential failure of the system presents both operational and environmental concerns.

The proposed location of the new fuel island was determined through conceptual site plans developed during previous Public Works Complex planning efforts, taking into consideration site circulation, safety, and departmental operations. It is recommended that the future fuel tanks be constructed under ground. As this is an immediate need, Public Works is proceeding with replacement in FY25, while it plans for future improvements to the overall Public Works Complex.

Estimated Costs:

Design, Permitting, & Engineering -	\$50,000
Field Island Replacement -	\$475,000
Contingency -	\$50,000
Total -	\$575,000

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other _____

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year						
FY25	FY26	FY27	FY28	FY29	FY30	
\$575,000	\$0	\$0	\$0	\$0	\$0	
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
\$0	\$0	\$0	\$0	\$0	\$0	

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	_____
Estimated Project Cost:	\$575,000
Estimated Fiscal Capital Cost	
	\$575,000



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

Year Funding is Requested: 2026

Project Title: Surface Water Treatment Plant

Project Type: Utility: Water

Project Cost: \$2,000,000

Department: Public Works - Water

Contact Name: Steve Dalton

Project Ranking: _____ of _____

Useful Life (Years): 50

Master Plan (Y/N): No

Growth Related (Y/N): Yes

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Project Description

Both surface water (SW) and groundwater (GW) supplies are required to meet the Town's total water supply needs in accordance with our Integrated Management approach to water supply. The need for reliable surface water supply has become more apparent since testing in 2020 has shown that three of the existing groundwater supplies have less sustainable capacity than originally estimated, about 1.0 million gallons per day (MGD) while current peak demand is about 1.6 MGD. The Town is moving forward with development of additional groundwater supply capacity, but must also address upgrading or replacing the surface water treatment plant (SWTP) which currently provides 50-60% of the Town's water. The SWTP was initially constructed in 1905, and upgraded in 1924, 1972, and 1992. Based on the age of the facilities, limitations of the process, the constrained site, and the location in a flood zone that has resulted in two major flood events at the existing SWTP, rebuilding on this site is not recommended. It is noted that the potential for flooding is only expected to increase with climate change and predicted sea level rise. Therefore, construction of a new SWTP at a new site is recommended. The goal is for the new SWTP to supplement the GW supplies and provide closer to 30%-40% of the Town's water. An early estimate of the required capacity is 1.3 to 1.5 MGD, about half of the capacity of the SWTP proposed and designed in the early 2000's. Options for a new site are limited. The Town-owned "Sportsmans Club" parcel has been previously identified due to its higher elevation and proximity to the Exeter Reservoir and should be evaluated, including the need for lead shot remediation, and compared to other potential sites. A planning/preliminary design effort is in progress to evaluate potential sites, establish the required capacity, the most appropriate treatment process, and refine projected costs.

2024 Town Meeting authorized \$500,000 for Planning and Preliminary Design efforts, which will include the following:

- Confirm design flow for SWTP, depending on GW supplies.
- Site alternatives investigations.
- Refine water main connections to new plant .
- Collect seasonal water quality data for final design.
- Piloting of treatment alternatives & refine treatment processes and plant configuration.
- Develop opinions of probable costs.
- Evaluate repurposing of existing site.

A \$500,000 DWSRF loan has been secured for preliminary design. The Public Works Department intends to submit DWSRF pre-applications for final design and construction in 2026.

Schedule and Phases: Permitting and Design (2026); Start Construction (2027); Substantial Completion (2029); Decommission Existing Plant (2030)

Total Capital Cost by Fiscal Year

FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$2,000,000	TBD	\$0	\$0	\$0

Operating Budget Impact by Fiscal Year

Total Operating Expense (estimated) by Fiscal Year

\$0	\$0	\$0	\$0	\$0	\$0
-----	-----	-----	-----	-----	-----

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

" Annual Operating Impact "

Salaries & Wages:
 Employees Benefits:
 Expenses:
 Other:

Total: _____

Estimated Project Cost: \$2,000,000

Estimated Fiscal Capital Cost

\$2,000,000



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/14/2024

First Year Funding is Requested: 2025

Project Title: Transfer Station Improvements

Project Type: Highway

Project Cost: \$100,000

Department: Public Works - Highway

Contact Name: Jay Perkins

Project Ranking: of

Useful Life (Years): 30

Master Plan (Y/N): No

Growth Related (Y/N): Yes

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

The Exeter Transfer Station, located at 9 Cross Road, processes approximately 80 tons of Construction & Demolition Debris, 1,300 tons of Recyclables, and 2,800 ton of Mixed Solid Waste per year in addition to brush, leaf and yard waste, food waste, and ash. The purpose of this request is to design and construct improvements to the Transfer Station aimed at addressing station access, vehicle circulation, attendant safety, maximizing use of the site, and improving the efficiency of operations. The improvements will include widening the entry, installing pavement markings and signage, relocating the carboard and construction debris disposal platform, paving the site, and constructing stormwater controls. This project is being proposed in conjunction with the Planning Department's FY25 CIP request for a Styrofoam Recycling Unit.

Total Capital Cost by Fiscal Year						
	FY25	FY26	FY27	FY28	FY29	FY30
	\$100,000	\$0	\$0	\$0	TBD	\$0
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
	\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total: _____	
Estimated Project Cost:	\$100,000
Estimated Fiscal Capital Cost	
\$100,000	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

First Year Funding is Requested: **2028**

Court Street Fire Station

Project Title: **Renovation and/or Construction
Design, Engineering & Construction**

Project Type: Municipal Facilities
Project Cost: TBD

Department: Fire
Contact Name: Chief Justin Pizon

Useful Life (Years): 50-100
Master Plan (Y/N): Yes
Growth Related (Y/N): Yes
Service Related (Y/N): Yes
Externally Mandated (Y/N): No



Project Description

1. General Project Description? Upon completion of the new Police Station/Fire Substation on Continental Drive, an updated space needs assessment will be conducted to determine the best use of the 20 Court Street facility. In the best interest of tax payers, the fire department will embrace a rolling assessment of needs over time. Once the Police Department vacates 20 Court Street, a live in period will follow. The number of personnel assigned to the 20 Court Street station will return to the same number it was when the building opened in 1979. Our vision includes the possibility of having "Inspectional Services" located on the first floor of the complex, where the Police Administrator currently sits. Our office manager may relocate to the first floor to greet the public when they enter the building. Due to the amount of foot traffic Fire Prevention and Health have daily, a first floor space makes sense where the building does not have an elevator. This may also open the opportunity for other inspectional services, such as the Building Inspector, to be relocated to 20 Court Street. There is a tremendous amount of cross over between departments that are currently located in different areas of town. This would allow for a streamlined process when customers look for guidance and permits while freeing up space in other buildings. Other, small scale renovations, would include proper separation between the cold, warm, and hot zones for contaminated personal protection equipment and an access point from the fire department second floor to the second floor of the (current) police department. Currently the only access point between the buildings is going to the first floor lobby. We do not anticipate any needs until the police department has fully vacated 20 Court Street. We envision revisiting this project in the 2027-2028 timeframe.

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year

FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$0	\$0	\$0	\$0	\$0

Operating Budget Impact by Fiscal Year

Total Operating Expense (estimated) by Fiscal Year					
			\$0	\$0	\$0

" Annual Operating Impact "

Salaries & Wages:
Employees Benefits:
Expenses:
Other: _____

Total: _____

Estimated Project Cost: _____

Estimated Fiscal Capital Cost

TBD



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 5/29/2024

Year Funding is Requested: 2025

Project Title: Park Improvement Fund
 Project Type: Multiple
 Project Cost: \$100,000.00

Useful Life (Years): 30
 Master Plan (Y/N): Y
 Growth Related (Y/N): Y
 Service Related (Y/N): Y
 Externally Mandated (Y/N): N

Department: Parks and Recreation
 Contact Name: Greg Bisson



Project Description

The Park Improvement Fund is vital in revitalizing our parks system and making a significant impact on our community. The following 2025 projects are examples of projects on the horizon that could be accomplished if funded. These projects all need to be completed but are subject to cost.

Project 1: Electrical Hookups at Gilman Park and Park St Common. This is the first step in enhancing these parks. Power at Gilman Park will allow us to expand the pavilion use, a future irrigation system on the T-ball field, and other uses. Electrical at Park St Common will allow us to install an irrigation system and other amenities. Estimate: \$10,000

Project 2: Complete guard rail with Trees at Gilman Park: The side on the pavilion Estimate: \$7,000

Project 3: Excavate/Level the former basketball site to improve drainage. The current topography directs water toward the pavilion and parking lot. Proper leveling would direct all water toward the woods and prepare the site for a future playground. Estimate: \$5,000

Project 4: Level greenspace at Gilman Park. The site has several depressions from former structures. Filling these depressions would eliminate trip and fall hazards. Estimate: \$3,000

Project 5: Repave the pathway at Rec Park and connect to 10 Hampton Rd. This path was paved 15 years ago and is starting to heave and crumble in various areas. Repaving and widening the pathway would allow a solid ADA surface for patrons walking in each direction. Estimate: \$10,000

Project 6: Porta Potties enclosures. We place several porta potties in area parks. These can be unsightly, but the enclosure can hide and stabilize them so high winds or vandals can not tip them over. Estimate: \$5,000

Project 7: Spray Pad repair- The spray pad is now 16 years old. It was the first municipal spray pad in the state of NH. Unfortunately, we discovered several leaks, causing us to lose water; thus, we had to shut off some elements. To make a proper repair, the site needs to be cut into the current concrete to locate all the leaks. To cover the patches and make them watertight, we will need to put a unique rubber surface over the entire concrete pad for the spray pad. Upgrades to elements will be made at this time. Estimate: \$35,000

Project 8: Tennis Court Resurfacing and Crack Repair: We would attempt this internally—cost of the material to perform the work until a tennis court solution is achieved. Estimate: \$20,000

Due to the backlog of maintenance items, we have multiple park improvements not listed to accomplish. We will work on these projects if we can. The items listed above are only a small fraction of the needed renovations and improvements.

FY25	FY26	FY27	FY28	FY29	FY30
\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000

Operating Budget Impact by Fiscal Year

Total Operating Expense (estimated) by Fiscal Year
\$0

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

" Annual Operating Impact "

Salaries & Wages:
 Employees Benefits:
 Expenses:
 Other:

 Total: \$ -

Estimated Project Cost: _____

Estimated Fiscal Capital Cost

100,000



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

Year Funding is Requested: 2025

Project Title: Capital Reserve Fund for ADA Improver

Project Type: Improvements

Project Cost: \$25,000

Department: Planning

Contact Name: Dave Sharples

Project Ranking: _____ of _____

Useful Life (Years): TBD

Master Plan (Y/N): Yes

Growth Related (Y/N): Yes

Service Related (Y/N): No

Externally Mandated (Y/N): No



Project Description

The Town approved a warrant article in 2019 for the purpose of conducting and creating an American Disability Act (ADA) improvements plan for town facilities and infrastructure including roads, sidewalks, and other pedestrian safety improvements. This plan has been completed and includes a list of projects that will improve accessibility for all users. This Capital Reserve Fund will be established to fund these improvements over time.

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other _____

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year

FY25	FY26	FY27	FY28	FY29	FY30
\$25,000					

Operating Budget Impact by Fiscal Year

Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "

Salaries & Wages:
 Employees Benefits:
 Expenses: 0
 Other:

Total: \$0

Estimated Project Cost: \$0

Estimated Fiscal Capital Cost

\$0



Town of Exeter, New Hampshire

2025-2030

Date Submitted: 5/22/2024

First Year Funding is Requested: 2025

Project Title: Public EV Charging Facility

Project Type:

Project Cost: \$120,000

Department: Planning

Contact Name: Kristen Murphy

Project Ranking: _____ of _____

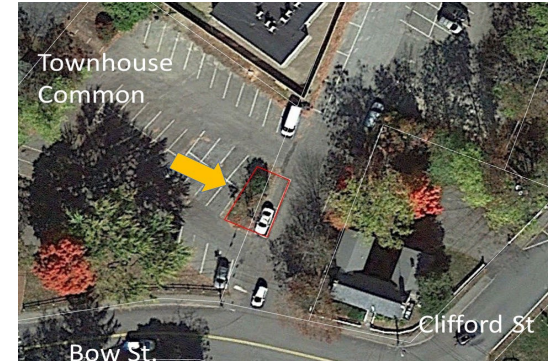
Useful Life (Years): 50+

Master Plan (Y/N): Yes

Growth Related (Y/N): No

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Project Description

Electric vehicles (EV) are becoming more and common with expectations they will make up 40% or more of all cars sold within the next 10 years. Siting publicly accessible charging infrastructure will not only provide a necessary service to residents who may not have access to a private charger, but will also be an economic attractant encouraging visitors to spend the time and therefore money at local businesses. Supporting the expansion of electric vehicle usage is an important step Exeter can take to reduce carbon emissions from gas powered vehicles. The Exeter Energy Committee is seeking funding to support the installation of 4 Level II charging stations. Level II charging stations provide an approximate range of 20 miles for 1 hour of charging. Users would be expected to pay for their own electricity via credit card when charging their vehicle. The Water Street parking lot is convenient to local shoppers and downtown residents. EV charging costs can be set up with financial deterrents to prevent space occupation beyond the period it takes to charge a vehicle. According to the US Department of Energy's EV tool EV-ProLite, to meet the charging infrastructure demand, 3.4% of your registered electric vehicles should be Public Level II chargers. Based on 2023 registrations, Exeter residents alone need 22 chargers, and increases to 45 chargers if we model a 20% growth (our average for the past 5 years). There are currently 6 in Exeter and an additional 11 in Stratham (17 total).
 Potential Funding Offset: Project would qualify for a Direct Pay Tax Credit of 30% which would reimburse up to \$36,000. It may also qualify for DOT Charging Fueling Infrastructure (CFI) Grant that provides an 80:20 (federal:local) Notice of Funding Availability (NOFA) for this grant is typically announced in May.

Townhouse Common Area - 4 unit \$ 120,000

\$120,000

Total Cost: \$120,000

AS	FY25	FY26	FY27	FY28	FY29	FY30
	120,000	\$37,000				

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other _____

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: Energy Efficiency - Sustainability _____

" Annual Operating Impact "

Salaries & Wages:
 Employees Benefits:
 Expenses:
 Other: _____
Total: _____
 Estimated Project Cost: _____ \$0

Estimated Fiscal Capital Cost

\$120,000



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/24/2024

Year Funding is Requested: 2028

Project Title: Master Plan Update

Project Type: Planning/Study

Project Cost: \$50,000

Department: Planning

Contact Name: Dave Sharples

Project Ranking: _____ of _____

Useful Life (Years): TBD

Master Plan (Y/N): Yes

Growth Related (Y/N): Yes

Service Related (Y/N): No

Externally Mandated (Y/N): No



Project Description

The Town approved a warrant article in 2017 for the purpose of updating our Master Plan. The Master Plan update was formally adopted by the Planning Board in 2018. The Town has been active in pursuing the Action Agenda in the 2018 Master Plan and has either completed or is currently working on a majority of the action items. State statutes recommend updating the Master Plan every 5-10 years. It is anticipated by 2028 that the Town will be ready to update the current Master Plan.

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other _____

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
				\$50,000	

Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	0
Other:	
Total:	\$0
Estimated Project Cost:	\$0
Estimated Fiscal Capital Cost	
\$0	



Town of Exeter, New Hampshire

2025-2030

Date Submitted: 5/22/2024

First Year Funding is Requested: 2025

Project Title: Styrofoam Recycling Unit

Project Type:

Project Cost: \$80,000

Department: Planning / DPW

Contact Name: Kristen Murphy

Project Ranking: _____ of _____

Useful Life (Years): 50+

Master Plan (Y/N): Yes

Growth Related (Y/N): No

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Project Description

Modeled after a program implemented in Gilford, NH, the Exeter Planning and Public Works Department are proposing to install a styrofoam recycling unit (FoamCycle.com) at the Exeter Transfer Station. The FoamCycle system includes a lockable shipping container that houses a foam densifier, interior styrofoam collection space, and an external foam collection bin. The densifier unit heats and densifies #6 expanded polystyrene packaging (EPS) and #6 polystyrene food service foam (PS), both commonly known as Styrofoam. Once densified, it creates coils of densified foam that can be sold on the market as a commodity. This unit will create a Foam Recycling Program designed to work as a "Hub and Spoke" concept where styrofoam can be collected by Exeter residents at the transfer station drop off bin, and outlying communities (spoke sites) will also be able to collect foam through community events and bring it to the facility. The foam material collected will be stored within the self contained system and processed as necessary by Public Works staff. The benefit to this system is it has the capability of diverting styrofoam, a large bulky item currently landfilled. Processing this waste will provide hauling savings for the Town and create a commodity that we can sell at approximately \$750/ton. **Potential Funding Offset:** RecycleFoam.org offers a \$50,000 grant with a March-April yearly application window.

Check all that apply

2025 - 2030 Source of Funding

GO Bond/Borrowing

Grants

Taxes

Water Fees

Sewer Fees

Impact Fees

Revolving Funds

Other _____

Project Benefits

Reduces Liability

Health or Safety

Reduces Long Term Debt

Other: Energy Efficiency - Sustainability

A.	Foam/Cycle Unit	\$ 72,000	
B.	Site prep/electrical hookup	\$ 8,000	
			\$80,000
	Total Cost:		\$80,000

AS	FY25	FY26	FY27	FY28	FY29	FY30
	80,000					

" Annual Operating Impact "

Salaries & Wages:

Employees Benefits:

Expenses:

Other: _____

Total: _____

Estimated Project Cost: _____ **\$0**

Estimated Fiscal Capital Cost

\$80,000



Town of Exeter, New Hampshire

2024 - 2029 CIP Project Request Form

Date Submitted: 5/31/2024

First Year Funding is Requested: **2026**

Project Title: Police and Fire Records Management S

Project Type: Public Safety

Project Cost: \$437,160

Department: Police and Fire

Contact Name: Chief Stephan Poulin Chief Justin Pizon

Useful Life (Years): 20 years

Master Plan (Y/N): No

Growth Related (Y/N): Yes

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Project Description

The current records management system is called IMC and is through Central Square. It was implemented at the Exeter Police and Fire Department over 24 years ago in the year 2000. The system is now archaic, inferior, and has been pushed aside by its own company to introduce newer systems that are cloud based and technologically advanced. Research of a new RMS and CAD (computer aided dispatch) system from CSI Technology Group found that they offer systems that are entirely cloud based, offer the latest technology and rapid integration, easy and painless migration of old records, GIS, vast statistical abilities for charting, smooth agency interoperability (other local NH agencies and State Police are switching to CSI) and attentive customer and tech support. The quote for 2024 is an initial start up fee of \$35,000 and a five year fee of \$80,432 for a total of \$437,160.

Check all that apply

2026 - 2029 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year

FY25	FY26	FY27	FY28	FY29	FY30
	437,160		\$0	\$0	\$0

Operating Budget Impact by Fiscal Year

Total Operating Expense (estimated) by Fiscal Year					
			\$0	\$0	\$0

" Annual Operating Impact "

Salaries & Wages:

Employees Benefits:

Expenses:

Other: _____

Total: _____

Estimated Project Cost: _____

Estimated Fiscal Capital Cost

\$0



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

First Year Funding is Requested: **TBD**

Project Title: **Communication Repeater Site**

Project Type: Infrastructure & Technology

Project Cost: **\$93,759**

Department: Police & Fire

Contact Name: Chiefs Poulin & Pizon

Useful Life (Years): 10 years

Master Plan (Y/N): No

Growth Related (Y/N): Yes

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

1. General Project Description? Complete the final leg of the public safety communications system by installing a microwave repeater site on the Cross Road Water Tower. This system will support all 1st Responder communications (Fire, Police, & Public Works) personnel to talk on a 5 watt portable radio or vehicle and have confidence that the signal will be received by the dispatcher. This project began approximately eight years ago with the first phase being the completion of a microwave link between the public safety complex and the Epping Road water tower. In 2021, we completed the link on the Fuller Lane Water Tower, leaving only the Cross Road site to complete the project. The radio equipment, including a GTR 8000 base station or similar model can be installed on the Cross Road water tower, with antennas, mounting system, and necessary factory programming. An outdoor shelter suitable for electronic equipment and a power source may be necessary on site. Grants will also be investigated to potentially offset costs.

THIS PROJECT IS DEFERRED UNTIL THE NEW POLICE/FIRE SUBSTATION IS COMPLETED

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$0	\$0	\$93,759	\$0	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
			\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	_____
Total:	_____
Estimated Project Cost:	_____
Estimated Fiscal Capital Cost	
\$93,759	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

Year Funding is Requested: 2028

Project Title: 10 Hampton Rd Parking Lot expansion

Project Type: Multiple

Project Cost: TBD

Useful Life (Years): 30

Master Plan (Y/N): Y

Growth Related (Y/N): Y

Service Related (Y/N): Y

Externally Mandated (Y/N): N

Department: Parks and Recreation

Contact Name: Greg Bisson



Project Description

The property currently has 50 unmarked parking spaces. Depending on design and layout, the property can accommodate an additional 20-30 spaces. The property will need to be engineered to allow drainage so as not to impact the current building on site or abutters. Parking will be a priority once the building is fully developed. The Parks and Recreation Department will work with Public Works to develop the parking lot expansion along with an outside vendor.

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

	FY25	FY26	FY27	FY28	FY29	FY30
Operating Budget Impact by Fiscal Year	\$0	\$0	\$0	TBD	\$0	\$0
Total Operating Expense (estimated) by Fiscal Year	\$0	\$0	\$0	TBD	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	\$ -
Estimated Project Cost:	
Estimated Fiscal Capital Cost	
	-



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

Year Funding is Requested: 2027

Project Title: Tennis Court Construction
 Project Type: Multiple
 Project Cost: TBD

Useful Life (Years): 30
 Master Plan (Y/N): Y
 Growth Related (Y/N): Y
 Service Related (Y/N): Y
 Externally Mandated (Y/N): N

Department: Parks and Recreation
 Contact Name: Greg Bisson



Project Description

The design and engineering of the tennis courts will provide the town with cost estimates for replacing the courts and address all ADA accessibility and drainage. The material recommended for the replacement is Post Tension Concrete. This material and technique would prevent structural cracking in the court surfacing and carry a 30-year guarantee. This project would qualify for a 50% match through the Land, Water Conservation Fund. The Courts are currently 20 years old and have severe drainage issues. This drainage has caused significant cracking and heaved many of the fence posts. The facility assessment documented that the fencing is in poor shape and needs replacement. The surfacing has gone through extensive repairs yearly for the last couple of years. The surface will continue to deteriorate and become costly to repair each year. This is an expense that will add up quickly and ultimately cause the courts to be unplayable. The cost of the tennis court is unknown at this time until the design and cost estimate is developed. Potential to be placed on warrant article in 2027 but would need wait until the LWCF grant award in the fall of 2027 with construction in 2028.

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

	FY25	FY26	FY27	FY28	FY29	FY30
Operating Budget Impact by Fiscal Year	\$0	TBD	\$0	\$0	\$0	\$0
Total Operating Expense (estimated) by Fiscal Year	\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	\$ -
Estimated Project Cost:	
Estimated Fiscal Capital Cost	
	100,000



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

Project Title: Tennis Court Engineering
 Project Type: Multiple
 Project Cost: TBD

Year Funding is Requested: 2026

Useful Life (Years): 30
 Master Plan (Y/N): Y
 Growth Related (Y/N): Y
 Service Related (Y/N): Y
 Externally Mandated (Y/N): N

Department: Parks and Recreation
 Contact Name: Greg Bisson



Project Description

The Courts at 4 Hampton Rd were initially built in 1974 when the park was built. At that time, no drainage was not considered. Twenty-five years later, The town had to reconstruct the courts again due to cracking, with no drainage modifications. At that time, the town only milled down the court's surface and repaved it on the existing undisturbed site. No other changes were made to the court, especially access or fencing. The years have taken their toll on the courts, with fences post-heaving, fences falling apart, non-ADA courts, and no drainage. In 2023/24, the town worked with New England Courts to repair the cracks formed around past repair patches that had begun to peel, causing tripping hazards. Crack repair is growing and unsustainable. This has been an ongoing problem for the last 15 years. The courts didn't even last 5 years before the first cracks started to form. At the time, we used the RiteWay Crack Repair System, which lays a fiberglass membrane over the crack to prevent water from infiltrating the courts and causing more cracks. Unfortunately, this does not stop water from infiltrating from below. The sub-base is failing, the drainage is nonexistent, and needs to be upgraded before the courts become more unrepairable and unsafe to play on. We have hundreds of players playing Tennis, Pickleball and Basketball. Having the courts down in parts of 2023/24 also presented many challenges. Additional Damage will continue this pattern.

After speaking with several court companies, Everyone suggested developing a site plan for improved drainage, ADA accessibility on all courts, and any additional or modification to the surface. As noted in the 2023 Facility assessment with the Bureau Veritas recommends repairing the surfacing and replacing the fence without addressing the underlying cause of the surface. Getting qualified engineering to address this drainage and design a post-tension concrete surface is our first step in permanently repairing the tennis courts. The town already has data from the 2020 Rec Park Design and Engineering, such as topography and current conditions. Post Tension Concrete is the most durable for court surfacing and must only be repainted every 5-7 years. This surface type will not crack due to the harsh New England weather, ending our battle with consistent surface repair. A design and cost estimate will allow for the town to apply for LWCF funding to help rebuild this facility, saving the town up to \$500,000. The Design and Engineering of the project can be used as part of the required match for the grant. We have gotten quotes on painting the surfacing, fencing, and future light options. A design will bring this all together and allow the town to move forward with this replacement. LWCF takes a while to get the appropriations, so getting the design in 2026 and applying for LWCF. The tennis court's cost is unknown until the design and cost estimate is developed. Potential to be placed on warrant article in 2027 but would need to wait until the LWCF grant award in the fall of 2027 with construction in 2028.

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

	FY25	FY26	FY27	FY28	FY29	FY30
Operating Budget Impact by Fiscal Year	\$0	TBD	\$0	\$0	\$0	\$0
Total Operating Expense (estimated) by Fiscal Year	\$0	TBD	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	\$ -
Estimated Project Cost:	
Estimated Fiscal Capital Cost	
TBD	



Town of Exeter, New Hampshire
2025- 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2025

Project Title: Intersection Improv. - Front at Pine and Linden Streets
Project Type: Infrastructure - Drainage & Sewer
Project Cost: \$250,000

Project Ranking: _____ of _____
Useful Life (Years): 35
Master Plan (Y/N): Yes
Growth Related (Y/N): No
Service Related (Y/N): Yes
Externally Mandated (Y/N): No

Department: Public Works - Highway & Sewer
Contact Name: Paul Vlasich



Check all that apply
2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description
 Design of a proposed roundabout for the Front Street at Pine and Linden Streets intersection is in progress. The benefits of this upgrade include decreased vehicle speeds, improved turning movements from Pine and Linden Streets, and increased pedestrian access and safety.

 Recent camera inspections of the sewer and drainage infrastructure has determined that the pipes within the work limits are beyond the point of rehabilitation, as initially planned. In their advanced condition, replacement is recommended. This work would happen in conjunction with the planned intersection improvements in FY25.

 Sewer Main Relacement - \$150,000
 Drainage Replacement - \$100,000

Total Capital Cost by Fiscal Year						
	FY25	FY26	FY27	FY28	FY29	FY30
	\$250,000	\$0	\$0	\$0	\$0	\$0
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
	\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	_____
Estimated Project Cost: \$ 250,000	
Estimated Fiscal Capital Cost	
\$250,000	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2029

Project Title: Drinkwater Road Culvert Replacement

Project Type: Highway

Project Cost: TBD

Department: Public Works - Highway

Contact Name: Jay Perkins

Project Ranking: of

Useful Life (Years): 50

Master Plan (Y/N): No

Growth Related (Y/N): Yes

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

This project will evaluate mitigation strategies to reduce flooding along Drinkwater Road and Prentiss Way due to an undersized stream crossing. During some storm events, the undersized infrastructure causes overtopping of Drinkwater Road and flooding of upstream properties. Previous studies identified this as a flood hazard crossing: Climate Adaptation Plan for Exeter (CAPE), 2018 Hazard Mitigation Plan, and 2017 Climate Risk in the Seacoast Vulnerability Assessment. The CAPE study found that the Drinkwater stream crossing is inundated by 5-feet of water during a 100-YR storm event. The 2017 Climate Risk Vulnerability Assessment ranked this culvert with failing hydraulic rating for the 25-, 50-, and 100-YR storm events.

The Town applied for a 2022 Critical Flood Risk Infrastructure Grant (CFRING) with the help of a consultant, but was not selected for the grant.

The costs, adjusted for inflation, from the CFRING application for a basis of design study have been carried forward at \$135,000. Design and construction costs for a future date are TBD.

Total Capital Cost by Fiscal Year						
FY25	FY26	FY27	FY28	FY29	FY30	
\$0	\$0	\$0	\$0	\$135,000	TBD	
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
\$0	\$0	\$0	\$0	\$0	\$0	

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total: _____	
Estimated Project Cost: \$135,000	
Estimated Fiscal Capital Cost	
\$135,000	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2025

Project Title: Great Bay Total Nitrogen General Permit

Project Type: Environmental

Project Cost: \$395,000

Department: Public Works - Highway & Sewer

Contact Name: Paul Vlasich

Project Ranking: _____ of _____

Useful Life (Years): 35

Master Plan (Y/N): No

Growth Related (Y/N): Yes

Service Related (Y/N): Yes

Externally Mandated (Y/N): Yes



Project Description

The Great Bay Total Nitrogen General Permit (GBTNP) has been issued to NH communities with wastewater treatment facilities whose discharges reach Great Bay. The permit is for five years and includes an adaptive management process for possible nutrient reductions in non-point source (NPS) stormwater runoff. This voluntary NPS nitrogen reduction was included as a way to stem more stringent WWTF effluent restrictions at the end of the permit. The current request is for Year 5 of the permit.

The NPS adaptive management framework consists of five categories:

- Water Quality Monitoring
- Nitrogen Tracking
- Nitrogen Source Reduction Plan
- Threshold Study
- TMDL - Total Maximum Daily Load timeline development

The Town entered into an Intermunicipal Agreement with other Great Bay communities to partner in this adaptive management framework including cost sharing responsibilities. The Town submitted an adaptive management plan to EPA for the permit term in July 2021. These programs are anticipated to be funded partially through the capital improvement program, the highway stormwater budget, and the sewer budget. Although the permit is necessitated by wastewater discharges, the NPS stormwater discharge improvements are generally paid from the general fund.

Elements of the Adaptive Management Plan supported by the FY25 operating budget include:

- Water Quality Monitoring, Nitrogen Tracking, Threshold Study: \$75,000/yr to Municipal Alliance from Sewer Fund Budget.
- Catch Basin Replacements: \$28,000/yr from General Fund Budget.
- Land Use Regulation Review: Exeter Planning Department.

Elements of the Adaptive Management Plan requesting to be supported in the FY25 CIP:

Nitrogen Source Reduction Efforts & Stormwater Nutrient Removal: Street Sweeper Replacement (\$385,000) & Enhanced Sweeping Program Development (\$10,000)*.

*A CWSRF pre-application has been submitted for the Street Sweeper and development of an Enhanced Sweeping Program.

Future GBTNP CIP requests could include incentivizing programs for advanced septic systems and stormwater BMP retrofit studies.

Total Capital Cost by Fiscal Year						
FY25	FY26	FY27	FY28	FY29	FY30	
\$395,000	\$100,000	\$75,000	\$50,000	\$25,000	TBD	
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
\$0	\$0	\$0	\$0	\$0	\$0	

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	_____
Estimated Project Cost:	\$395,000
Estimated Fiscal Capital Cost	
\$395,000	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/24/2024

First Year Funding is Requested: 2028

Project Title: Green Street Neighborhood Utility Reconstruction

Project Type: Utility Replacement

Project Cost: \$12,250,000

Department: Public Works - Engineering

Contact Name: Paul Vlasich

Project Ranking: _____ of _____

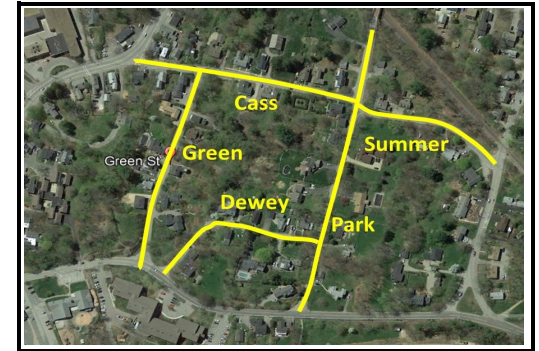
Useful Life (Years): 50

Master Plan (Y/N): No

Growth Related (Y/N): No

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

Where possible, the Public Works department prefers to replace several utilities at the same time in a street. For the purposes of this project, the Green Street neighborhood consists of: Green Street, Cass Street, Dewey Street and portions of both Park Street and Summer Street. The proposed improvements include 4,500 linear feet of new water main, an updated stormwater management system, 4,600 linear feet of sewer line replacement, and full-depth reconstruction of the roadway. Options for pedestrian improvements will be evaluated during design.

A distribution flow analysis and the Water System Asset Management Plan and have determined that existing water mains are undersized and have reached the end of their expected useful life. Additionally, an evaluation of the sewer and drain lines during the development of the Sewer System Asset Management Plan has determined that they are in poor condition and in need of replacement. These utilities will be upgraded to meet current standards and regulations.

Design is anticipated in FY28 with construction beginning in FY29.

Costs:

FY28 Design - \$750,000
 FY29 Construction - \$11,500,000
 Total - \$12,250,000

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$0	\$0	\$750,000	\$11,500,000	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total: _____	
Estimated Project Cost: \$12,250,000	
Estimated Fiscal Capital Cost	
\$12,250,000	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2026

Project Title: Intersection Improvements Program

Project Type: Roads/Sidewalks

Project Cost: \$50,000

Department: Public Works - Highway

Contact Name: Jay Perkins

Project Ranking: _____ of _____

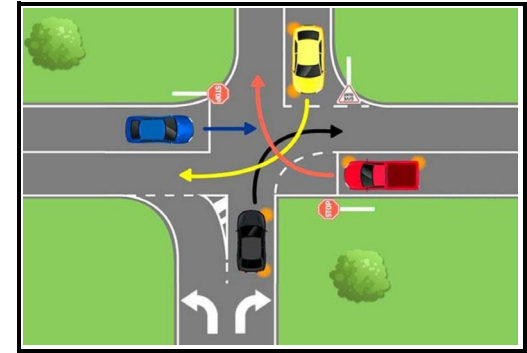
Useful Life (Years): 35

Master Plan (Y/N): Yes

Growth Related (Y/N): Yes

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

Phase I of the intersection study has been completed. The report can be found on the Town website. That study looked at four intersections evaluating traffic operations and safety concerns:

- Water Street at Front Street
- Front Street at Pine and Linden Streets (Roundabout in design. Construction anticipated in 2025).
- Water Street at High, Clifford, and Franklin Streets
- Winter Street at Railroad and Columbus Avenues (Improvements Constructed in May 2024).

A Phase II Intersection Study was funded in FY22 at \$50,000 to evaluate four more intersections. Phase II includes:

- Hampton Road and Guniea Road,
- Hampton Road and Holland Way,
- Hampton Road and Hampton Fall Road (Rt 88),
- Brentwood Road and Dogtown Road

Phase III is being proposed in FY26 and list to be determined.

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$50,000	\$0	\$0	\$0	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total: _____	
Estimated Project Cost:	\$50,000
Estimated Fiscal Capital Cost	
\$50,000	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

First Year Funding is Requested: 2025

Project Title: Linden Street Bridge over Exeter River Rehabilitation
Project Type: Bridge Rehabilitation
Project Cost: \$1,257,900

Project Ranking: _____ of _____
Useful Life (Years): 75
Master Plan (Y/N): No
Growth Related (Y/N): No
Service Related (Y/N): Yes
Externally Mandated (Y/N): Yes



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other _____

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

Rehabilitation of the Linden Street Bridge over Exeter River (Br. No. 081/046) includes rehabilitating the timber bridge abutments and wingwalls by encasing within a soil nail wall, approach pavement repairs, and replacement of substandard bridge rail.

The existing timber bridge was built in 1993; abutments and wingwalls are showing signs of settlement and bulging resulting in ongoing pavement settlement at the bridge approaches. Shear connectors between individual timber facing beams have failed. A soil nail wall encasement and partial reconstruction of abutments and wingwalls will stabilize the system to prevent further settlement. In addition, the existing bridge rail is substandard and should be replaced with an AASHTO-MASH crash-rated bridge rail.

The original estimated rehabilitation cost (including design, permitting, rehab and inspection) was developed in July 2022. In August 2022, NHDOT provided the Town of Exeter with \$310,000 for bridge work and 2023 Town Meeting voted to raise and appropriate an additional \$295,000 for the project through a special warrant article. In December 2024, construction bids received for the project were significantly higher than the existing appropriations. The project cost has been updated to \$1,567,900 to reflect 2025 estimated costs, based on the 2024 bids received, plus inflation. To date, the Town has spent \$67,800 of the \$295,000 on design. The authorization to spend the remaining balance of \$227,200 expires at the end of 2024 and will require reappropriation. The total balance needed to complete the project is 1,257,900.

Rehab Year	Estimated Cost	Balance Required
2025	\$1,567,900	\$1,257,900

Total Capital Cost by Fiscal Year						
FY25	FY26	FY27	FY28	FY29	FY30	
\$1,257,900	\$0	\$0	\$0	\$0	\$0	
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
\$0	\$0	\$0	\$0	\$0	\$0	

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	_____
Estimated Project Cost:	\$1,257,900
Estimated Fiscal Capital Cost	
\$1,257,900	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2025

Project Title: Pickpocket Dam
Project Type: Dam Modifications
Project Cost: \$2,100,000

Project Ranking: _____ of _____
Useful Life (Years): 50
Master Plan (Y/N): No
Growth Related (Y/N): No
Service Related (Y/N): Yes
Externally Mandated (Y/N): Yes



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

In March 2011, a Letter of Deficiency (LOD) was issued to the Town by the NHDES Dam Bureau. The LOD required a breach analysis to be performed and submitted to the Bureau. In January 2018, the Town submitted the breach analysis and a survey performed by its consultants. In March 2018, the Dam Bureau reclassified the dam from low-hazard to high-hazard because of the downstream impacts that would result if the dam failed. This high-hazard classification required additional planning and analysis. In FY19, \$40,000 was approved to update the Emergency Action Plan (EAP) and address breach analysis comments from NHDES. In FY20, \$110,000 was approved for additional analysis work; however, due to COVID-19 projected impacts on town revenues, the consultant contract was delayed. The eventual analysis determined that the dam could not meet NHDES dam discharge capacity requirements without significant modification.

In the Summer of 2021, a request for action extension was granted by NHDES to extend the time to develop rehabilitation alternatives. The revised dates for the application to address the dam's deficiencies and complete construction were pushed to June 1, 2024, and December 1, 2027, respectively. The Town was approved for a \$40,000 Coastal Resilience Grant and a \$100,000 Stormwater SRF grant, and an additional \$185,000 of Town ARPA funds were utilized to fully fund a feasibility study to evaluate options for modification and removal. Work on the Feasibility Study commenced in October 2022 and was completed in May 2024. Following a review of Feasibility Study and public comments, the Select Board voted at their June 24, 2024 meeting to recommend dam removal as the preferred alternative.

The FY25 request for \$2,100,000 will be used to 1) supplement any additional analysis required as a result of the feasibility study, 2) fund the design, permitting, construction, and construction oversight of the approved modifications, and 3) compensate the Town's consultants for exploring and applying for appropriate grants.

Estimated Costs:

Activity	Funding Amount
Dam Removal and Fish Passage Channel Engineering Design, Permitting, and Cultural Resources	250,000
Pickpocket Dam Removal Construction and Construction Phase Services	1,550,000
Adaptive Management	175,000
FEMA Letter of Map Revisions, Post-Construction Monitoring	125,000
	2,100,000

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$2,100,000	\$0	\$0	\$0	\$0	\$0

Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "

Salaries & Wages:
Employees Benefits:
Expenses:
Other:

Total: _____

Estimated Project Cost: \$2,100,000

Estimated Fiscal Capital Cost

\$2,100,000



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2028

Project Title: Portsmouth Ave. Reconstruction

Project Type: Roads/Sidewalks

Project Cost: \$5,285,000

Department: Public Works - Engineering

Contact Name: Paul Vlasich

Project Ranking: _____ of _____

Useful Life (Years): 25

Master Plan (Y/N): Yes

Growth Related (Y/N): Yes

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

The purpose of this project is to correct drainage, traffic flow, signal, roadway, stormwater, sidewalk, and streetscape deficiencies along Portsmouth Avenue. The project timing allows for the planning studies of bike lanes, complete streets, and downtown circulation to occur prior to developing improvement concepts.

The project extends from High Street to the vicinity of the previous Provident Bank. Phase I included sewer and watermain improvements and was approved for construction in 2013. Water and sewer improvements were finished in 2014 and the pavement overlaid in 2015. The drain lines are in a state of deterioration and will be corrected in Phase II. Traffic flow will be improved by adjusting lane configurations and coordinating traffic signals throughout the corridor.

Phase II costs were established by a consultant in 2012. The phases were originally proposed to be concurrent. However, through the 2013 CIP process it was decided to delay Phase II for later years. The 2012 estimates are as shown and the costs were adjusted 3% annually. \$75,000 is recommended in FY28 to allow project development discussions to restart with stakeholders and to fine tune the draft plans and budgets that were prepared to date.

Phase II	2012 Estimate	2029 Projected
Drainage Improvements	\$ 525,000.00	\$ 870,000
Traffic Signals	\$ 100,000.00	\$ 275,000
Road and Sidewalk	\$ 1,945,000.00	\$ 3,220,000
Legal and Bonds	\$ -	\$ 20,000
Construction Admin & Inspection	\$ 265,000.00	\$ 525,000 (12% of construction cost)
Total	\$ 2,835,000.00	\$ 4,910,000
 FY 29 - Design	 \$ 300,000.00	

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	_____
Estimated Project Cost:	\$5,285,000
Estimated Fiscal Capital Cost	
\$5,285,000	

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$0	\$0	\$75,000	\$300,000	\$4,910,000
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0



Town of Exeter, New Hampshire
2025 - 2030 CIP Project Request Form

Date Submitted: **6/20/2024**

First Year Funding is Requested: **NA**

Project Title: **Storm Drain Rehabilitation Program**

Project Type: Highway

Project Cost: \$0

Department: Public Works - Engineering

Contact Name: Paul Vlasich

Project Ranking: _____ of _____

Useful Life (Years): **50**

Master Plan (Y/N): **Yes**

Growth Related (Y/N): **No**

Service Related (Y/N): **Yes**

Externally Mandated (Y/N): **No**



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

A storm drainage system replacement or rehabilitation program was identified as a need based on the asset management plan that was developed in December 2020.

Based on 2020 costs, the estimated annual expenditure needed to adequately maintain or replace the storm drainage system is \$1,213,000 per year. Inflation or future costs will need to be applied to the 2020 calculated annual expenditure for up to date expenditures in that year.

The current Public Works Department 6-Year CIP proposes to pursue drainage rehabilitation in conjunction with full-depth roadway reconstruction and improvement projects that address all existing utilities and infrastructure. This write-up is a place holder if future project scheduling has a gap in drainage improvements.

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$0	\$0	\$0	\$0	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	\$0
Other:	
Total:	\$0
Estimated Project Cost:	\$0
Estimated Fiscal Capital Cost	
\$0	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/23/2024

First Year Funding is Requested: 2029

Project Title: Tan Lane Drainage Improvements

Project Type: Highway

Project Cost: TBD

Department: Public Works - Highway

Contact Name: Jay Perkins

Project Ranking: of

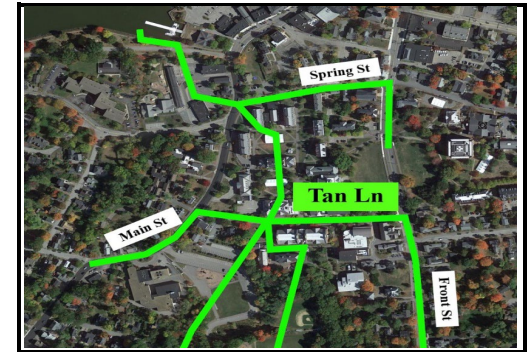
Useful Life (Years): 50

Master Plan (Y/N): No

Growth Related (Y/N): Yes

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

A previous 2006 Tan Lane Stormwater System Evaluation & Analysis Report identified several improvements which the Town has already implemented. This study will build upon that work to identifying opportunities to further reduce upstream stormwater flow contributions and evaluate the drainage system's ability to accommodate projected rainfall events.

Tan Lane has been subject to intermittent flooding for many years. The covers of drainage manholes have been bolted down to keep them from being pushed off the manholes during storm events. The drainage system downstream of Tan Lane discharges into the Squamscott River, a tidal estuary. Tidal influence can create backwater conditions in the drainage system during heavy rainfall events. The flooding at the low point in Tan Lane has reached a depth of 2-feet on occasion, impacting Phillips Exeter Academy buildings.

A 2022 Critical Flood Risk Infrastructure Grant (CFRING) application was submitted but the project was not selected. The Public Works Department intends to submit a Stormwater Clean Water SRF pre-application for this project.

The cost, adjusted for inflation, from the CFRING application for a basis of design study have been carried forward at \$135,000. Design and construction costs for a future date are TBD.

Total Capital Cost by Fiscal Year						
FY25	FY26	FY27	FY28	FY29	FY30	
\$0	\$0	\$0	\$135,000	TBD	\$0	
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
\$0	\$0	\$0	\$0	\$0	\$0	

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	TBD
Other:	
Total:	TBD
Estimated Project Cost:	TBD
Estimated Fiscal Capital Cost	
TBD	



Town of Exeter, New Hampshire
2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2027

Project Title: Washington Street Improvements
Project Type: Highway / Sewer
Project Cost: \$2,480,000

Project Ranking: _____ of _____
Useful Life (Years): 50
Master Plan (Y/N): No
Growth Related (Y/N): Yes
Service Related (Y/N): Yes
Externally Mandated (Y/N): No



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

The purpose of this project is to replace the poor condition sewer mains and upgrade the roadway and sidewalks. The sewer asset management program has the age listed as at least 60 years old. Cracking and root intrusion are present in the old clay sewer. The clay piping will be replaced with new PVC and new precast manholes will be constructed to help reduce Inflow/Infiltration. Additionally, the drain lines will be checked for adequate capacities. The street acts as a collector type street because it links Front St (Rt 111) and Brentwood Rd (Rt 111A). Since the Columbus Ave / Brentwood Rd / Epping Rd intersection was reconfigured, some residents of the street have complained about additional traffic and safety concerns. The street portion of this project will look at these issues including potential sidewalk improvements for the final road layout. The project will begin with design and neighborhood meetings in FY27 with construction to follow in FY28.

Estimate from consultant helping with a previous SRF pre-application:

FY27 Design	\$250,000		
SF	\$95,000		
GF	\$155,000		
FY28 Construction	\$2,055,000	FY28 - Const. Admin and Inspection	\$175,000
SF	\$783,500	SF	\$66,500
GF	\$1,271,500	GF	\$108,500

Total Capital Cost by Fiscal Year						
FY25	FY26	FY27	FY28	FY29	FY30	
\$0	\$0	\$250,000	\$2,230,000	\$0	\$0	
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
\$0	\$0	\$0	\$0	\$0	\$0	

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	_____
Estimated Project Cost:	\$2,480,000
Estimated Fiscal Capital Cost	
\$2,480,000	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2026

Project Title: Water Street Reconstruction

Project Type: Utility Reconstruction

Project Cost: \$6,905,000

Department: Public Works - Engineering

Contact Name: Paul Vlasich

Project Ranking: _____ of _____

Useful Life (Years): 50

Master Plan (Y/N): No

Growth Related (Y/N): No

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Project Description

The project limits are the northern end of Water Street from Main Street to Norris Brook. A watermain needs to be increased from a 6-inch main to 12-inch for approximately 2,400 LF. When hydrants are flowed on Newfields Road, pressure and water flow is lost in the neighborhood. The drain lines are undersized and in poor condition for approximately 2,300 LF. The sewer lines are in poor condition, except for those in the immediate location of the Housing Authority complex. It is anticipated that the 12-inch sewer mains will be replaced (600 LF) and that the larger mains can be re-lined (900 LF). The sidewalks will be replaced along with the roadway. There are several areas where groundwater and runoff enters the roadway, which will need to be mitigated.

A consultant provided the planning estimates in FY22. In FY24, the Town received an \$100,000 CWSRF Loan with 100% principal forgiveness for stormwater-related planning. Design is anticipated in FY26 and construction in FY27. Public Works intends to submit DWSRF and CWSRF Pre-applications for this project in FY26

FY24	Project Planning		\$	100,000
FY26	Engineering Design and Permitting			
	Road, Sidewalk, Stormwater Design	\$	300,000	
	Sewer Replacement Design	\$	150,000	
	Water Replacement Design	\$	150,000	
	<i>Subtotal</i>		\$	600,000
FY27	Roadway, Sidewalk, Stormwater construction	\$	2,890,000	
	Sewer Construction	\$	1,305,000	
	Water Construction	\$	1,510,000	
	<i>Subtotal</i>		\$	5,705,000
	Construction Inspection/Administration			
	Road, Sidewalk, Stormwater	\$	300,000	
	Sewer Replacement	\$	150,000	
	Water Replacement	\$	150,000	
	<i>Subtotal</i>		\$	600,000
	FY27 Total		\$	6,305,000
	FY 24, 26, & 27 Project Total		\$	7,005,000

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$600,000	\$6,305,000	\$0	\$0	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	\$6,905,000
Other:	
Total:	\$6,905,000
Estimated Project Cost:	\$6,905,000
Estimated Fiscal Capital Cost	
	\$6,905,000



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2028

Project Title: Waterfront Seawall & Boardwalk

Project Type: Special Projects

Project Cost: TBD

Department: Public Works - Maintenance

Contact Name: Jeff Beck

Project Ranking: _____ of _____

Useful Life (Years): 50

Master Plan (Y/N): No

Growth Related (Y/N): No

Service Related (Y/N): No

Externally Mandated (Y/N): No



Project Description

The construction of a granite seawall, with sidewalk, to form a full length walkway along the Squamscott River from Stewart Park to the end of the wooden "Riverwalk". The new seawall will provide the ability to expand waterfront access for recreation. Similar seawall construction at Stewart Park consists of dry laid granite blocks with brick walkway, and landscaping in keeping with the original waterfront construction as seen at String Bridge, and along the roadway behind the Water Street stores. The new granite seawall will replace the wooden walkway known as the "Riverwalk". The 1990's era wooden walkway is in deteriorated condition with worn uneven deck planks and checked and cupped railings. The wood walkway construction is approaching the end of useful lifespan of 25 years and will eventually need a full replacement if current use is to continue. The cost of replacement of the wooden walkway is yet to be determined and will include disposal, permitting, design submittals, and construction. The lifespan will remain at 25 years for a new replacement wood structure. Due to the short lifespan it is recommended that the investment in a granite seawall, with an indefinite lifespan, and full riverfront access will bring opportunities that do not exist with the wooden structure. A granite wall with either brick or concrete sidewalk with costs yet to be determined. The distance from Stewart Park to the String Bridge (southeasterly) end of the wooden walkway is 500 feet. Additional costs will include wetlands survey, engineering, and permitting.

Recent inspections have determined the wooden walkway planks and handrails can be spot repaired to extend the useful life of the structure for several years. The wooden structure will be evaluated annually to determine if spot repair or replacement is recommended.

To be determined in the next couple of years, the wooden boardwalk will be upgraded with plank or rail replacements as necessary. Complete replacement is scheduled for FY28 when the rip-rap shoreline may be replaced with granite or similar blocks.

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year						
FY25	FY26	FY27	FY28	FY29	FY30	
\$0	\$0	\$0	\$0	TBD	\$0	
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
\$0	\$0	\$0	\$0	\$0	\$0	

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	TBD
Other:	
Total:	TBD
Estimated Project Cost:	TBD
Estimated Fiscal Capital Cost	
TBD	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2025

Project Title: **Clemson Pond**

Project Type: Utilities: Sewer

Project Cost: \$500,000

Department: Public Works - Sewer

Contact Name: Steve Dalton

Project Ranking: _____ of _____

Useful Life (Years): 10

Master Plan (Y/N): No

Growth Related (Y/N): No

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

This project consists of the removal of vegetation and sediment at the discharge point of the two 36-inch Combined Sewer Overflow (CSO) barrels in Clemson Pond. Once the vegetation is removed, the two CSO barrels will be cleaned and inspected to assess their condition and determine the remaining useful life of the pipes. The two tide gates that discharge water from Clemson Pond to the Squamscott River will be also inspected. Alternatives and preliminary cost estimates for repair and rehabilitation of the CSO barrels and tide gates will be developed.

CSO discharges into Clemson Pond during heavy rain events have resulted in a large, vegetated mass that has formed in front of the two 36-inch CSO barrels, which has reduced discharge capacity. The CSO siphon barrels are of the same vintage as the two 8-inch siphon barrels that were identified as failing and recently replaced. Effective tide gate operation has been impacted by dislodged spillway timber and gasket material that has also reached the end of its useful life.

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$500,000	\$0	TBD	\$0	\$0	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	_____
Estimated Project Cost:	\$500,000
Estimated Fiscal Capital Cost	
\$500,000	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2027

Project Title: Court Street Pump Station

Project Type: Utilities: Sewer

Project Cost: \$500,000

Department: Public Works - Sewer

Contact Name: Steve Dalton

Project Ranking: _____ of _____

Useful Life (Years): 50

Master Plan (Y/N): No

Growth Related (Y/N): Yes

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

The Court Street pump station pumps sewage from the Linden and Court Street areas to the higher elevation gravity sewers located on High Street and the Pine Street and Court Street intersection. The station discharges through an older 6-inch, 870 linear foot force main (FM) to Pine Street and a newer 10-inch, 5,000 linear foot FM to the High Street and Gilman Lane manhole. This project proposes to replace this existing 6-inch force main with a larger diameter pipe. Both in-place pipe bursting and horizontal directional drilling are being considered for installation.

During the April 2017 High Street sewer collapse, the 6-inch FM was used as the primary main, instead of the regularly used 10-inch FM. This helped to reduce the potential for a sanitary sewer overflow (SSO) at Gilman Lane and divert the sewage volume pumped to the damaged High Street gravity sewer. However, the 6-inch pipe proved to be restrictive, nearly resulting in an SSO event. This project would increase the FM size to Pine Street to provide adequate capacity and redundancy to prevent this condition from occurring in the future. New pumps were installed at the pump station in 2024. The Exeter River Co-op also recently received a \$2,000,000 grant to make necessary improvements to their private sewer infrastructure that will likely affect the incoming flows to Court Street Pump Station.

Costs:

2027- \$500,000 for design of forcemains, building upgrades, electrical upgrades, and other necessary appurtances.

2028- Funds TBD for construction.

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$0	\$500,000	TBD	\$0	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total: _____	
Estimated Project Cost: \$500,000	
Estimated Fiscal Capital Cost	
\$500,000	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Project Title: High Street/Cross-Country Sewer Rehabilitation
Project Type: Utilities: Sewer
Project Cost: \$3,420,000

Department: Public Works - Sewer
Contact Name: Steve Dalton

Date Submitted: 6/20/2024

Year Funding is Requested: 2026
Project Ranking: _____ of _____
Useful Life (Years): 50
Master Plan (Y/N): No
Growth Related (Y/N): Yes
Service Related (Y/N): Yes
Externally Mandated (Y/N): Yes



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

In 2020, verification of the capacities within sewer mains was completed as part of a study to determine hydraulic deficiencies in the Town's sewer interceptors and evaluate the potential impacts of future growth to the sewer system. The study identified capacity issues on High Street and with the Cross Country sewer main that runs from Gilman Lane to Drinkwater Road. This project includes the replacement of approximately 550 linear feet of sewer main on High Street, replacement of approximately 2,100 linear feet of sewer main on Gilman Lane and select Cross-Country areas, and relining approximately 2,500 linear feet of the cross country sewer pipe between Folsom Lane and Drinkwater Road.

The Town needs to make sure there is proper capacity and structural integrity to prevent sewer main collapse and surcharging. Expansion requests from commercial properties on the East Side of Exeter have been received. The capacity and condition of infrastructure in this area requires improvement before expansion requests can be considered.

Costs:

Design Engineering -	\$380,000 (Approved and underway in 2023)
Construction Engineering -	\$410,000
Construction -	\$2,450,000
Contingency -	\$560,000
Total -	\$3,420,000

A 2024 CWSRF pre-application and a State Water Pollution Control Grant pre-application have been submitted for this project.

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$3,420,000	\$0	\$0	\$0	\$0

Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	<hr/>
Estimated Project Cost:	\$3,420,000
Estimated Fiscal Capital Cost	
\$3,420,000	



Town of Exeter, New Hampshire

2050 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2026

Project Title: Sewer Main Rehabilitation Program

Project Type: Utilities: Sewer

Project Cost: \$0

Department: Public Works - Engineering

Contact Name: Paul Vlasich

Project Ranking: _____ of _____

Useful Life (Years): 50

Master Plan (Y/N): Yes

Growth Related (Y/N): No

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Project Description

A sewer line replacement or rehabilitation program was established in FY10. A sanitary sewer asset management plan was developed in December 2020.

Based on 2020 costs, the average annual expenditure needed to adequately maintain or replace sewer mains is \$1,284,000 per year. Inflation or future costs will need to be applied to the 2020 calculated annual expenditure for up to date expenditures in that year.

The current Public Works Department 6-Year CIP proposes to pursue sewer rehabilitation in conjunction with full-depth roadway reconstruction and improvement projects that address all existing utilities and infrastructure. This write-up is a place holder if future project scheduling has a gap in sewer system improvements.

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$0	\$0	\$0	\$0	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	\$0
Other:	
Total:	\$0
Estimated Project Cost:	\$0
Estimated Fiscal Capital Cost	
\$0	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2025

Project Title: WWTF Effluent Flume

Project Type: Utilities: Sewer

Project Cost: \$245,000

Department: Public Works - Sewer

Contact Name: Steve Dalton

Project Ranking: _____ of _____

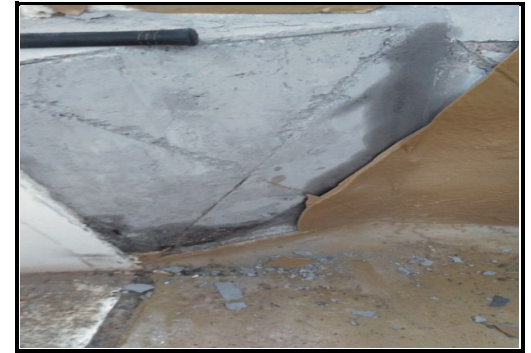
Useful Life (Years): 50

Master Plan (Y/N): No

Growth Related (Y/N): No

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Project Description

The effluent flume and disinfection structure are original structures from the old wastewater treatment facility that were rehabilitated when the new wastewater treatment facility was constructed. The concrete was etched by Williamson Pump in 2020 in an attempt to apply SprayRoq coating; however, the coating did not adhere and the concrete has been left with deep etch marks that provide ideal conditions for bacteria growth. This project would remove the etching, repair the concrete, and apply a coating that will adhere.

The disinfection structure is where the permit required bacteria samples are taken and should be as clean and smooth as possible in order to help stay in compliance with state regulations and federal permit requirements.

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$245,000	\$0	\$0	\$0	\$0	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total: _____	
Estimated Project Cost:	\$245,000
Estimated Fiscal Capital Cost	
\$245,000	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

Year Funding is Requested: 2027

Project Title: WWTF Upgrades Phase I

Project Type: Utilities: Sewer

Project Cost: \$2,750,000

Department: Public Works - Wastewater

Contact Name: Steve Dalton

Project Ranking: _____ of _____

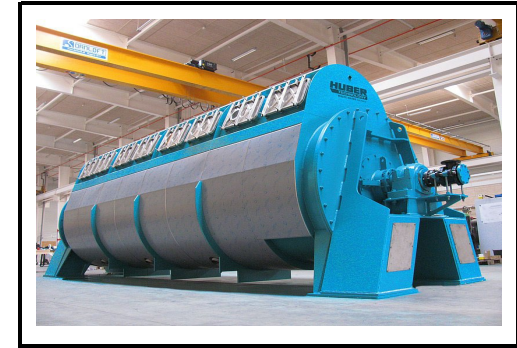
Useful Life (Years): 50

Master Plan (Y/N): No

Growth Related (Y/N): Yes

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Project Description

This project would include the installation of a new biosolids drying unit at the wastewater treatment facility to reduce the amount of water within the biosolids by-product that is generated by the treatment process. The Town disposes of its biosolids by trucking them to an approved landfill or biosolids re-use processing facility. Currently, these biosolids are comprised of approximately 20-25% solids and 75%-80% water.

Drying the biosolids could increase solids content up to 80% (20% water) and significantly reducing disposal costs. Based on 2022 disposal tonnages and fees, it is estimated that the Town could reduce disposal costs by \$150,000 to \$180,000 per year. Pending PFAS regulations and limited landfill space are anticipated to impact the re-use and disposal of biosolids in future years.

Costs:

Design -	\$200,000
Engineering Services -	\$100,000
Construction -	\$2,000,000
Contingency -	\$450,000
Total -	\$2,750,000

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year						
FY24	FY25	FY26	FY27	FY28	FY29	
\$0	\$0	\$0	\$200,000	\$2,550,000	\$0	
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
\$0	\$0	\$0	\$0	\$0	\$0	

" Annual Operating Impact "	
FY 2025 - 2030	
Salaries & Wages:	TBD
Employees Benefits:	TBD
Expenses:	TBD
Other:	
Total:	\$0
Estimated Project Cost: \$2,750,000	
Estimated Fiscal Capital Cost	
\$2,750,000	



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

Year Funding is Requested: 2025

Project Title: Groundwater Source Development
Project Type: Utilities: Water
Project Cost: \$6,800,000

Project Ranking: _____ of _____
Useful Life (Years): 50
Master Plan (Y/N): No
Growth Related (Y/N): Yes
Service Related (Y/N): Yes
Externally Mandated (Y/N): No

Department: Public Works - Water
Contact Name: Steve Dalton



Project Description

Additional groundwater sources are necessary to supplement the three existing groundwater sources (Stadium, Gilman, and Lary Lane Wells) and the surface water sources (Exeter River, Exeter Reservoir, and Skinner Springs) in accordance with the Town's Integrated Management Plan for water supply and to meet projected demands. The existing groundwater sources were developed in the 1950's and 1960's and are treated for iron, manganese, and arsenic removal at the Lary Lane Groundwater Treatment Plant (GWTP), which was constructed in 2015 and has a capacity of 1.6 million gallons per day (MGD). Testing of the three wells has determined their combined total capacity to be 1 MGD, which is significantly less than originally projected. In 2020-2021, hydrogeologists and engineers working for the Town identified 3 potential groundwater development zones where geophysical testing was conducted to identify the most favorable option to pursue. A site on PEA property, off Drinkwater Road, has been selected for further testing and development of a new source projected to supply an additional 0.5-0.7 MGD. Pending approval of the source from NHDES, a new production well, water main, and pump station will be designed and constructed. The new well will be also be connected to the GWTP for treatment. This new source will increase the Town's available groundwater capacity, allow for the seasonal rotation and routine redevelopment of the existing wells, and reduce the volume of water treated at the Surface Water Treatment Plant, which has a higher per-gallon treatment cost. This project will also include the rehabilitation of the Lary Lane Well after the new source has been placed online.

Project schedule:

2021 – Additional test well work and preliminary pump testing, preliminary hydrogeological report and test well drilling (**Completed**).
 2022 – 2024 Safe yield, water quality testing, extended pump testing, environmental assessments, submission of final hydrogeological report, new source permitting (**Completion Expected December 2024**).
 2025-2026 – Land acquisition and design of all required infrastructure, construction of access road, electrical, pump station, water main connections, and rehabilitation of Lary Lane Well.

Project Costs:

Well development, testing, env. assessments, permitting & installation - \$1,000,000 **approved in March 2021**
 Continue efforts to develop groundwater sources- \$500,000 **approved in March 2023**

Construction of New Well & Rehabilitation of Lary Lane Well -	\$4,500,000
Hydrogeological Allowance -	\$50,000
Contingency -	\$950,000
Engineering -	\$1,000,000
Easements & Land Acquisition -	\$300,000
Total -	\$6,800,000

Total Capital Cost by Fiscal Year

FY25	FY26	FY27	FY28	FY29	FY30
\$6,800,000	\$0	\$0	\$0	\$0	\$0

Operating Budget Impact by Fiscal Year

Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

" Annual Operating Impact "

Salaries & Wages:	\$0
Employees Benefits:	\$0
Expenses:	TBD
Other:	TBD

Total: TBD

Estimated Project Cost: \$6,800,000

Estimated Fiscal Capital Cost

\$6,800,000



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

First Year Funding is Requested: 2026

Project Title: Watermain Rehabilitation Program

Project Type: Utilities: Water

Project Cost: \$0

Department: Public Works - Engineering

Contact Name: Paul Vlasich

Project Ranking: _____ of _____

Useful Life (Years): 50

Master Plan (Y/N): Yes

Growth Related (Y/N): No

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Project Description

A watermain replacement or rehabilitation program was first established in FY10. In May 2015, a Public Water System Asset Management Plan was prepared with the help of a NHDES grant. The following is an excerpt from Section 6.1 Recommendations and Conclusions section (page 44) of that report.

"Replacement of 1% of a system each year (a 100-YR replacement cycle) is a reasonable guideline, based on industry experience and analysis, for water systems that have historically maintained a regular replacement schedule. Although the Town has recently adopted a regular water main replacement program, a large backlog of work remains due to a historical lapse in regular replacement. In this case it is not unreasonable to expect replacement of up to 2% of the system per year. This would equate to approximately 6,900 linear feet of water main replacement each year as a guideline. Regular rehabilitation of water mains reduces main failures, leakage, and water quality issues."

2% annual = 6,900LF x \$335/LF (avg) = \$2,312,000

1.5% annual = \$1,734,000

1% annual = \$1,156,000

Please note that these suggested expenditures have not been adjusted for construction inflation since the 2015 guidelines. Any future year funding scenario will need to adjust the 2015 guideline costs by inflation to that future year's cost.

The department suggests less than a 2% annual replacement program because of the large costs involved. The CIP is populated with the 1.5% annual replacement program using the financial figures established in 2015. The current Public Works Department 6-Year CIP proposes to pursue watermain rehabilitation in conjunction with full-depth roadway reconstruction and improvement projects that address all existing utilities and infrastructure. This write-up is a place holder if future project scheduling has a gap in water system improvements.

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$0	\$0	\$0	\$0	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	\$0
Other:	
Total:	\$0
Estimated Project Cost:	\$0
Estimated Fiscal Capital Cost	
	\$0

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Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/224

First Year Funding is Requested: **2030**

Project Title: Ambulance 1 Replacement
Project Type: Vehicles & Heavy Equipment
Project Cost: \$372,000

Useful Life (Years): 6
Master Plan (Y/N): No
Growth Related (Y/N): No
Service Related (Y/N): Yes
Externally Mandated (Y/N): No

Department: Fire
Contact Name: Chief Justin Pizon



Project Description

1. General Project Description? Replace 2024 Ambulance with new.

2. Rationale? This vehicle is in service today. With the ever increasing EMS call volume, over 2,200 calls per year, it is very important to keep on a regular vehicle replacement schedule. This is necessary to have reliable ambulance service for the residents and visitors of Exeter. This vehicle is a primary response vehicle. **This vehicle currently receives a Mercury Fleet Study score of 26, which indicates "Qualifies for Replacement" with x engine hours and equivalent road mileage of x.**

3. Operating Budget Impact? This vehicle will be funded from the Ambulance Revolving Fund. The BOS needs to approve the use of funds from this account, and if approved the purchase of this vehicle would have no impact on the tax rate. It would be paid for by the users of the ambulance. A new vehicle would likely reduce the expenses from the Ambulance Revolving Fund as new vehicle warranties and reduced maintenance costs would be realized. Improvements in vehicle engines and emissions have reduced fuel consumption and lessened the carbon output as compared with existing older vehicles. ******This is a place holder only, the vehicle which is being replaced here is not delivered to the fire department as of 6/27/2024******

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Ambulance Revolving Fund
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
					\$372,000

Operating Budget Impact by Fiscal Year	
Total Operating Expense (estimated) by Fiscal Year	
	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	_____
Total:	_____
Estimated Project Cost:	_____
Estimated Fiscal Capital Cost	
\$372,000	

no points provided



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/224

First Year Funding is Requested: **2025**

Project Title: Ambulance 2 Replacement
Project Type: Vehicles & Heavy Equipment
Project Cost: \$312,341

Department: Fire
Contact Name: Chief Justin Pizon

Useful Life (Years): 6
Master Plan (Y/N): No
Growth Related (Y/N): No
Service Related (Y/N): Yes
Externally Mandated (Y/N): No



Project Description

1. General Project Description? Replace 2019 Ambulance with a new unit.

2. Rationale? This vehicle is in service today. With the ever increasing EMS call volume, over 2,200 calls per year, it is very important to keep on a regular vehicle replacement schedule. This is necessary to have reliable ambulance service for the residents and visitors of Exeter. This vehicle is a primary response vehicle. This vehicle currently receives a Mercury Fleet Study score of 26, which indicates "Qualifies for Replacement" with 4,695 engine hours and equivalent road mileage of 154,935.

3. Operating Budget Impact? This vehicle will be funded from the Ambulance Revolving Fund. The BOS needs to approve the use of funds from this account, and if approved the purchase of this vehicle would have no impact on the tax rate. It would be paid for by the users of the ambulance. A new vehicle would likely reduce the expenses from the Ambulance Revolving Fund as new vehicle warranties and reduced maintenance costs would be realized. Improvements in vehicle engines and emissions have reduced fuel consumption and lessened the carbon output as compared with existing older vehicles. The current lead time for new ambulances is approximately 2 years.

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Ambulance Revolving Fund
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$312,341					

Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0					

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	_____
Total:	_____
Estimated Project Cost:	_____
Estimated Fiscal Capital Cost	
\$312,341	

Town of Exeter Vehicle Replacement Guidelines

Department: Vehicle Name or Number: Vehicle Registration: VIN #	Fire						Date:	6/21/2024
	Ambulance 2						Fuel Type:	Unleaded
	G10485							
	1FDXE4FSXKDC41426							
Vehicle Category	Recommended Replacement Years/Miles	Age	Miles/Hours Nearest 10,000	Type of Service	Reliability	Maintenance & Repairs Costs	Condition Interior/Exterior	Total Points
Medium Trucks 1-Tons & Ambulances	6 or 100,000	5	12	3	2	1	3	26
Age: 1 point for each year of chronological age, based on in-service date		2019						
Miles/Hours: 1 point for each 10,000 miles or 750 hours			50,313					
EVT conversion from engine hours to miles is 33 mph		3,615	119,295					
Type of Service: 1, 3, or 5 points are assigned based on type of service								
1 point for Department Heads & Commuter use								
3 points for medium duty, ambulances, parks & rec, service vehicles								
5 points for rough duty, plows, fire engines, etc...								
Reliability: Points are assigned depending on the frequency that a vehicle is in the shop for repair								
1 point for a vehicle in the shop once every 3 months for Preventive Maint								
2 points for a vehicle in the shop once every 2 or 3 months								
3 points for a vehicle in the shop each month for repairs								
4 points for a vehicle in the shop twice a month for repairs								
5 points for a vehicle in the shop 3 or more times a month								
Maintenance & Repair Costs: Points are assigned based on total life Maintenance & Repair costs								
1 point for maintenance & repair costs less than 20% of original purchase cost								
2 points for maintenance & repair costs totalling 20-40% of original purchase cost								
3 points for maintenance & repair costs totalling 40-60% of original purchase cost								
4 points for maintenance & repair costs totalling 60-80% of original purchase cost								
5 points for maintenance & repair costs totalling 80-100% of original purchase cost								
Condition: This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc...								
1 point for like new condition								
2 points for excellent condition								
3 points for good condition								
4 points for fair/average condition								
5 points for poor condition (Not Inspectable)								





Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

First Year Funding is Requested: **2024**

Project Title: Car 1 Replacement
Project Type: Vehicles & Heavy Equipment
Project Cost: \$65,959

Useful Life (Years): 10
Master Plan (Y/N): No
Growth Related (Y/N): No
Service Related (Y/N): Yes
Externally Mandated (Y/N): No

Department: Fire
Contact Name: Chief Justin Pizon



Project Description

1. General Project Description? Replace a 2014 Ford Explorer with a new Hybrid Ford Explorer. We have had a good experience with the hybrid currently in our fleet. There has been an obvious reduction in fuel costs associated with the hybrid explorer which benefits the tax payers, through reduced fuel usage, as well as the environment, in emission reductions. The new vehicle will be large enough to fit 4 personnel with all associated protective equipment & turnout gear and will be assigned to the Assistant Fire Chief.

2. Rationale? The 10 year old vehicle will is become more difficult to predict service & maintenance needs. **This vehicle currently receives a Mercury Fleet Study score of 28, which indicates "Qualifies for Replacement" with 2,886 engine hours and equivalent road mileage of 95,238.** With any older vehicle unexpected costs in addition to routine maintenance always has the potential to be higher than budgeted in the operating portion of the budget.

3. Operating Budget Impact? A new hybrid vehicle will reduce operating costs, fuel consumption and provide for a more sustainable future for the Town of Exeter. Vehicle, Hybrid Ford Explorer - \$51,500; Radio - \$7,146, Lights/Siren \$7,313.

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$65,959					
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0					

" Annual Operating Impact "

Salaries & Wages:
 Employees Benefits:
 Expenses:
 Other: _____
 Total: _____
 Estimated Project Cost: _____

Estimated Fiscal Capital Cost

\$65,959

Town of Exeter Vehicle Replacement Guidelines

Department: Vehicle Name or Number: Vehicle Registration: VIN #	Fire						Date:	6/21/2024
	Car 1						Fuel Type:	Unleaded
	G18218							
	1FM5K8ARXEGA09326							
Vehicle Category	Recommended Replacement Years/Miles	Age	Miles/Hours Nearest 10,000	Type of Service	Reliability	Maintenance & Repairs Costs	Condition Interior/Exterior	Total Points
Passenger Vehicles & Light Trucks, 4x2 & 4x4 Police Sedans, SUV's	10 or 100,000	10	10	1	2	2	3	28
Age: 1 point for each year of chronological age, based on in-service date		2014						
Miles/Hours: 1 point for each 10,000 miles or 750 hours EVT conversion from engine hours to miles is 33 mph		2,886	67,765 95,238					
Type of Service: 1, 3, or 5 points are assigned based on type of service 1 point for Department Heads & Commuter use 3 points for medium duty, ambulances, parks & rec, service vehicles 5 points for rough duty, plows, fire engines, etc...								
Reliability: Points are assigned depending on the frequency that a vehicle is in the shop for repair 1 point for a vehicle in the shop once every 3 months for Preventive Maint 2 points for a vehicle in the shop once every 2 or 3 months 3 points for a vehicle in the shop each month for repairs 4 points for a vehicle in the shop twice a month for repairs 5 points for a vehicle in the shop 3 or more times a month								
Maintenance & Repair Costs: Points are assigned based on total life Maintenance & Repair costs 1 point for maintenance & repair costs less than 20% of original purchase cost 2 points for maintenance & repair costs totalling 20-40% of original purchase cost 3 points for maintenance & repair costs totalling 40-60% of original purchase cost 4 points for maintenance & repair costs totalling 60-80% of original purchase cost 5 points for maintenance & repair costs totalling 80-100% or greater of original purchase cost								
Condition: This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc...								
1 point for like new condition								
2 points for excellent condition								
3 points for good condition								
4 points for fair/average condition								
5 points for poor condition (Not Inspectable)								





Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

First Year Funding is Requested: **2028**

Project Title: Car 4 Replacement
Project Type: Vehicles & Heavy Equipment
Project Cost: \$69,500

Useful Life (Years): 10
Master Plan (Y/N): No
Growth Related (Y/N): No
Service Related (Y/N): Yes
Externally Mandated (Y/N): No

Department: Fire
Contact Name: Chief Justin Pizon



Project Description

1. General Project Description? Replace a 2018 Ford F250 Pickup, with a new F250 pick-up. The current vehicle currently serves as the command post at emergency incidents and is used to move personnel to emergencies, practical training exercises and classes. The new vehicle will be large enough to fit 4 personnel with all associated protective equipment & turnout gear, and serve as a command post at emergency scenes.

2. Rationale? With increased awareness of cancer and the known carcinogens associated with fire and our turnout gear, the enclosed bed of a pickup truck helps reduce the likely contamination of the interior of an SUV style vehicle. A pickup truck style vehicle is far more versatile and could be used for many different assignments while still being available for use as a command vehicle at emergency incidents.

3. Operating Budget Impact? The 10 year old vehicle will become more difficult to predict service & maintenance needs. The vehicle currently receives a **This vehicle currently receives a Mercury Fleet Study score of 16, which indicates "Excellent Condition" with 1,441 engine hours and equivalent road mileage of 47,553.** With any older vehicle unexpected costs in addition to routine maintenance always has the potential to be higher than budgeted in the operating portion of the budget. A new vehicle has the potential of reducing the operating budget while the new vehicle warranty is in effect and reduced maintenance costs with a new vehicle should be realized.

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year					
FY24	FY25	FY26	FY27	FY28	FY29
				\$69,500	
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0					

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	_____
Total:	_____
Estimated Project Cost:	_____
Estimated Fiscal Capital Cost	
\$69,500	

Town of Exeter Vehicle Replacement Guidelines

Department: Vehicle Name or Number: Vehicle Registration: VIN #	Fire						Date:	6/21/2024
	Car 4						Fuel Type:	Unleaded
	G20056							
	1FT7X2B64KEC69650							
Vehicle Category	Recommended Replacement Years/Miles	Age	Miles/Hours Nearest 10,000	Type of Service	Reliability	Maintenance & Repairs Costs	Condition Interior/Exterior	Total Points
Passenger Vehicles & Light Trucks, 4x2 & 4x4 Police Sedans, SUV's	10 or 100,000	6	3	3	1	1	2	16
Age: 1 point for each year of chronological age, based on in-service date		2018						
Miles/Hours: 1 point for each 10,000 miles or 750 hours			20,453					
EVT conversion from engine hours to miles is 33 mph		1030	33,990					
Type of Service: 1, 3, or 5 points are assigned based on type of service								
1 point for Department Heads & Commuter use								
3 points for medium duty, ambulances, parks & rec, service vehicles								
5 points for rough duty, plows, fire engines, etc...								
Reliability: Points are assigned depending on the frequency that a vehicle is in the shop for repair								
1 point for a vehicle in the shop once every 3 months for Preventive Maint								
2 points for a vehicle in the shop once every 2 or 3 months								
3 points for a vehicle in the shop each month for repairs								
4 points for a vehicle in the shop twice a month for repairs								
5 points for a vehicle in the shop 3 or more times a month								
Maintenance & Repair Costs: Points are assigned based on total life Maintenance & Repair costs								
1 point for maintenance & repair costs less than 20% of original purchase cost								
2 points for maintenance & repair costs totalling 20-40% of original purchase cost								
3 points for maintenance & repair costs totalling 40-60% of original purchase cost								
4 points for maintenance & repair costs totalling 60-80% of original purchase cost								
5 points for maintenance & repair costs totalling 80-100% of original purchase cost								
Condition: This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc...								
1 point for like new condition								
2 points for excellent condition								
3 points for good condition								
4 points for fair/average condition								
5 points for poor condition (Not Inspectable)								





Town of Exeter, New Hampshire

2024 - 2029 CIP Project Request Form

Date Submitted: 6/16/2023

First Year Funding is Requested: **2026**

Project Title: Crime Scene Van Ford E-Transit Cargo

Project Type: Public Safety

Project Cost: \$60,000

Department: Police

Contact Name: Chief Stephan Poulin

Useful Life (Years): 10 years
Master Plan (Y/N): No
Growth Related (Y/N): Yes
Service Related (Y/N): Yes
Externally Mandated (Y/N): No



Project Description

The prior Crime Scene Unit was beyond its life expectancy as it also was previously an Exeter Ambulance. It suffered from rust/rot and mechanical issues and was traded to McFarland Ford several years ago. Currently, we are utilizing cramped storage areas in the sally port and in remote locations for our crime scene materials. This is not adequate for detectives to be fully prepared in responding to crime scenes and to have all of their processing needs quickly deployed. Crime scene processing materials include large items such as canopies and other physical barriers in addition to the evidence collection materials. The Exeter Police needs a replacement van that will be more practical for housing and storing our crime scene materials and equipment. The estimated \$60,000 for a Ford E350 Transit Cargo van will include outfitting.

Check all that apply

2024 - 2029 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$60,000	\$0	\$0	\$0	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
			\$0	\$0	\$0

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	_____
Estimated Project Cost:	_____
Estimated Fiscal Capital Cost	
\$0	

no points provided



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

First Year Funding is Requested: 2030

Project Title: Engine 2 Replacement
Project Type: Vehicles & Heavy Equipment
Project Cost: \$995,000

Department: Fire
Contact Name: Chief Justin Pizon

Useful Life (Years): 15/20
Master Plan (Y/N): No
Growth Related (Y/N): No
Service Related (Y/N): Yes
Externally Mandated (Y/N): No



Project Description

1. General Project Description? Replace the 2010 E-One (Engine 2) with a new 1500 GPM engine.

2. Rationale? This vehicle was placed in service in 2010. The cost of the engine in 2010 was \$565,418. **This vehicle currently receives a Mercury Fleet Study score of 42, which indicates "Needs Immediate Consideration" with 5,227 engine hours and equivalent road mileage of 172,491. Currently this vehicle has significant engine issues which are being assessed by the appropriate service providers.** The recent CPSM study recommends the EFD consider, budget permitting, a change to a 15-year replacement schedule for engine apparatus, with an additional 5 years of service in "reserve". Apparatus over 15 years of age often include only a few of the safety upgrades required by the most recent editions of NFPA 1901 (NFPA 1901 is generally updated every five years).

3. Operating Budget Impact? A new vehicle would likely reduce the operating budget as new vehicle warranties and reduced maintenance costs would be realized. Improvements in vehicle engines and emissions have reduced fuel consumption as compared with existing older vehicles. We would recommend a 5 year lease/purchase as with previous engines to keep a level debt service, and follow the CPSM recommended 15 years replacement schedule with an additional 5 years of service in "Reserve Status" for engine/pumpers.

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

FY25	FY26	FY27	FY28	FY29	FY30
					\$995,000

Operating Budget Impact by Fiscal Year

Total Operating Expense (estimated) by Fiscal Year
 \$0

" Annual Operating Impact "

Salaries & Wages:
 Employees Benefits:
 Expenses:
 Other: _____

Total: _____

Estimated Project Cost: _____

Estimated Fiscal Capital Cost

\$995,000

no points provided



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

First Year Funding is Requested: **2027**



Project Title: Engine 3 Replacement
Project Type: Vehicles & Heavy Equipment
Project Cost: \$800,800

Useful Life (Years): 15/20
Master Plan (Y/N): No
Growth Related (Y/N): No
Service Related (Y/N): Yes
Externally Mandated (Y/N): No

Department: Fire
Contact Name: Chief Justin Pizon

Project Description

1. General Project Description? Replace the 2007 Crimson Pumper (Engine 3) with a new 1500 GPM engine.

2. Rationale? This vehicle was placed in service in April, 2007. The cost of the engine in 2007 was \$420,189. Nearly \$100,000 has been spent on the engine since 2007. **This vehicle currently receives a Mercury Fleet Study score of 42, which indicates "Needs Immediate Consideration" with 3,494 engine hours and equivalent road mileage of 115,302.** This vehicle is in service today. The vehicle has already had corrosion repairs and re-paint in 2015, and is starting to show more signs of electrical system and HVAC. The recent CPSM study recommends the EFD consider, budget permitting, a change to a 15-year replacement schedule for engine apparatus, with an additional 5 years of service in "reserve". Apparatus over 15 years of age often include only a few of the safety upgrades required by the most recent editions of NFPA 1901 (NFPA 1901 is generally updated every five years).

3. Operating Budget Impact? A new vehicle would likely reduce the operating budget as new vehicle warranties and reduced maintenance costs would be realized. Improvements in vehicle engines and emissions have reduced fuel consumption as compared with existing older vehicles. We would recommend a 5 year lease/purchase as with previous engines to keep a level debt service, and follow the CPSM recommended 15 years replacement schedule with an additional 5 years of service in "Reserve Status" for engine/pumpers.

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$800,800					

Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0					

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	_____
Total:	_____
Estimated Project Cost:	_____
Estimated Fiscal Capital Cost	
\$800,800	

Town of Exeter Vehicle Replacement Guidelines

Department:	Fire						Date:	6/21/2024
Vehicle Name or Number:	Engine 3						Fuel Type:	Diesel
Vehicle Registration:	G10417							
VIN #	4S7BU2D907C056982							
Vehicle Category	Recommended Replacement Years/Miles	Age	Miles/Hours Nearest 10,000	Type of Service	Reliability	Maintenance & Repairs Costs	Condition Interior/Exterior	Total Points
Heavy Trucks Plow Trucks, Fire Engines other large vehicles	20 or 250,000	17	11	5	3	2	4	42
Age: 1 point for each year of chronological age, based on in-service date		2007						
Miles/Hours: 1 point for each 10,000 miles or 750 hours			41,500					
EVT conversion from engine hours to miles is 33 mph		3,494	115,302					
Type of Service: 1, 3, or 5 points are assigned based on type of service								
1 point for Department Heads & Commuter use								
3 points for medium duty, ambulances, parks & rec, service vehicles								
5 points for rough duty, plows, fire engines, etc...								
Reliability: Points are assigned depending on the frequency that a vehicle is in the shop for repair								
1 point for a vehicle in the shop once every 3 months for Preventive Maint								
2 points for a vehicle in the shop once every 2 or 3 months								
3 points for a vehicle in the shop each month for repairs								
4 points for maintenance & repair twice a month for repairs								
5 points for a vehicle in the shop 3 or more times a month								
Maintenance & Repair Costs: Points are assigned based on total life Maintenance & Repair costs								
1 point for maintenance & repair costs less than 20% of original purchase cost								
2 points for maintenance & repair costs totalling 20-40% of original purchase cost								
3 points for maintenance & repair costs totalling 40-60% of original purchase cost								
4 points for maintenance & repair costs totalling 60-80% of original purchase cost								
5 points for maintenance & repair costs totalling 80-100% or greater of original purchase cost								
Condition: This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc...								
1 point for like new condition								
2 points for excellent condition								
3 points for good condition								
4 points for fair/average condition								
5 points for poor condition (Not Inspectable)								





Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

First Year Funding is Requested: 2023

Project Title: Utility 1 - Pickup Replacement

Project Type: Vehicles & Heavy Equipment

Project Cost: \$72,455

Department: Fire

Contact Name: Chief Justin Pizon

Useful Life (Years): 15

Master Plan (Y/N): No

Growth Related (Y/N): No

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Project Description

1. General Project Description? Replace a 2008 Ford F350 Pick-up with a new Ford F350 Pickup with a plow package. While we have explored the use of electric and/or hybrid vehicles, they currently do not meet the department needs for a vehicle larger enough to transport necessary personnel and equipment, plow snow and serve as a tow vehicle for department trailers and boat. We have looked at vehicles with increased fuel mileage and reduced fuel consumption, as compared with existing older vehicles. The current vehicle currently serves as a utility vehicle with a snow plow and is used to pull both emergency and non-emergency trailers to incidents scenes and projects around town, as well as pick up used equipment after fires and other incidents. Examples of the trailers transported include, Point of Distribution, Acute Care and Shelter trailers for Public Health; Hazardous Materials Response trailer; Confined Space and Trench Rescue Trailer; the department boat.

2. Rationale? The 17 year old vehicle will become more difficult to predict service & maintenance needs. We had Exeter Public Works mechanics replace the corroded body mounts and cross members in 2018 and they feel it will be serviceable for "3-4 more years". This vehicle currently receives a Mercury Fleet Study score of 39, which indicates "Needs Immediate Consideration" with 3,755 engine hours and equivalent road mileage of 123,915. With any older vehicle unexpected costs in addition to routine maintenance always has the potential to be higher than budgeted in the operating portion of the budget. A Ford F350 pickup truck will help standardize both our fleet and the town's vehicle inventory. Service needs, parts and inventory at the DPW service area can be better managed and less potential inventory or common items could be bulk purchased for additional savings.

3. Operating Budget Impact? A new vehicle has the potential of reducing the operating budget while the new vehicle warranty is in effect and reduced maintenance costs with a new vehicle should be realized. Vehicle, F350 Pick-up with an 8' plow \$69,500; Lettering \$1,855

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$71,355					

Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0					

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	_____
Estimated Project Cost:	_____
Estimated Fiscal Capital Cost	
\$71,355	

Town of Exeter Vehicle Replacement Guidelines

Department:	Fire						Date:	6/21/2024
Vehicle Name or Number:	Utility 1						Fuel Type:	Diesel
Vehicle Registration:	G12959							
VIN #	1FTWF31R38EC44764							
Vehicle Category	Recommended Replacement Years/Miles	Age	Miles/Hours Nearest 10,000	Type of Service	Reliability	Maintenace & Repairs Costs	Condition Interior/Exterior	Total Points
Passenger Vehicles & Light Trucks, 4x2 & 4x4 Police Sedans, SUV's	10 or 100,000	16	12	3	2	2	4	39
Age: 1 point for each year of chronological age, based on in-service date		2008						
Miles/Hours: 1 point for each 10,000 miles or 750 hours			43,623					
EVT conversion from engine hours to miles is 33 mph		3,755	123,915					
Type of Service: 1, 3, or 5 points are assigned based on type of service								
1 point for Department Heads & Commuter use								
3 points for meduim duty, ambulances, parks & rec, service vehicles								
5 points for rough duty, plows, fire engines,etc...								
Reliability: Points are assigned depending on the frequency that a vehicle is in the shop for repair								
1 point for a vehicle in the shop once every 3 months for Preventive Maint								
2 points for a vehicle in the shop once every 2 or 3 months								
3 points for a vehicle in the shop each month for repairs								
4 points for a vehicle in the shop twice a month for repairs								
5 points for a vehicle in the shop 3 or more times a month								
Maintenance & Repair Costs: Points are assigned based on total life Maintenance & Repair costs								
1 point for maintenance & repair costs less than 20% of original purchase cost								
2 points for maintenance & repair costs totalling 20-40% of original purchase cost								
3 points for maintenance & repair costs totalling 40-60% of original purchase cost								
4 points for maintenance & repair costs totalling 60-80% of original purchase cost								
5 points for maintenance & repair costs totalling 80-100% of original purchase cost								
Condition: This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc...								
1 point for like new condition								
2 points for excellent condition								
3 points for good condition								
4 points for fair/average condition								
5 points for poor condition (Not Inspectable)								





Town of Exeter, New Hampshire
2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

First Year Funding is Requested: 2027

Project Title: Replace Dump Truck #83
 Project Type: Parks Vehicles
 Project Cost: \$69,000

Project Ranking: 1 of 4
 Useful Life (Years): 8
 Master Plan (Y/N): no
 Growth Related (Y/N): No
 Service Related (Y/N): Yes
 Externally Mandated (Y/N): No

Department: Parks and Recreation
 Contact Name: Greg Bisson



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other _____

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

" Annual Operating Impact "	
FY 27	
Salaries & Wages:	
Employees Benefits:	
Expenses:	\$55,000
Other:	
Total:	\$55,000
Estimated Project Cost:	\$55,000
Estimated Fiscal Capital Cost	
\$55,000	

Project Description

General Project Description- Truck #83 was replaced in 2018. This truck will not be used for any plowing operations as it is not equipped for it. It is good shape.

Rationale- This vehicle is the on of the primary trucks for the Departments.

Operating Budget Impact- The price was developed from the NH State bid + 4.5% (1yr) + costs of strobe lights, miscellaneous parts, stainless steel body (Donovon Equip), and radio; Current vehicle has **15109 miles**; This price does not reflect a trade at this time.

Total Capital Cost by Fiscal Year					
FY24	FY25	FY26	FY27	FY28	FY29
	\$0	\$0	\$55,000	\$0	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$55,000	\$0	\$0

Town of Exeter Vehicle Replacement Guidelines

Department:	Parks & Recreation						Date:	June 21, 2024
Vehicle Name or Number:	Truck #83						Fuel Type:	Gas
Vehicle Registration:	2018 Ford 1-Ton with Dump Body							
VIN #								
Vehicle Category	Recommended Replacement Years/Miles	Age	Miles/Hours Nearest 10,000	Type of Service	Reliability	Maintenance & Repairs Costs	Condition Interior/Exterior	Total Points
Medium Trucks 1-Tons & Ambulances	7 or 100,000	1	1	3	1	1	1	8
Age: 1 point for each year of chronological age, based on in-service date								
Miles/Hours: 1 point for each 10,000 miles or 750 hours								
Type of Service: 1, 3, or 5 points are assigned based on type of service								
1 point for Department Heads & Commuter use								
3 points for medium duty, ambulances, parks & rec, service vehicles								
5 points for rough duty, plows, fire engines, etc...								
Reliability: Points are assigned depending on the frequency that a vehicle is in the shop for repair								
1 point for a vehicle in the shop once every 3 months for Preventive Maint								
2 points for a vehicle in the shop once every 2 or 3 months								
3 points for a vehicle in the shop each month for repairs								
4 points for a vehicle in the shop twice a month for repairs								
5 points for a vehicle in the shop 3 or more times a month								
Maintenance & Repair Costs: Points are assigned based on total life Maintenance & Repair costs								
1 point for maintenance & repair costs totalling 20% of original purchase cost								
2 points for maintenance & repair costs totalling 40% of original purchase cost								
3 points for maintenance & repair costs totalling 60% of original purchase cost								
4 points for maintenance & repair costs totalling 80% of original purchase cost								
5 points for maintenance & repair costs totalling 100% or greater of original purchase cost								
Condition: This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc...								
1 point for like new condition								
2 points for excellent condition								
3 points for good condition								
4 points for fair/average condition								
5 points for poor condition (Not Inspectable)								





Town of Exeter, New Hampshire

2024 - 2029 CIP Project Request Form

Date Submitted: 6/21/2024

First Year Funding is Requested: 2026

Project Title: Replace Truck #84
Project Type: Parks Vehicles
Project Cost: \$65,000

Project Ranking: 3 of 4
Useful Life (Years): 12
Master Plan (Y/N): no
Growth Related (Y/N): No
Service Related (Y/N): Yes
Externally Mandated (Y/N): No

Department: Parks and Recreation
Contact Name: Greg Bisson



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other _____

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

" Annual Operating Impact "	
FY 26	
Salaries & Wages:	
Employees Benefits:	
Expenses:	\$60,000
Other:	
Total:	\$60,000
Estimated Project Cost:	\$60,000
Estimated Fiscal Capital Cost	
\$60,000	

Project Description

1. General Project Description- Replace the existing Parks & Recreation vehicle Truck #84 with 1 ton truck 4x4 pick up. The truck was purchased in 2012. The recommended useful life is 8 years according to the Town of Exeter Vehicle Replacement Schedule (VRS). The truck repairs have been routine maintenance. The truck is in good shape. .

2. Rationale- This vehicle is the on of the primary trucks for the Departments. The department uses this vehicle to tow our mowing trailer.

3. Operating Budget Impact- The price was developed from the NH State bid + 4.5% inflation rate (8 yrs) + costs for strobe lights, miscellaneous parts. ; Current vehicle has **47139 miles**; This price does not reflect a trade.

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$60,000	\$0	\$0	\$0	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$60,000	\$0	\$0	\$0	\$0

Town of Exeter Vehicle Replacement Guidelines

Department:	Parks & Recreation							Date:	June 21, 2024
Vehicle Name or Number:	Truck #84							Fuel Type:	GAS
Vehicle Registration:			2012 Ford F-350 4 X 4 with Plow Package						
VIN #									
Vehicle Category	Recommended Replacement Years/Miles	Age	Miles/Hours Nearest 10,000	Type of Service	Reliability	Maintenance & Repairs Costs	Condition Interior/Exterior	Total Points	
Passenger Vehicles & Light Trucks, 4x2 & 4x4 Police Sedans, SUV's	6 and 75,000 or any year and 100,000 miles	9	3	3	2	2	3	22	
Age: 1 point for each year of chronological age, based on in-service date									
Miles/Hours: 1 point for each 10,000 miles or 750 hours									
Type of Service: 1, 3, or 5 points are assigned based on type of service 1 point for Department Heads & Commuter use 3 points for medium duty, ambulances, parks & rec, service vehicles 5 points for rough duty, plows, fire engines, etc...									
Reliability: Points are assigned depending on the frequency that a vehicle is in the shop for repair 1 point for a vehicle in the shop once every 3 months for Preventive Maint 2 points for a vehicle in the shop once every 2 or 3 months 3 points for a vehicle in the shop each month for repairs 4 points for a vehicle in the shop twice a month for repairs 5 points for a vehicle in the shop 3 or more times a month									
Maintenance & Repair Costs: Points are assigned based on total life Maintenance & Repair costs 1 point for maintenance & repair costs totalling 20% of original purchase cost 2 points for maintenance & repair costs totalling 40% of original purchase cost 3 points for maintenance & repair costs totalling 60% of original purchase cost 4 points for maintenance & repair costs totalling 80% of original purchase cost 5 points for maintenance & repair costs totalling 100% or greater of original purchase cost									
Condition: This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc...									
1 point for like new condition									
2 points for excellent condition									
3 points for good condition									
4 points for fair/average condition									
5 points for poor condition (Not Inspectable)									





Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

First Year Funding is Requested: 2029

Project Title: Van 81
 Project Type: Parks Vehicles
 Project Cost: \$50,000

Project Ranking: 4 of 4
 Useful Life (Years): 8
 Master Plan (Y/N): no
 Growth Related (Y/N): No
 Service Related (Y/N): Yes
 Externally Mandated (Y/N): No

Department: Parks and Recreation
 Contact Name: Greg Bisson

Project Description

1. General Project Description- Van 81 is used as a van for either events or maintenance. This is essential in moving large amount of items around or as an additional maintenance vehicle.

2. Rationale- This vehicle is used during everyday activities, travelling to events, and used to transport residents. Adding an ADA van . We would recommend entering into a vehicle purchase lease with a yearly payment to reduce the upfront costs.

3. Operating Budget Impact- The price was an estimated price; This price does not reflect a trade which the current van has no value except for internal use.Current vehicle has 45,872 miles.

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$0	\$0	\$0	TBD	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	TBD	\$0



Check all that apply

2025 - 2030 Source of Funding


- GO Bond/Borrowing
- Grants (If available)
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other Transportation Fund

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

" Annual Operating Impact "	
FY 29	
Salaries & Wages:	
Employees Benefits:	
Expenses:	\$50,000
Other:	
Total:	\$50,000
Estimated Project Cost:	\$50,000
Estimated Fiscal Capital Cost	
\$50,000	

Town of Exeter Vehicle Replacement Guidelines

Department:	Parks & Recreation						Date:	June 21, 2024
Vehicle Name or Number:	Van #81						Fuel Type:	GAS
Vehicle Registration:				2010 Ford Van				
VIN #	1FTBF2A6XCEC27063							
Vehicle Category	Recommended Replacement Years/Miles	Age	Miles/Hours Nearest 10,000	Type of Service	Reliability	Maintenance & Repairs Costs	Condition Interior/Exterior	Total Points
Passenger Vehicles & Light Trucks, 4x2 & 4x4 Police Sedans, SUV's	6 and 75,000 or any year and 100,000 miles	11	4	1	2	3	3	24
Age: 1 point for each year of chronological age, based on in-service date								
Miles/Hours: 1 point for each 10,000 miles or 750 hours								
Type of Service: 1, 3, or 5 points are assigned based on type of service 1 point for Department Heads & Commuter use 3 points for medium duty, ambulances, parks & rec, service vehicles 5 points for rough duty, plows, fire engines, etc...								
Reliability: Points are assigned depending on the frequency that a vehicle is in the shop for repair 1 point for a vehicle in the shop once every 3 months for Preventive Maint 2 points for a vehicle in the shop once every 2 or 3 months 3 points for a vehicle in the shop each month for repairs 4 points for a vehicle in the shop twice a month for repairs 5 points for a vehicle in the shop 3 or more times a month								
Maintenance & Repair Costs: Points are assigned based on total life Maintenance & Repair costs 1 point for maintenance & repair costs totalling 20% of original purchase cost 2 points for maintenance & repair costs totalling 40% of original purchase cost 3 points for maintenance & repair costs totalling 60% of original purchase cost 4 points for maintenance & repair costs totalling 80% of original purchase cost 5 points for maintenance & repair costs totalling 100% or greater of original purchase cost								
Condition: This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc...								
1 point for like new condition								
2 points for excellent condition								
3 points for good condition								
4 points for fair/average condition								
5 points for poor condition (Not Inspectable)								



Town of Exeter, New Hampshire
2025 - 2030 CIP Project Request Form

Date Submitted: **6/21/2024**

First Year Funding is Requested: **2028**

Project Title: **Van #85**
 Project Type: **Parks Vehicles**
 Project Cost: **\$67,500**

Project Ranking: 4 of 4
 Useful Life (Years): **8**
 Master Plan (Y/N): **no**
 Growth Related (Y/N): **No**
 Service Related (Y/N): **Yes**
 Externally Mandated (Y/N): **No**

Department: **Parks and Recreation**
 Contact Name: **Greg Bisson**



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other _____

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

" Annual Operating Impact "	
FY 28	
Salaries & Wages:	
Employees Benefits:	
Expenses:	\$55,000
Other:	
Total:	\$55,000
Estimated Project Cost:	\$55,000
Estimated Fiscal Capital Cost	
\$55,000	

Project Description						
1. General Project Description- Replace the existing Parks & Recreation vehicle Van #85. The van was purchased in 2019 for \$37,737. The recommended useful life is 8 years according to the Town of Exeter Vehicle Replacement Schedule (VRS). The van repairs have been routine maintenance. The Van is in very good shape.						
2. Rationale- This vehicle is used during everyday activities, travelling to events, and used to transport residents.						
3. Operating Budget Impact- The price was an estimated price; Current vehicle has 37423 miles ; This price does not reflect a trade.						
Total Capital Cost by Fiscal Year						
FY24	FY25	FY26	FY27	FY28	FY29	
\$0	\$0	\$0	\$0	\$55,000	\$0	
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
\$0	\$0	\$0	\$0	\$55,000	\$0	

Town of Exeter Vehicle Replacement Guidelines

Department: Vehicle Name or Number: Vehicle Registration: VIN #	Parks & Recreation							Date: June 21, 2024 Fuel Type: GAS	June 21, 2024
	Van #85								GAS
	2018 Ford Tranist Van								
	1FBVU4MXJKA44494								
Vehicle Category	Recommended Replacement Years/Miles	Age	Miles/Hours Nearest 10,000	Type of Service	Reliability	Maintenance & Repairs Costs	Condition Interior/Exterior	Total Points	
Passenger Vehicles & Light Trucks, 4x2 & 4x4 Police Sedans, SUV's	6 and 75,000 or any year and 100,000 miles	4	3	3	1	1	1	13	
Age: 1 point for each year of chronological age, based on in-service date									
Miles/Hours: 1 point for each 10,000 miles or 750 hours									
Type of Service: 1, 3, or 5 points are assigned based on type of service									
1 point for Department Heads & Commuter use									
3 points for medium duty, ambulances, parks & rec, service vehicles									
5 points for rough duty, plows, fire engines, etc...									
Reliability: Points are assigned depending on the frequency that a vehicle is in the shop for repair									
1 point for a vehicle in the shop once every 3 months for Preventive Maint									
2 points for a vehicle in the shop once every 2 or 3 months									
3 points for a vehicle in the shop each month for repairs									
4 points for a vehicle in the shop twice a month for repairs									
5 points for a vehicle in the shop 3 or more times a month									
Maintenance & Repair Costs: Points are assigned based on total life Maintenance & Repair costs									
1 point for maintenance & repair costs totalling 20% of original purchase cost									
2 points for maintenance & repair costs totalling 40% of original purchase cost									
3 points for maintenance & repair costs totalling 60% of original purchase cost									
4 points for maintenance & repair costs totalling 80% of original purchase cost									
5 points for maintenance & repair costs totalling 100% or greater of original purchase cost									
Condition: This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc...									
1 point for like new condition									
2 points for excellent condition									
3 points for good condition									
4 points for fair/average condition									
5 points for poor condition (Not Inspectable)									





Town of Exeter, New Hampshire
2025 - 2030 CIP Project Request Form

Date Submitted: 6/21/2024

First Year Funding is Requested: 2025

Project Title: New Van
 Project Type: Parks Vehicles
 Project Cost: \$125,000

Department: Parks and Recreation
 Contact Name: Greg Bisson

Project Ranking: 4 of 4
 Useful Life (Years): 8
 Master Plan (Y/N): no
 Growth Related (Y/N): No
 Service Related (Y/N): Yes
 Externally Mandated (Y/N): No



Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants (If available)
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other Transportation Fund

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

" Annual Operating Impact "	
FY 25	
Salaries & Wages:	
Employees Benefits:	
Expenses:	\$120,000
Other:	
Total:	\$120,000
Estimated Project Cost:	\$120,000
Estimated Fiscal Capital Cost	
\$120,000	

Project Description						
<p>1. General Project Description- This would be adding a new ADA accessible van our fleet. We have seen an increased need for accessible transportation for our senior and disable population. Would be used to transport residents to in town programming and on trips.</p> <p>2. Rationale- This vehicle is used during everyday activities, travelling to events, and used to transport residents. Adding an ADA van . We would recommend entering into a vehicle purchase lease with a yearly payment to reduce the upfront costs.</p> <p>3. Operating Budget Impact- The price was an estimated price; This price does not reflect a trade.</p>						
Total Capital Cost by Fiscal Year						
	FY25	FY26	FY27	FY28	FY29	FY30
	\$120,000	\$0	\$0	\$0	\$0	\$0
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
	\$120,000	\$0	\$0	\$0	\$0	\$0

NO POINTS PROVIDED



Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

Year Funding is Requested: 2025

Project Title: #33 Dump Truck - Replacement

Project Type: Vehicles & Heavy Equipment

Project Cost: \$160,000

Department: Public Works

Contact Name: Jeff Beck

Project Ranking: _____ of _____

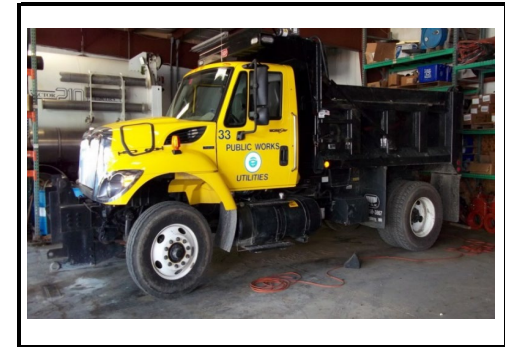
Useful Life (Years): 10

Master Plan (Y/N): No

Growth Related (Y/N): No

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Project Description

Truck #33 was originally assigned to the Water/Sewer Department, then was rotated to Highway Dept in the fall of 2018. This truck was originally purchased in 2008 for \$98,607. The recommended useful life is 10 years according to the Town of Exeter Vehicle Replacement Schedule (VRS), and is currently delayed by 5 years for replacement. The truck repairs have been routine maintenance. This replacement will be a hook-lift truck on an F550 chassis with a smaller wing and plow.

This vehicle is a first response unit in the winter months and used for heavy hauling the rest of the year.

This price includes the cab & chassis and upfit costs for hook body, sander, front and wing plows, strobe lights, miscellaneous parts, and radio.

Is this vehicle assigned to or used by more than one department? No

Approximate Weekly Use in Days (5 days per week, less than 5, seven days per week, etc.) <5 days/week in spring, summer, fall. Up to 7 days/week in winter.

Assigned to Single Operator? (Y/N): No

Mileage/date taken: 5,525 hours, 52,772 miles/June 2024

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other: _____

Project Benefits

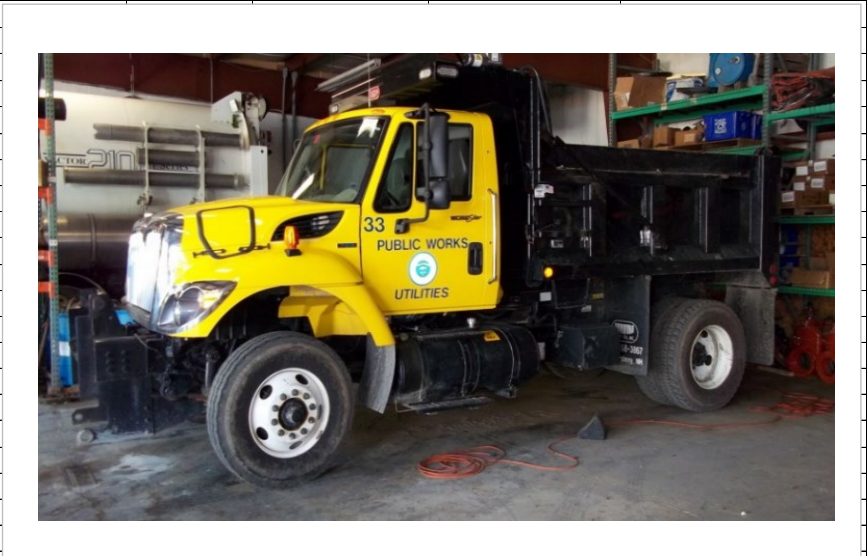
- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year						
FY25	FY26	FY27	FY28	FY29	FY30	
\$160,000	\$0	\$0	\$0	\$0	\$0	
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
\$0	\$0	\$0	\$0	\$0	\$0	

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	_____
Estimated Project Cost:	\$160,000
Estimated Fiscal Capital Cost	
\$160,000	

Town of Exeter Vehicle Replacement Guidelines

Department: Vehicle Name or Number: Vehicle Registration: VIN #	Highway						Date: Fuel Type:	6/20/2024
	Truck #33							Diesel
	2008 International Dump Truck w/Front Plow & Wing							
	1HTWDAAR28J656002							
Vehicle Category	Recommended Replacement Years/Miles	Age	Miles/Hours Nearest 10,000	Type of Service	Reliability	Maintenance & Repairs Costs	Condition Interior/Exterior	Total Points
Heavy Trucks								
Plow Trucks, Fire Engines other large vehicles	12 or 100,000 20 or 250,000	17	5	5	2	2	3	34
Age: 1 point for each year of chronological age, based on in-service date								
Miles/Hours: 1 point for each 10,000 miles or 750 hours								
52,772								
Type of Service: 1, 3, or 5 points are assigned based on type of service								
1 point for Department Heads & Commuter use								
3 points for medium duty, ambulances, parks & rec, service vehicles								
5 points for rough duty, plows, fire engines, etc...								
Reliability: Points are assigned depending on the frequency that a vehicle is in the shop for repair								
1 point for a vehicle in the shop once every 3 months for Preventive Maint								
2 points for a vehicle in the shop once every 2 or 3 months								
3 points for a vehicle in the shop each month for repairs								
4 points for a vehicle in the shop twice a month for repairs								
5 points for a vehicle in the shop 3 or more times a month								
Maintenance & Repair Costs: Points are assigned based on total life Maintenance & Repair costs								
1 point for maintenance & repair costs totalling 20% of original purchase cost								
2 points for maintenance & repair costs totalling 40% of original purchase cost								
3 points for maintenance & repair costs totalling 60% of original purchase cost								
4 points for maintenance & repair costs totalling 80% of original purchase cost								
5 points for maintenance & repair costs totalling 100% or greater of original purchase cost								
Condition: This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc...								
1 point for like new condition								
2 points for excellent condition								
3 points for good condition								
4 points for fair/average condition								
5 points for poor condition (Not Inspectable)								





Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

Year Funding is Requested: 2026

Project Title: #51 Jeep - Replacement
Project Type: Vehicles & Heavy Equipment
Project Cost: \$31,500

Department: Public Works
Contact Name: Jeff Beck

Project Ranking: _____ of _____
Useful Life (Years): 8
Master Plan (Y/N): No
Growth Related (Y/N): No
Service Related (Y/N): Yes
Externally Mandated (Y/N): No



Project Description

This car is an older, reassigned Public Works Director vehicle that is primarily used by the Water & Sewer Utility Clerks for routine meter reading, final reads, account troubleshooting, and other administrative tasks. It also serves as a transport vehicle for water and sewer employees who are attending training or licensing classes out-of-town. The recommended useful life for Public Works Department use is 8 years according to the Town of Exeter Vehicle Replacement Schedule (VRS). Water & Sewer acquired the vehicle in 2017, and was scheduled for replacement in 2022. SUV #51 will be replaced with a AWD crew cab hybrid pickup truck (i.e. Ford Maverick) or equivalent.

Replacement was scheduled for 2025 but has been deferred to 2026 due to financial constraints. The vehicle will be reassigned to the Wastewater Treatment Plant Operators for one year to replace car #13 and limited to in-town use only.

The price was developed from a recent purchase off the NH State bid of the same vehicle for the Maintenance Departments, adjusted for inflation. Costs also include strobe lights, miscellaneous parts, and radio. This price does not reflect trade-in value of existing vehicle.

Is this vehicle assigned to or used by more than one department? If so, list additional department: No

Approximate Weekly Use in Days (5 days per week, less than 5, seven days per week, etc.): 5 days/week

Assigned to Single Operator? (Y/N): Yes, but used by others if necessary

Mileage/date taken: 81,500 7/14/23

Total Capital Cost by Fiscal Year					
FY25	FY26	FY27	FY28	FY29	FY30
\$0	\$31,500	\$0	\$0	\$0	\$0
Operating Budget Impact by Fiscal Year					
Total Operating Expense (estimated) by Fiscal Year					
\$0	\$0	\$0	\$0	\$0	\$0

Check all that apply

2024 - 2029 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other _____

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	_____
Estimated Project Cost:	\$31,500
Estimated Fiscal Capital Cost	
	\$31,500

Town of Exeter Vehicle Replacement Guidelines

Department: Vehicle Name or Number: Vehicle Registration: VIN #	Water & Sewer						Date: Fuel Type:	6/20/2024	
	SUV #51							Gas	
	2014 Jeep Patriot 4x4								
	1C4NJRBB6ED565049								
Vehicle Category	Recommended Replacement Years/Miles	Age	Miles/Hours Nearest 10,000	Type of Service	Reliability	Maintenance & Repairs Costs	Condition Interior/Exterior	Total Points	
Passenger Vehicles & Light Trucks, 4x2 & 4x4 Police Sedans, SUV's	6 and 75,000 or any year and 100,000 miles	10	8	3	2	2	3	28	
Age: 1 point for each year of chronological age, based on in-service date									
Miles/Hours: 1 point for each 10,000 miles or 750 hours									
Type of Service: 1, 3, or 5 points are assigned based on type of service									
1 point for Department Heads & Commuter use									
3 points for medium duty, ambulances, parks & rec, service vehicles									
5 points for rough duty, plows, fire engines, etc...									
Reliability: Points are assigned depending on the frequency that a vehicle is in the shop for repair									
1 point for a vehicle in the shop once every 3 months for Preventive Maint									
2 points for a vehicle in the shop once every 2 or 3 months									
3 points for a vehicle in the shop each month for repairs									
4 points for a vehicle in the shop twice a month for repairs									
5 points for a vehicle in the shop 3 or more times a month									
Maintenance & Repair Costs: Points are assigned based on total life Maintenance & Repair costs									
1 point for maintenance & repair costs totalling 20% of original purchase cost									
2 points for maintenance & repair costs totalling 40% of original purchase cost									
3 points for maintenance & repair costs totalling 60% of original purchase cost									
4 points for maintenance & repair costs totalling 80% of original purchase cost									
5 points for maintenance & repair costs totalling 100% or greater of original purchase cost									
Condition: This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc...									
1 point for like new condition									
2 points for excellent condition									
3 points for good condition									
4 points for fair/average condition									
5 points for poor condition (Not Inspectable)									





Town of Exeter, New Hampshire

2025 - 2030 CIP Project Request Form

Date Submitted: 6/20/2024

Year Funding is Requested: 2025

Project Title: #58 Sidewalk Tractor - Replacement

Project Type: Vehicles & Heavy Equipment

Project Cost: \$225,000

Department: Public Works

Contact Name: Jeff Beck

Project Ranking: _____ of _____

Useful Life (Years): 15

Master Plan (Y/N): No

Growth Related (Y/N): No

Service Related (Y/N): Yes

Externally Mandated (Y/N): No



Project Description
 Replace/Update existing Highway Sidewalk Tractor #58. These tractors serve primarily as snow removal units for sidewalk maintenance however, with the recent expansion of available optional equipment/attachments they are now being used all year round for mowing, sweeping, and asphalt grinding operations.

 This unit is a 1991 model year at 32 years old. It is becoming increasingly difficult to procure replacement parts and newer units are safer and easier to operate as well as being more comfortable during long hours of snow removal operations which leads to lower operator fatigue.

 The price was developed from industry leading manufacturers dealer networks.

 Is this vehicle assigned to or used by more than one department? This piece of equipment is primarily used by the Highway Department but could be used occasionally by others.

 Approximate Weekly Use in Days (5 days per week, less than 5, seven days per week, etc.) 5-7 days per week, weather depending.

 Assigned to Single Operator? (Y/N): No This equipment could be operated by anyone of several staff members throughout the Town departments in order to facilitate snow removal operations as well as other seasonal functions.

 Mileage/date taken: 4,000 plus hours/June 2024

Check all that apply

2025 - 2030 Source of Funding

- GO Bond/Borrowing
- Grants
- Taxes
- Water Fees
- Sewer Fees
- Impact Fees
- Revolving Funds
- Other _____

Project Benefits

- Reduces Liability
- Health or Safety
- Reduces Long Term Debt
- Other: _____

Total Capital Cost by Fiscal Year						
FY25	FY26	FY27	FY28	FY29	FY30	
\$225,000	\$0	\$0	\$0	\$0	\$0	
Operating Budget Impact by Fiscal Year						
Total Operating Expense (estimated) by Fiscal Year						
\$0	\$0	\$0	\$0	\$0	\$0	

" Annual Operating Impact "	
Salaries & Wages:	
Employees Benefits:	
Expenses:	
Other:	
Total:	_____
Estimated Project Cost:	\$225,000
Estimated Fiscal Capital Cost	
	\$225,000

Town of Exeter Vehicle Replacement Guidelines

Department: Vehicle Name or Number: Vehicle Registration: VIN #	Highway						Date: Fuel Type:	6/20/2024	
	Sidewalk Tractor #58							Diesel	
	1991 Trackless MT5 Sidewalk Tractor								
	MT5429								
Vehicle Category	Recommended Replacement Years/Miles	Age	Miles/Hours Nearest 10,000	Type of Service	Reliability	Maintenance & Repairs Costs	Condition Interior/Exterior	Total Points	
Heavy Trucks Plow Trucks, Fire Engines other large vehicles	12 or 100,000 20 or 250,000	34	5	5	2	3	4	53	
Age: 1 point for each year of chronological age, based on in-service date									
Miles/Hours: 1 point for each 10,000 miles or 750 hours									
Type of Service: 1, 3, or 5 points are assigned based on type of service									
1 point for Department Heads & Commuter use									
3 points for medium duty, ambulances, parks & rec, service vehicles									
5 points for rough duty, plows, fire engines, etc...									
Reliability: Points are assigned depending on the frequency that a vehicle is in the shop for repair									
1 point for a vehicle in the shop once every 3 months for Preventive Maint									
2 points for a vehicle in the shop once every 2 or 3 months									
3 points for a vehicle in the shop each month for repairs									
4 points for a vehicle in the shop twice a month for repairs									
5 points for a vehicle in the shop 3 or more times a month									
Maintenance & Repair Costs: Points are assigned based on total life Maintenance & Repair costs									
1 point for maintenance & repair costs totalling 20% of original purchase cost									
2 points for maintenance & repair costs totalling 40% of original purchase cost									
3 points for maintenance & repair costs totalling 60% of original purchase cost									
4 points for maintenance & repair costs totalling 80% of original purchase cost									
5 points for maintenance & repair costs totalling 100% or greater of original purchase cost									
Condition: This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, etc...									
1 point for like new condition									
2 points for excellent condition									
3 points for good condition									
4 points for fair/average condition									
5 points for poor condition (Not Inspectable)									



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Capital Improvement Plan 2018-2023
Fire Department Vehicle Replacement Schedule with Projected Costs

Fire Department									2025							
Vehicle #	Make	Model	Year Purch.	Useful Life	Replace. Year	Original Cost	Replace. Cost	Priority Rank	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	Total for 6-yr Period	
SUV's, PICKUP TRUCKS																
Car 1	Ford	Explorer	2014	10	2024	25,565	\$ 60,606	2	60,412	-	-	-	-	-	-	\$ 60,412
Car 2	Ford	Hybrid Explorer	2023	10	2033	40,796	\$ 49,313		-	-	-	-	-	-	-	\$ -
Car 3	Ford	F-250 Pickup	2023	10	2033	37,320	\$ 58,461		-	-	-	-	-	-	-	\$ -
Car 4	Ford	F-250 Pickup	2018	10	2028	37,320	\$ 60,805		-	-	-	-	58,461	-	-	\$ -
Forestry	Dodge	Ram 5500	2016	15	2031	33,475	\$ 57,248		-	-	-	-	-	-	-	\$ -
Utility	Ford	F-350	2008	15	2023	33,465	\$ 72,455	1	72,455	-	-	-	-	-	-	\$ 72,455
AMBULANCES																
A1	Ford	E-450	2024	6	2030	\$ 283,946	\$ 245,000		-	-	-	-	-	-	-	\$ -
A2	Ford	E-450	2019	6	2025	\$ 244,822	\$ 312,341		-	-	312,341	-	-	-	-	\$ 312,341
FIRE APPARATUS & SPECIALTY EQUIPMENT																
E2	E-One	1500 GPM Pumper	2010	20	2030	\$ 455,000	\$ 786,500		-	-	-	-	-	-	-	\$ -
E3	Crimson	1500 GPM Pumper	2007	20	2027	\$ 422,439	\$ 715,000		-	-	-	715,000	-	-	-	\$ 715,000
E4	E-One	1500 GPM Pumper	2019	20	2039	\$ 515,875	\$ 865,150		-	-	-	-	-	-	-	\$ -
E5	E-One	1500 GPM Pumper	2024	20	2044	\$ 650,000	\$ 951,665		-	-	-	-	-	-	-	\$ -
L1	KME	109' Ladder	2014	20	2034	\$ 854,097	\$ 1,400,000		-	-	-	-	-	-	-	\$ -
TRAILERS																
Emer. Mgmt.	Landscape	Emer. Mgmt Equipment	2010	20	2030				-	-	-	-	-	-	-	\$ -
POD	Cargo	#3 Health - POD Equip.	2010	20	2030				-	-	-	-	-	-	-	\$ -
Shelter	Cargo	#1 Health - Shelter Equip.	2009	20	2029				-	-	-	-	-	-	-	\$ -
ACS	Cargo	#2 Health - Acute Care	2009	20	2029				-	-	-	-	-	-	-	\$ -
Rescue	Cargo	Tech. Rescue Equip.	2004	20	2024				-	-	-	-	-	-	-	\$ -
Fire Alarm		Wire Reel Trailer	1988	20	2008				-	-	-	-	-	-	-	\$ -
Lighting	Alma	Generator/Lighting	1997	20	2017				-	-	-	-	-	-	-	\$ -
Utility	Cargo	Utility Trailer	2016	20	2036				-	-	-	-	-	-	-	\$ -
Car Hauler	KME	Steamer Trailer	2001	20	2021				-	-	-	-	-	-	-	\$ -
6 year General Fund Total															\$ 1,160,208	

General Fund - Existing and Proposed Debt Service 2025-2030

DRAFT Updated: 8/5/2024

GENERAL FUND (Existing Debt Service)																
Project	Authorized	Issued	1st Pmt	Years	Int. Rate	Funding Source	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30	Last Pmt		
Epping Road Water Tank/Roads	2006	2009	2009	20	3.97%	Bond	2,200,000	121,917	117,696	113,343	108,864	107,261	PAID	FY29		
Great Dam Removal Construction	2014	2014	2015	10	2.30%	Bond	1,786,758	PAID						FY24		
Recreation Park Design/Engineering	2019	NA	2020	5	2.11%	Bond	250,000	PAID						FY24		
Salem Street Utilities Design/Engineering	2019	NA	2020	5	2.11%	Bond	325,000	PAID						FY24		
Water Street Sidewalks	2015	2015	2016	10	2.54%	Bond	580,000	56,396	PAID					FY25		
Linden Street Bridge/Culvert Project	2015	2015	2016	10	2.54%	Bond	711,000	66,706	PAID					FY25		
Court Street Bridge/Culvert Project	2017	2017	2018	10	2.34%	Bond	1,336,000	128,274	122,600	116,927	PAID			FY27		
Lincoln Street Phase 2 Improvements	2017	2017	2018	15	2.34%	Bond	1,702,000	132,953	127,996	123,040	118,083	113,127	109,142	FY32		
Library Renovations/Addition	2019	2020	2021	15	1.37%	Bond	4,505,885	367,350	354,345	341,340	328,335	315,330	302,325	FY35		
Solar Array (Cross Road Landfill)	2021/2023	2023	2024	20	3.65%	Bond	5,227,274	461,347	449,150	436,953	424,755	412,558	400,360	FY43		
Salem Street Utilities Construction	2021	2021	2022	15	1.49%	Bond	1,010,000	85,505	82,677	79,849	77,021	74,193	71,365	FY36		
10 Hampton Road Purchase	2022	2022	2023	10	2.63%	Bond	1,250,000	156,429	150,763	145,097	139,431	133,764	128,098	FY32		
Westside Drive Design/Engineering	2022	2022	2026	5	2.00%	SRF	231,500		10,678	10,484	10,290	10,096	9,901	FY30		
Westside Drive Construction-Bond	2023	2023	2024	15	3.35%	Bond	930,698	95,095	92,266	89,436	86,607	83,777	80,948	FY38		
Westside Drive Construction-SRF	2023	2023	2027	20	2.80%	SRF	1,592,794			124,238	122,008	119,778	117,548	FY46		
Intersection Improvements	2023	2023	2024	10	2.99%	Bond	798,000	105,448	101,762	98,076	94,390	90,704	87,018	FY33		
School Street Area Reconstruction (incl Design)	2024	NA	2029	10	2.00%	SRF	2,217,802					266,136	261,701	FY38		
New Police Station with Fire Substation BAN	2024	NA	2025	1	4.89%	BAN	3,500,000	171,150								
New Police Station with Fire Substation Bond	2024	NA	2026	20	3.40%	Bond	17,522,500		1,471,890	1,442,102	1,412,314	1,382,525	1,352,737	FY45		
Total General Fund Existing							47,677,211	1,948,571	3,081,824	3,120,884	2,922,098	3,109,250	2,921,143			
								Year Over Year	(111,088)	1,133,253	39,061	(198,787)	187,152	(188,107)		
								Existing Debt - Tax Rate/1,000	0.54	0.83	0.82	0.75	0.78	0.72		
								Share Home \$500K	\$ 500	270.10	416.76	411.75	376.12	390.45	357.88	
NOTE: SRF = State Revolving Fund (NHDES Funded) - does not include reduction for debt forgiveness																
GENERAL FUND (CIP Proposed Debt Service)																
Project	Proposed	Issued	1st Pmt	Years	Int. Rate	Funding Source	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30			
DPW Fuel Island	2025	NA	2026	5	2.89%	Bond	575,000		131,618	128,294	124,971	121,647	118,324	FY30		
Pickpocket Dam Removal	2025	NA	2026	15	3.09%	Bond	2,100,000		204,890	200,564	196,238	191,912	187,586	FY40		
Linden Street Bridge Supplemental	2025	NA	2026	10	2.72%	Bond	1,257,900		160,005	156,583	153,162	149,740	146,319	FY35		
Great Bay Total Nitrogen Permit (Equipment)	2025	NA	2026	5	2.89%	SRF	395,000		90,416	88,132	85,849	83,566	81,283	FY30		
Water Street Design	2026	NA	2027	5	2.89%	Bond	300,000			68,670		66,936	65,202	FY31		
Washington Street Design	2027	NA	2028	5	2.89%	Bond	155,000				35,480	34,584	33,688	FY32		
Water Street Reconstruction	2027	NA	2028	15	3.09%	Bond	3,152,500				307,579	301,085	294,591	FY42		
Washington Street Construction	2028	NA	2029	10	2.72%	Bond	1,672,500					212,742	208,193	FY38		
Green St Neighborhood Utility Design	2028	NA	2029	5	2.89%	Bond	375,000					85,838	83,670	FY33		
Waterfront Seawall & Boardwalk	2028	NA	TBD				TBD									
Green St Neighborhood Utility Reconstruction	2029	NA	2030	15	3.09%	Bond	5,750,000						561,008	FY44		
Portsmouth Ave Reconstruction	2030	NA	2031	15	3.09%	Bond	2,455,000							FY45		
Drinkwater Road Culvert Replacement	2030	NA	TBD				TBD									
Tan Lane Drainage Improvements	2030	NA	TBD				TBD									
DPW Facility Garage Replacement	TBD	NA	TBD				TBD									
Court St. Fire Station Renovation	TBD	NA	TBD				TBD									
10 Hampton Rd Parking Lot Expansion	TBD	NA	TBD				TBD									
Total General Fund Debt Service							18,187,900	-	586,928	642,244	970,214	1,246,315	1,778,129			
								Proposed Debt - Tax Rate/1,000	-	0.16	0.17	0.25	0.31	0.44		
								Share Home \$500K	-	79.37	84.73	124.88	156.51	217.84		
								Existing Debt Service	1,948,571	3,081,824	3,120,884	2,922,098	3,109,250	2,921,143		
								Proposed Debt Service	-	586,928	642,244	970,214	1,246,315	1,778,129		
								Total Debt Service	1,948,571	3,668,752	3,763,128	3,892,312	4,355,565	4,699,272		
								Total Debt Service Cost (Approved and Projected) \$500K Home	270.10	496.13	496.48	501.00	546.95	575.72		
								Debt/ Budget Ratio	8.3%	15.3%	15.3%	15.4%	16.8%	17.7%		

Water Fund - Existing and Proposed Debt Service, 2025-2030

DRAFT Updated: 8/5/2024

WATER FUND (Existing Debt Service)

Description	Authorized	Issued	1st Pmt	Years	Int. Rate	Funding Source	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30	Last Pmt
Water Tank & Lines/Epping Road	2006	2008	2009	20	1.35%	Bond	3,900,000	270,746	270,746	270,746	257,584	PAID		FY28
Lary Lane GWTP	2012	2016	2017	20	1.96%	SRF	5,040,866	311,632	311,632	311,632	311,632	311,632	311,632	FY36
Lincoln/Winter/Daniel/Tremont Water Lines Repl	2014	2014	2015	10	2.30%	Bond	1,400,000	PAID						FY24
Court Street Bridge/Culvert Project	2017	2017	2018	10	2.54%	Bond	45,000	4,321	4,130	3,938	PAID			FY27
Lincoln Street Phase 2	2017	2017	2018	15	2.34%	Bond	168,000	13,123	12,634	12,145	11,656	11,166	10,773	FY32
Linden Street Bridge/Culvert Project	2017	2020	2020	10	1.07%	SRF	1,124,303	92,940	92,000	91,061	90,121	89,181	PAID	FY29
Groundwater/Surface Water Program	2018	2020	2020	5	0.56%	Bond	600,000	110,355	PAID					FY25
New Groundwater Development Phase 1	2021	2022	2023	10	2.63%	Bond	1,000,000	125,161	120,627	116,093	111,559	107,025	102,492	FY32
Groundwater Redevelopment Phase 2	2023	2023	2024	5	3.26%	Bond	500,000	114,463	109,615	104,766	99,918	PAID		FY28
Washington Street Line Replacement	2018	2018	2019	10	2.55%	Bond	605,000	65,455	57,650	55,100	52,550	PAID		FY28
Salem Street Utilities Design	2019	2019	2020	5	2.11%	Bond	178,970	PAID						FY24
Salem Street Utilities Construction - WF	2021	2021	2022	15	1.49%	Bond	2,500,000	211,647	204,647	197,647	190,647	183,647	176,647	FY36
Westside Drive Design/Engineering	2022	2022	2026	5	2.00%	SRF	231,500		29,574	29,036	28,498	27,961	27,423	FY30
Westside Drive Construction- Bond	2023	2023	2024	15	3.35%	Bond	1,057,874	108,090	104,874	101,657	98,441	95,225	92,009	FY38
Westside Drive Construction- SRF	2023	2023	2027	15	2.63%	SRF	1,540,000			143,092	140,397	137,702	135,007	FY41
School Street Area Reconstruction (incl Design)	2024	NA	2026	10	3.46%	Bond	1,678,148		225,879	220,072	214,266	208,460	202,653	FY35
Surface Water Treatment Plant Design I	2024	2024	2027	5	1.75%	SRF	500,000			108,750	107,000	105,250	103,500	FY29
Total Water Fund Existing							22,069,661	1,427,933	1,544,008	1,765,736	1,714,269	1,277,249	1,162,135	
						Year Over Year		(185,962)	116,074	221,728	(51,467)	(437,019)	(115,114)	

WATER FUND (CIP Proposed Debt Service)

Description	Proposed	Issued	1st Pmt	Years	Int. Rate	Funding Source	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30	
New Groundwater Development Phase 2 - Constr.	2025	NA	2026	15	3.09%	Bond	6,800,000		550,120	539,614	529,108	518,602	508,096	FY45
Water Street Design	2026	NA	2027	5	2.89%	Bond	150,000			34,335	33,468	32,601	31,734	FY31
Surface Water Treatment Plant Design II	2026	NA	2027	15	3.09%	Bond	2,000,000			195,133	191,013	186,893	182,773	FY41
Surface Water Treatment Plant Construction	2027	NA	TBD				TBD							TBD
Water Street Reconstruction	2027	NA	2028	15	3.09%	Bond	1,576,250				153,789	150,542	147,295	FY42
Green St Neighborhood Utility Design	2028	NA	2029	5	2.89%	Bond	187,500					42,919	41,835	FY33
Green St Neighborhood Utility Reconstruction	2029	NA	2030	15	3.09%	Bond	2,875,000						280,504	FY44
Water Main Rehabilitation	2027	NA	2028	10	4.00%	Bond	1,730,000				242,200	235,280	228,360	FY37
Water Main Rehabilitation	2029	NA	2030	10	4.00%	Bond	1,730,000						242,200	FY39
Portsmouth Ave Reconstruction	2030	NA	2031	15	3.09%	Bond	1,227,500							FY45
Total Water Fund Proposed							18,276,250	-	550,120	769,082	1,149,579	1,166,837	1,662,798	
						Existing Debt		1,427,933	1,544,008	1,765,736	1,714,269	1,277,249	1,162,135	
						Proposed Debt		-	550,120	769,082	1,149,579	1,166,837	1,662,798	
						Total Debt Service Budget		1,427,933	2,094,128	2,534,818	2,863,847	2,444,087	2,824,933	

NOTE: SRF = State Revolving Fund (NHDES Funded) - does not include reduction for debt forgiveness

Sewer Fund - Existing and Proposed Debt Service, 2025-2030														Updated:	8/5/2024
DRAFT															
SEWER FUND (Existing Debt Service)															
Description	Authorized	Issued	1st Pmt	Years	Int. Rate	Funding Source	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30	Last Pmt	
Jady Hill Area Improvements Phase 2	2012	2012	2013	20	3.19%	Bond	2,577,000	153,150	147,022	144,750	135,688	133,781	131,719	FY32	
Lincoln/Winter/Daniel Street Sewer Lines	2014	2014	2015	10	3.00%	Bond	200,000	PAID						FY24	
Linden Street Bridge/Culvert Project	2016	NA	2019	20	2.55%	SRF	52,684,766	3,354,468	3,302,054	3,249,641	3,197,227	3,144,814	3,092,400	FY38	
Lincoln Street Phase 2	2017	2018	2018	15	2.34%	Bond	932,000	72,804	70,090	67,375	64,661	61,947	59,765	FY32	
Salem Street Utilities Design	2019	2019	2020	5	2.11%	Bond	325,000	PAID						FY24	
Salem Street Utilities Construction - SF	2021	2021	2022	15	1.49%	Bond	1,590,000	134,608	130,156	125,704	121,252	116,800	112,348	FY36	
Lagoon Sludge Removal	2021	2021	2022	15	1.49%	Bond	2,600,000	222,665	215,270	207,875	200,480	193,085	185,690	FY36	
Westside Drive Design/Engineering	2022	2022	2026	5	2.00%	SRF	231,500		10,678	10,484	10,290	10,096	9,901	FY30	
Westside Drive Construction- Bond	2023	2023	2024	15	3.35%	Bond	331,428	33,864	32,856	31,849	30,841	29,834	28,826	FY38	
Westside Drive Construction- SRF	2023	2023	2027	20	2.80%	SRF	567,206			44,242	43,448	42,654	41,860	FY46	
Court Street Pump Station Upgrades	2023	2023	2024	5	3.26%	Bond	400,000	91,570	87,691	83,813	79,934	PAID		FY28	
Squamscott River Sewer Siphons Phase 1 & 2	2023	2023	2025	10	2.00%	SRF	5,100,000	612,000	601,800	591,600	581,400	571,200	561,000	FY34	
School Street Area Reconstruction (incl Design)	2024	NA	2029	10	2.00%	SRF	2,614,050					313,686	308,458	FY38	
Webster Pumpstation - w/ additional funding	2024	NA	2027	20	2.54%	SRF	3,468,300			261,371	256,973	252,575	248,178	FY46	
Total Sewer Fund Existing							73,621,250	4,675,128	4,597,617	4,818,704	4,722,194	4,870,471	4,780,144		
						Year Over Year		492,169	(77,511)	221,087	(96,509)	148,277	(90,326)		
SEWER FUND (CIP Proposed Debt Service)															
Description	Proposed	Issued	1st Pmt	Years	Int. Rate	Funding Source	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30		
Sewer Capacity Rehabilitation Construction	2026	NA	2027	15	3.09%	Bond	3,420,000			333,678	326,633	319,588	312,542	FY41	
Water Street Design	2026	NA	2027	5	2.89%	Bond	150,000			34,335	33,468	32,601	31,734	FY31	
Water Street Reconstruction	2027	NA	2028	15	3.09%	Bond	1,576,250				153,789	150,542	147,295	FY42	
Washington Street Design	2027	NA	2028	5	2.89%	Bond	95,000				21,746	21,196	20,647	FY32	
Court St Pump Station Design	2027	NA	2028	5	2.89%	Bond	500,000				114,450	111,560	108,670	FY32	
Clemson Pond Rehabilitation	2027	NA	TBD				TBD								
Court St Pump Station Improvements	2028	NA	TBD				TBD								
Washington Street Construction	2028	NA	2029	10	2.72%	Bond	557,500					70,914	69,398	FY38	
Green St Neighborhood Utility Design	2028	NA	2029	5	2.89%	Bond	187,500					42,919	41,835	FY33	
WWTF Upgrades Phase 1 Design	2028	NA	2029	5	2.89%	Bond	200,000					45,780	44,624	FY33	
WWTF Upgrades Phase 1 Construction	2029	NA	2030	15	3.09%	Bond	2,550,000						248,795	FY44	
Green St Neighborhood Utility Reconstruction	2029	NA	2030	15	3.09%	Bond	2,875,000						280,504	FY44	
Sewer Main Rehabilitation Program	2029	NA	2030	15	4.00%	Bond	1,284,000						136,960	FY44	
Portsmouth Ave Reconstruction	2030	NA	2031	15	3.09%	Bond	1,227,500							FY45	
Total Sewer Fund Proposed							14,622,750	-	-	368,013	650,086	795,100	1,443,005		
						Existing Debt		4,675,128	4,597,617	4,818,704	4,722,194	4,870,471	4,780,144		
						Proposed Debt Service		-	-	368,013	650,086	795,100	1,443,005		
						Total Debt Service Budget		4,675,128	4,597,617	5,186,717	5,372,280	5,665,571	6,223,149		

NOTE: SRF = State Revolving Fund (NHDES Funded) - does not include reduction for debt forgiveness

General Fund - Existing and Proposed Lease/Purchase Payments, 2025-2030

DRAFT																	
												Updated:	8/5/2024				
GENERAL FUND (Existing Lease/Purchase)																	
Description	Authorized	Issued	1st Pmt	Years	Int. Rate	Funding Source	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30	Last Pmt			
Engine 5 Replacement	2022	2022	2022	10	3.03%	LPA	635,000	72,363	72,363	72,363	72,363	72,363	72,363	FY31			
Fire SCBA Replacements	2022	2022	2022	7	3.02%	LPA	328,835	51,272	51,272	51,272	51,272	PAID	PAID	FY28			
Sidewalk Tractor #57 Replacement	2023	2023	2023	5	4.50%	LPA	177,000	38,583	38,583	38,583	PAID			FY27			
Police Patrol Motorcycle								2,100	2,100	2,100	2,100	2,100	2,100				
Total General Fund Existing							1,140,835	164,317	164,317	164,317	125,734	74,463	74,463				
LPA = Lease/Purchase Agreement								Existing Debt - Tax Rate/1,000			0.05	0.04	0.04	0.03	0.02	0.02	
								Share Home \$500K			\$ 500	22.78	22.22	21.68	16.18	9.35	9.12
GENERAL FUND (Proposed Lease/Purchase)																	
Description	Proposed	Issued	1st Pmt	Years	Int. Rate	Funding Source	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30				
Sidewalk Tractor #58 Repl.	2025		2025	5	2.67%	LPA	225,000	51,008	49,806	48,605	47,403	46,202	PAID	FY29			
Dump Truck #33	2025		2025	5	2.67%	LPA	160,000	36,272	35,418	34,563	33,709	32,854	PAID	FY29			
John Deere Loader #44	2026		2026	5	2.67%	LPA	200,000		45,340	44,272	43,204	42,136	41,068	FY30			
International Dump Truck #30	2026		2026	5	2.67%	LPA	260,000		58,942	57,554	56,165	54,777	53,388	FY30			
Dump Truck #28	2027		2027	5	2.67%	LPA	260,000			58,942	57,554	56,165	54,777	FY31			
Sidewalk Tractor #59	2027		2027	5	2.67%	LPA	225,000			51,008	49,806	48,605	47,403	FY31			
Engine 3 Replacement	2027		2027	10	2.67%	LPA	800,800			101,461	99,323	97,185	95,047	FY36			
Dump Truck #27	2028		2028	5	2.67%	LPA	260,000				58,942	57,554	56,165	FY32			
Dump Truck #31	2028		2028	5	2.67%	LPA	260,000				58,942	57,554	56,165	FY32			
Sidewalk #56	2030		2030	5	2.67%	LPA	225,000						51,008	FY34			
Engine 2 Replacement	2030		2030	10	2.67%	LPA	995,000							FY39			
Total General Fund Proposed							3,870,800	87,280	189,506	396,404	505,048	493,031	581,088				
								Proposed Debt - Tax Rate/1,000			0.02	0.05	0.10	0.13	0.12	0.14	
								Share Home \$500K			12.10	25.63	52.30	65.01	61.91	71.19	
								Existing LPA			164,317	164,317	164,317	125,734	74,463	74,463	
								Proposed LPA			87,280	189,506	396,404	505,048	493,031	581,088	
								Total LPA			251,597	353,823	560,721	630,782	567,493	655,550	
Total LPA Cost (Approved and Projected) \$500K Home									34.87	47.85	73.98	81.19	71.26	80.31			

Water Fund - Existing and Proposed Lease/Purchase Payments, 2025-2030

DRAFT														Updated:	8/5/2024
WATER FUND (Existing Lease/Purchase)															
<u>Description</u>	<u>Authorized</u>	<u>Issued</u>	<u>1st Pmt</u>	<u>Years</u>	<u>Int. Rate</u>	<u>Funding Source</u>	<u>Original Amt</u>	<u>FY25</u>	<u>FY26</u>	<u>FY27</u>	<u>FY28</u>	<u>FY29</u>	<u>FY30</u>	<u>Last Pmt</u>	
Linden Street Bridge/Culvert Project							-	-	-	-	-	-	-		
WATER FUND (Programmed Lease/Purchase)															
<u>Description</u>	<u>Proposed</u>	<u>Issued</u>	<u>1st Pmt</u>	<u>Years</u>	<u>Interest Rate</u>	<u>Funding Sour</u>	<u>Original Amt</u>	<u>FY25</u>	<u>FY26</u>	<u>FY27</u>	<u>FY28</u>	<u>FY29</u>	<u>FY30</u>		
Total Water Fund Proposed							-	-	-	-	-	-	-		
LPA = Lease/Purchase Agreement						Existing LPA		-	-	-	-	-	-		
						Proposed Debt LPA		-	-	-	-	-	-		
						Total LPA		-	-	-	-	-	-		

Sewer Fund - Existing and Proposed Lease/Purchase Payments, 2025-2030

DRAFT													Updated:	8/5/2024
SEWER FUND (Existing Lease/Purchase)														
Description	Authorized	Issued	1st Pmt	Years	Int. Rate	Funding Source	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30	Last Pmt
Vactor Truck	2023	2023	2023	7	4.36%	LPA	537,775	87,001	87,001	87,001	87,001	87,001	PAID	FY29
Linden Street Bridge/Culvert Project							537,775	87,001	87,001	87,001	87,001	87,001	-	
SEWER FUND (Proposed Lease/Purchase)														
Description	Proposed	Issued	1st Pmt	Years	Int. Rate	Funding Source	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30	
Vactor Truck #67	2029	TBD	2029	5	2.67%	LPA	300,000					68,010	66,408	FY33
Total Sewer Fund Proposed							300,000	-	-	-	-	68,010	66,408	
						Existing LPA		87,001	87,001	87,001	87,001	87,001	-	
						Proposed Debt LPA		-	-	-	-	68,010	66,408	
						Total LPA		87,001	87,001	87,001	87,001	155,011	66,408	

General Fund - Proposed Vehicle/Equipment Projects 2025-2030									
DRAFT							Updated:		8/5/2024
General Fund - (Proposed Non Debt Service or Lease/Purchase Vehicle/Equipment Projects)									
Description	Year Proposed	Funding Source	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30
<u>Fire Department</u>									
Utility 1 Replacement	2025	General Fund	72,455	72,455					
Car 1 Replacement	2026	General Fund	65,969		65,969				
Car 4 Replacement	2028	General Fund	69,500				69,500		
<u>Linden Street Bridge/Culvert Project</u>									
Crime Scene Van	2026	General Fund	60,000		60,000				
<u>Public Works</u>									
Replace Ford F-350 #52	2026	General Fund	80,000		80,000				
Replace Jeep Patriot #65	2026	General Fund	45,000		45,000				
Replace Ingersol Rand Comp. #80	2026	General Fund	20,000		20,000				
Replace Chevrolet Trax #7	2027	General Fund	40,000			40,000			
Replace Ford F-150 Pickup #5	2027	General Fund	65,000			65,000			
Replace Chevy Express Cargo Van #12	2027	General Fund	65,000			65,000			
Replace Chevy Dump Rack Body #29	2027	General Fund	80,000			80,000			
Replace Ford F-550 #1705	2028	General Fund	100,000				100,000		
Replace Ford F-250 #10	2029	General Fund	65,000					65,000	
Replace Jeep Cherokee #17	2029	General Fund	45,000					45,000	
Replace Chevrolet 3500 P/U #23	2029	General Fund	80,000					80,000	
Replace Chevrolet Silverado 1500 #4	2029	General Fund	65,000					65,000	
Replace Jeep Cherokee #1	2030	General Fund	45,000						45,000
Replace Clark Forklift #201	2030	General Fund	30,000						30,000
Replace Band Chipper #1085	2030	General Fund	50,000						50,000
Replace John Deer Attachment #48	2030	General Fund	10,000						10,000
Replace Brush Bandit #64	2030	General Fund	120,000						120,000
<u>Parks/Recreation</u>									
New Purchase - ADA Van	2025	General Fund	120,000	120,000					
Pickup Truck #84 Replace with Dump	2026	General Fund	60,000		60,000				
Replace Dump Truck #83	2027	General Fund	55,000			55,000			
Replace Van #85	2028	General Fund	60,500				60,500		
Replace Van #81	2030	General Fund	60,500						60,500
Total General Fund			1,628,924	192,455	330,969	305,000	230,000	255,000	315,500
		Tax Rate/1,000		0.05	0.09	0.08	0.06	0.06	0.08
		Share Home \$500K	\$ 500	26.68	44.76	40.24	29.60	32.02	38.65

Water/Sewer Funds - Proposed Vehicle/Equipment Projects 2025-2030

DRAFT

Updated: 8/5/2024

WATER/SEWER FUND (Proposed Non Debt Service or Lease/Purchase Vehicle/Equipment Projects)

<u>Description</u>	<u>Year Proposed</u>	<u>Funding Source</u>	<u>Original Amt</u>	<u>FY25</u>	<u>FY26</u>	<u>FY27</u>	<u>FY28</u>	<u>FY29</u>	<u>FY30</u>
Replace Jeep Patriot #51	2026	Water/Sewer Funds	31,500		31,500				
Replace Ford F-250 #14	2026	Water/Sewer Funds	65,000		65,000				
Replace Trailer #109	2027	Water/Sewer Funds	20,000			20,000			
Replace Truck #32	2028	Water/Sewer Funds	100,000				100,000		
Replace Backhoe #53	2028	Water/Sewer Funds	200,000				200,000		
Linden Street Bridge/Culvert Project	2029	Water/Sewer Funds	65,000					65,000	
Replance Chevrolet P/U #8	2029	Water/Sewer Funds	40,000					40,000	
Replace Ford F-450 #19	2030	Water/Sewer Funds	100,000						100,000
Replace Ford F-350 #2	2030	Water/Sewer Funds	80,000						80,000
Replace Generator #45	2030	Water/Sewer Funds	5,000						5,000
Total Water/Sewer Fund			706,500	-	96,500	20,000	300,000	105,000	185,000

General Fund - Proposed Non-Debt Service Projects 2025-2030										
DRAFT								Updated:	8/5/2024	
GENERAL FUND										
Description	Year Proposed	Funding Source	Department	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30
Planning										
ADA Improvement Fund	2025	General Fund	Planning	25,000	25,000					
Public EV Charging Facility	2025	General Fund	Planning	157,000	120,000	37,000				
Exeter Train Station Improvements	2026	General Fund	Economic Dev.	50,000		50,000				
Master Plan Update	2029	General Fund	Planning	50,000					50,000	
Linden Street Bridge/Culvert Project				282,000	145,000	87,000	-	-	50,000	-
Public Safety										
Communications Repeater Site	2028	General Fund	Public Safety	93,759				93,759		
Total Public Safety				93,759	-	-	-	93,759	-	-
Public Works										
Intersection Improvements - Front Street	2025	General Fund	Public Works	100,000	100,000					
Transfer Station Improvements	2025	General Fund	Public Works	100,000	100,000					
Styrofoam Recycling Unit	2025	General Fund	Public Works	80,000	80,000					
Great Bay Total Nitrogen General Permit	2026	General Fund	Public Works	250,000		100,000	75,000	50,000	25,000	
DPW Intersection Improvements Program	2026	General Fund	Public Works	50,000		50,000				
Portsmouth Ave Design	2028	General Fund	Public Works	187,500				37,500	150,000	
Tan Lane Drainage Design	2028	General Fund	Public Works	135,000				135,000		
Drinkwater Road Culvert Application	2029	General Fund	Public Works	135,000					135,000	
Waterfront Seawall with Sidewalk	2028	General Fund	Public Works	TBD						
Storm Drain Rehabilitation Program	TBD	General Fund	Public Works	TBD						
Total Public Works				1,037,500	280,000	150,000	75,000	222,500	310,000	-
Parks/Recreation										
Parks Improvement Fund	2025	General Fund	Parks/Recreation	600,000	100,000	100,000	100,000	100,000	100,000	100,000
Tennis Court Reconstruction	TBD	General Fund	Parks/Recreation	TBD						
Total Parks/Recreation				600,000	100,000	100,000	100,000	100,000	100,000	100,000
Total General Fund				2,013,259	525,000	337,000	175,000	416,259	460,000	100,000
			Existing Debt - Tax Rate/1,000		0.15	0.09	0.05	0.11	0.12	0.03
			Share 500K Home	\$ 500	72.77	45.57	23.09	53.58	57.76	12.56

Water Fund - Proposed Non-Debt Service Projects 2025-2030

DRAFT								Updated:	8/5/2024
WATER FUND (Proposed Non Debt Service Projects)									
Description	Year Proposed	Funding Source	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30
Portsmouth Ave Design	2028	Water Fees	93,750				18,750	75,000	
Total Water Fund			93,750	-	-	-	18,750	75,000	-

Sewer Fund - Proposed Non-Debt Service Projects 2025-2030

DRAFT								Updated:	8/5/2024
SEWER FUND (Proposed Non Debt Service Projects)									
Description	Year Proposed	Funding Source	Original Amt	FY25	FY26	FY27	FY28	FY29	FY30
Intersection Improvements - Front Street	2025	Sewer Fees	150,000	150,000					
Clemson Lagoon	2025	Sewer Fees	500,000	500,000					
WWTF Effluent Flume	2025	Sewer Fees	245,000	245,000					
Portsmouth Ave Design	2028	Sewer Fees	93,750				18,750	75,000	
Linden Street Bridge/Culvert Project			988,750	895,000	-	-	18,750	75,000	-



TOWN OF EXETER

Planning and Building Department

10 FRONT STREET • EXETER, NH • 03833-3792 • (603) 778-0591 • FAX 772-4709

www.exeternh.gov

Date: August 14, 2024
To: Planning Board
From: Dave Sharples, Town Planner
Re: Meniscus Financial Holdings LLC – 127 Portsmouth Avenue
PB Case #24-1

The Applicant is seeking a site plan review and Wetlands/Shoreland permits for the proposed construction of a commercial vehicle storage area, a 22,500 S.F. accessory storage building and associated site improvements on the property located at 127 Portsmouth Avenue. The property is located in the C-2, Highway Commercial zoning district and is identified as Tax Map Parcel #52-112-2.

The Applicant appeared before the Planning Board again at the July 11th, 2024 meeting. After considerable discussion, the Board noted their concerns relative to the scope of the project, stormwater, the impacts the proposed project will have on the shoreland buffers and the potential impact to the water quality. Subsequently, the Applicant requested a continuance to give them the opportunity to go back and reconsider the plan and to respond to UEI comments. It was noted that the application would be rescheduled for the August 22nd, 2024 meeting.

The Applicant met again with the Conservation Commission at their August 13th, 2024 meeting. The Commission voted to not recommend approval of the Wetland and Shoreland Conditional Use Permit applications. A memo from Conservation and Sustainability Planner Kristen Murphy, dated 8/14/24, is attached for your review.

Revised plans and supporting documents were submitted to our office on August 7th, 2024, and are enclosed for your review. I have received confirmation from Underwood Engineers (UEI) that they had a meeting with the Applicant and engineer to go over this latest submittal and the actual submittal appears to reflect everything that was discussed; they have no further comments. Staff is still in the process of reviewing those materials. I will update the Board with my review of the revised plans at the meeting.

Planning Board Motions:

Site Plan Motion: I move that the request of Meniscus Financial Holdings LLC (PB Case #24-4) for Site Plan approval be APPROVED / APPROVED WITH THE FOLLOWING CONDITIONS / TABLED / DENIED.

Conditional Use Permit (Wetlands) Motion: After reviewing the criteria for a Wetlands Conditional Use permit, I move that the request of Meniscus Financial Holdings LLC (PB Case #24-4) for a Conditional Use Permit be APPROVED / APPROVED WITH THE FOLLOWING CONDITIONS / TABLED / DENIED.

Conditional Use Permit (Shoreland) Motion: After reviewing the criteria for a Shoreland Conditional Use permit, I move that the request of Meniscus Financial Holdings LLC (PB Case #24-4) for a Conditional Use Permit) be APPROVED / APPROVED WITH THE FOLLOWING CONDITIONS / TABLED / DENIED.

Thank You.

Enclosures

**TOWN OF EXETER
CONSERVATION COMMISSION MEMORANDUM**

Date: August 14, 2024
To: Exeter Planning Board
From: Dave Short, Chair, Exeter Conservation Commission
Subject: Shoreland and Wetland CUP Application

Project Information:

Project Location: 127 Portsmouth Ave, Exeter, NH
Map/Lot: Tax Map Parcels #52-112-2
CC Review Date: 7/9/24
PB CASE: #24-4

Following review and discussion of the project as redesigned, the Commission voted unanimously that they are not in support of the Shoreland Conditional Use Permit (CUP) Application because the project is not a minor encroachment in the district, with most of the building and parking lot located within the 300' shoreland district established for the protection of Water Works Pond and due to concerns over stormwater impact.

When discussing the project, reference was made to the buildable area identified during the original subdivision approval process for this lot. Additionally, several members expressed concerns in particular with the building and though they recognized the effort of the team to reduce impacts, with so much of project within the sensitive areas the ordinance was put in place to protect, we felt we could not support the application.

With regard to the Wetland Conditional Use Permit, the board voted unanimously we have reviewed the Wetland CUP application and are not in support of the application because they are asking for an alternate design to the site [referencing the shoreland impacts] and this design impacts 5,000 square feet of wetlands and 35,000 square feet of wetland buffer.

The vice-chair of the Commission Conor Madison will be present at the planning board meeting to represent the Commission and answer any questions the board may have.

Dave Short

**70 Portsmouth Avenue
3rd Floor, Suite 2
Stratham, N.H. 03885
603 – 583 - 4860
Fax: 583 - 4863**

August 2, 2024

Chairman
Town of Exeter Planning Board
10 Front Street
Exeter, NH 03833

RE: Letter of Explanation
Foss Motors - Proposed Vehicle Storage Area & Accessory Storage Use
Tax Map 0052 Lot #: 112.2

Members of the Board:

The applicant originally proposed a 22,500-square-foot accessory storage building with associated parking at 127 Portsmouth Avenue to expand inventory for the existing dealership. This 6.24-acre parcel is subject to 150-foot and 300-foot municipal Shoreland Protection District (SPD) buffers adjacent to the Exeter Reservoir, along with wetland pockets and their buffers. Due to these environmental constraints, Conditional Use Permits are required for both the Wetlands Conservation Overlay District and the Shoreland Protection District. The impacts on wetlands and shorelands are detailed in the provided plans and are also shown below.

In response to concerns raised by the Conservation Commission and Planning Board during several meetings and site visits, the applicant has scaled down the project to better protect resources within the Shoreland Protection District near the Exeter River and Wheelwright Creek. Additionally, the Technical Review Committee (TRC), along with Underwood Engineering, has reviewed the revised plans, leading to significant modifications based on their feedback.

To address the input from the Commission, Board, and other reviews, the following changes have been made:

- The size of the commercial vehicle storage area and the building have been reduced to minimize impact on the Shoreland Protection District.
- Impervious surfaces have been reduced by incorporating porous pavement and eliminating the drive aisle around the building.
- A large stone infiltration trench has been added along the south side of the building to improve stormwater infiltration.
- All parking and pavement outside the 150-foot shoreland setback have been removed.
- Parking has been relocated closer to GTE Road.

The proposal retains a driveway connection to the existing Foss Motors and two access driveways to the new lot. The building will continue to be served by municipal water and

sewer systems. Stormwater will be managed through filtration via porous pavement and bioretention media in the infiltration trench.

Wetland and Wetland Buffer Impact Summary	
Permanent Wetland Impact	5,007 sf
Permanent Wetland Buffer Impact	35,530 sf
Temporary Wetland Buffer Impact	304 sf

Shoreland Protection District Impact Summary	
Permanent Shoreland Impact (0' – 150')	6,784 sf
Permanent Shoreland Impact (150' – 300')	53,188 sf
Temporary Shoreland Impact (150' – 300')	7,929 sf
Building Setback Impact	20,000 sf
Shoreland Protection Impervious Area	42,241sf (23.5%)

We look forward to presenting the updated project to you soon.

Thank you for your consideration.

Very truly yours,
BEALS ASSOCIATES, PLLC

Christian O Smith

Christian O. Smith P.E.
Principal



Exeter Planning Board,
David Sharples, Town Planner
Town Planning Office, Town of Exeter
10 Front Street
Exeter, NH 03833

August 6, 2024

Re: Foss Motors – 127 Portsmouth Avenue – Commercial Site Plan
Response to Fourth Round of Underwood Engineers Comments

Dear Mr. Chairman & Members of the Board:

We are in receipt of a 4th review letter from Underwood Engineers, dated July 8, 2024 and we offer the following responses to the noted comments. Each comment is followed by our response in ***italicized bold***.

- 49.** It is unclear how the void ratios and infiltration rate utilized in the stormwater model/report were derived. Please provide results of infiltration tests.

Beads Response: Typical void ratios of 40% was used for stone, 30% was used for the filter media and sand, and 18% was used for the porous pavement. Infiltration rates have been revised to match Amoozemeter results from Gove Environmental. Those results are included as part of this re-submittal.

We note the three infiltration tests done on the site yielded results of 0.09 in/hr, 0.23in/hr, and 0.49 in/hr. In general, 0.25 in/hr is considered the minimum infiltrate rate for stormwater practices involving porous pavement.

Response: As discussed, porous pavement is a filtering practice not an infiltration practice per Env-Wq 1500 and does not require infiltration. The filer (subsurface bedding materials for the pavement) provides the BMP stormwater treatment prior to storage in the stone reservoir and/or discharge. See attached email confirmation from Mike Schlosser, PE of the AoT Bureau.

- 50.** Provide test pit logs to confirm the bottom of the porous pavement practice maintains 4' above the ESHWT in all locations.

Beads Response: Test pit results performed by Gove Environmental are included as part of this re-submittal. Per Env-Wq 1508.08(i) the filtering practice has a depth of 24 inches and one foot of separation to the ESHWT with the use of underdrains.

Test pits 1 through 4 show the material is fill over marine clays. The ESHWT varies between 16" and 32" below existing grade. None of the Test Pits support the recommended 3'-5' of separation between the proposed bottom of practice (47" porous pavement section) and the estimated seasonal high water table.

Response: Env-Wq 1500 does not require 3 to 5 feet of separation between the bottom of practice and estimated seasonal high water table, but does require at least 1 foot of separation. See attached email confirmation from Mike Schlosser, PE of the AoT Bureau. Additionally, the system is designed with an underdrain system that conveys the treated stormwater to an existing pond/outlet structure across the GTE Road.

51. The intent of pervious surface practices, such as porous pavement, is to encourage infiltration to the native soils. This site appears to be mix of fills and native soils. Nearby sites have marine clay restrictive soils that prohibit any infiltration. The soils report notes part of the site to be poorly drained with a shallow water table, with a perched water table over marine silts. The project proposes additional fills, much of which being the aggregates needed to construct the proposed porous pavement section, requiring the existing soils to be further moved and manipulated to achieve the proposed final grading adjustments of 6” to 6’ in places. What measures have the applicant and their consultant researched and evaluated to ensure that the proposed porous pavement will achieve a reasonable amount of infiltration and not merely serve as detention? Add a discussion to the stormwater report to address how well the system will function within these parameters.

Beals Response: Due to the slope of the existing terrain, fill will be required in portions of the parking lot. This fill will be above the native soil which, although slow, does have an infiltration rate as shown in the Gove Environmental tests.

Two out of three of the infiltration rates from the tests are lower than the minimum recommended infiltration rate for porous pavement. The UNH Stormwater Center recommends a minimum rate of 0.25 in/hr. In addition, taking into account the proposed grades relative to the existing grades, none of the four test pits show sufficient separation from the ESHWT per the UNH Stormwater Center’s guidance of 3’ to 5’ of separation. UE remains concerned with the capacity of the existing soils to meet the proposed infiltration needs. The proposed network of underdrain 3” off the bottom of the practice is intercepting the run-off and redirect it to the closed drainage system for discharge.

Response: As detailed prior, porous pavement is a filtering practice not an infiltration practice per Env-Wq 1500 and does not require infiltration. Also, Env-Wq 1500 does not require 3 to 5 feet of separation between the bottom of practice and estimated seasonal high water table, but does require at least 1 foot of separation which is provided.

52. We note any storage and pollutant removal capability of the porous pavement is heavily contingent on system maintenance. Clogging of the filter layer over time will reduce storage and pollutant removal capacity. What assurances can be provided to the Town that the system will receive proper and timely maintenance? The maintenance calls for the porous pavement to be vacuumed 2 to 3 times per year on the detail sheet, but 1 to 2 times per year in the I&M Plan.

Beals Response: The porous pavement parking area will be a low use site with very little traffic as opposed to a typical parking lot. Additionally, where a ratio of 5:1 contributing area to pervious surface is allowed, there is very little runoff outside of the porous pavement area that contributes to the pervious surface. This will greatly reduce the amount of potential sediment and clogging of the

porous pavement. We have revised the detail sheet to match the I&M plan to vacuum 1 to 2 times per year per UNH recommendations, and records of all maintenance, including vacuuming, will be provided to the Town upon request.

The porous pavement parking areas include a network of underdrain 3” above the bottom of the practice. The underdrain network is intercepting the ponded run-off and redirecting it to the closed drainage system for discharge. It is unclear if the infiltrated volume is sufficient to comply with the Town’s treatment regulations. We defer further comment to the Planning Board.

Response: The underdrains below the porous pavement are designed per Env-Wq 1500 to keep stormwater moving while allowing infiltration. The stone drip edge trench adjacent to the proposed building provides more than the required infiltration volume.

53. New comment: Regarding the infiltration trench to the south of the building:

- a. The Detail indicates that the Stone Fill will be 43 Feet in depth, UE assumes that is intended to be 3’ based on the surface elevation of 30’ and bottom of practice at 26’. Confirm Intent.
- b. Test pit logs were provided for TP#1 through #4 only. The infiltration basin to the south of the building is closest to TP #5. Please provide those results to confirm the elevation of the ESHWT in that area is at elevation 25 or below, providing sufficient separation.
- c. An infiltration rate of 10 in/hr was used in the drainage study. The amoomezeter testing does not support this infiltration rate.

Response:

- a. *The typo on Stone Infiltration Trench Section has been corrected to 3 feet.*
- b. *The soil scientist revised the location of Test Pit #5 in the field after discovering that accessing the original site would require the removal of numerous trees. As an alternative, a test pit labeled 'HILLSIDE' was conducted in soils similar (same SSS soil mapping unit) to those at the proposed location. The results from this test are included in the Drainage Analysis, and the revised location is shown on the plans.*
- c. *The amoomezeter testing was performed in the area of the porous pavement in different soil types and does not reflect the area of the infiltration trench which is proposed in native (undisturbed) HSG “A” soils. As allowed in Env-Wq 1504.14(b), Agawam soils are permitted to use SSSNNE published Ksat values and multiplying the Ksat value by 0.5.*

Thank you for your timely and professional review of the submitted plans. We hope the information provided address your concerns. Please feel free to contact our office if you have any additional question and/or comments.

Very Truly Yours,

BEALS ASSOCIATES, PLLC

Christian O. Smith

Christian O. Smith, PE
Principal

From: [Schlosser, Michael](#)
To: [Christian Smith](#)
Subject: RE: expired permit files
Date: Tuesday, July 9, 2024 11:38:00 AM

Yes, per AoT rules, pervious pavement is a filtering practice that can infiltrate if feasible, but it is not required. If underdrains control the depth to ESHWT, separation must be at least 1' below the bottom of the filter.

Mike Schlosser, PE
Alteration of Terrain Bureau, Land Resources Management

Water Division, NH Department of Environmental Services
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095
(603) 271-3568
Michael.J.Schlosser@des.nh.gov

From: Christian Smith <csmith@bealsassociates.com>
Sent: Tuesday, July 9, 2024 11:22 AM
To: Schlosser, Michael <Michael.J.Schlosser@des.nh.gov>
Subject: RE: expired permit files

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

Sorry to pester you again Mike. Quick question, we have a reviewer for a municipality stating that 0.25in/hour is a minimum infiltration rate for pervious pavement, and that 3'-5' is a minimum separation to ESHWT for the same. We have underdrains controlling the ESHWT, and directing flow to a closed drainage system & my understanding that pervious pavement is a filtering practice, not an infiltration practice. Am I off the mark on this?



Christian O. Smith, P.E.

Principal

Beals Associates, PLLC.

70 Portsmouth, Ave. 3rd Floor

Stratham, NH 03885

603-583-4860

603-583-4863

csmith@bealsassociates.com

From: Schlosser, Michael <Michael.J.Schlosser@des.nh.gov>
Sent: Tuesday, July 9, 2024 11:09 AM
To: Christian Smith <csmith@bealsassociates.com>
Subject: RE: expired permit files

Sounds good, thanks!

Mike Schlosser, PE
Alteration of Terrain Bureau, Land Resources Management

Water Division, NH Department of Environmental Services
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095
(603) 271-3568
Michael.J.Schlosser@des.nh.gov

From: Christian Smith <csmith@bealsassociates.com>
Sent: Tuesday, July 9, 2024 11:04 AM
To: Schlosser, Michael <Michael.J.Schlosser@des.nh.gov>
Subject: RE: expired permit files

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

Thank you Mike, the client has just put me in touch with the original engineer & I may be able to get the files from him (he is on vacation for this week). I will wait to see what he has available & will reach out if I am in need of anything additional. Thank you again!



Christian O. Smith, P.E.

Principal

Beals Associates, PLLC.

70 Portsmouth, Ave. 3rd Floor

Stratham, NH 03885

603-583-4860

603-583-4863

csmith@bealsassociates.com

From: Schlosser, Michael <Michael.J.Schlosser@des.nh.gov>
Sent: Tuesday, July 9, 2024 9:20 AM
To: Christian Smith <csmith@bealsassociates.com>
Subject: RE: expired permit files

I can check to see if we have pdfs first before you file the request to save the paperwork. Just let me know the permit number.

Mike Schlosser, PE
Alteration of Terrain Bureau, Land Resources Management

Water Division, NH Department of Environmental Services
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095
(603) 271-3568
Michael.J.Schlosser@des.nh.gov

From: Christian Smith <csmith@bealsassociates.com>
Sent: Tuesday, July 9, 2024 8:19 AM
To: Schlosser, Michael <Michael.J.Schlosser@des.nh.gov>
Subject: RE: expired permit files

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Mike, mostly the drainage and plan set files. Thank you for the procedure on records request, I will follow-up with that. I appreciate your time and assistance!



Christian O. Smith, P.E.

Principal

Beals Associates, PLLC.

70 Portsmouth, Ave. 3rd Floor

Stratham, NH 03885

603-583-4860

603-583-4863

csmith@bealsassociates.com

From: Schlosser, Michael <Michael.J.Schlosser@des.nh.gov>
Sent: Tuesday, July 9, 2024 7:57 AM

To: Christian Smith <csmith@bealsassociates.com>

Subject: RE: expired permit files

Hi Christian,

Yes, if we have them. What permit files are you looking for?

If we have them, you will need to submit a records request on the NHDES website here: [Support Home Page \(govqa.us\)](https://support.homepage.govqa.us). Click on Submit a Records Request and create an account. The PIC office will then contact you when the files are available. In your request, please note that you only want to obtain pdfs and not to review the hard copy of the file (unless you would like to).

Thanks,

Mike Schlosser, PE

Alteration of Terrain Bureau, Land Resources Management

Water Division, NH Department of Environmental Services

29 Hazen Drive, PO Box 95

Concord, NH 03302-0095

(603) 271-3568

Michael.J.Schlosser@des.nh.gov

From: Christian Smith <csmith@bealsassociates.com>

Sent: Monday, July 8, 2024 1:37 PM

To: Schlosser, Michael <Michael.J.Schlosser@des.nh.gov>

Subject: expired permit files

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Mike, random question for you. Is it possible to get PDF copies of final CD PDFs for expired permits? I have a client who is interested in permitting an unbuilt phase of a formerly approved AoT project, but I s having issues obtaining information & data from the now retired engineer who did the initial permitting. Let me know your thoughts & we can discuss further. Thank you!



Christian O. Smith, P.E.
Principal

Beals Associates, PLLC.

70 Portsmouth, Ave. 3rd Floor

Stratham, NH 03885

603-583-4860

603-583-4863

csmith@bealsassociates.com

COMMERCIAL SITE PLAN

127 PORTSMOUTH AVENUE

(NH ROUTE 108)

TAX MAP 52, LOT 112.2

FEBRUARY 13, 2004

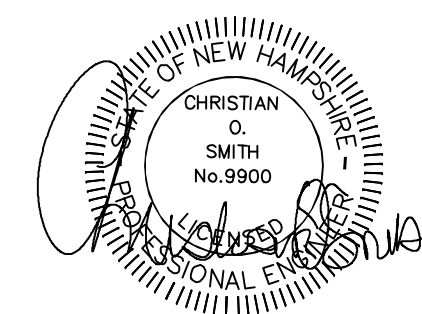
NOT FOR CONSTRUCTION

DRAWING INDEX

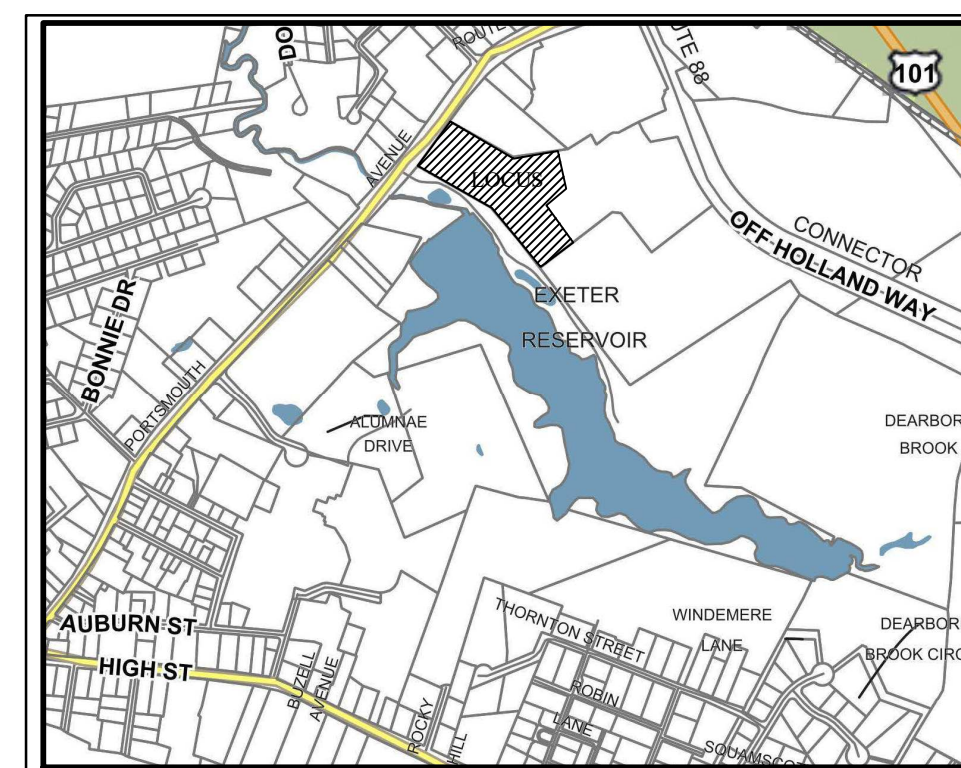
CIVIL ENGINEERS:

BEALS ASSOCIATES PLLC

70 PORTSMOUTH AVE, STRATHAM, N.H. 03885
 PHONE: 603-583-4860, FAX: 603-583-4863



LOCATION MAP



SCALE: 1"=600'

SHEET #	TITLE
1	COVER SHEET
2	EXISTING CONDITIONS PLAN (DOUCET SURVEY)
3	SITE PLAN
4	GRADING, DRAINAGE, & EROSION CONTROL
5	UTILITY PLAN
6	LIGHTING & LANDSCAPE PLAN
7-8	EROSION & SEDIMENT CONTROL DETAILS
9	CONSTRUCTION DETAILS
10	UTILITY DETAILS
	EXETER LADDER TRUCK MANEUVERING PLAN

LAND SURVEYORS:

DOUCET SURVEYING

Serving Your Professional Surveying & Mapping Needs
 102 Kent Place, Newmarket, NH 03857-0163
 Voice (603) 659-6560, Data (603) 659-4118

PLAN SET LEGEND

5/8" REBAR		VERTICAL GRANITE CURB
DRILL HOLE		
CONC. BOUND		
UTILITY POLE		
DRAIN MANHOLE		
SEWER MANHOLE		
EXISTING LIGHT POLE		
EXISTING CATCH BASIN		
PROPOSED CATCH BASIN		
WATER GATE		
WATER SHUT OFF		
HYDRANT		
PINES, ETC.		
MAPLES, ETC.		
EXIST. SPOT GRADE		
PROP. SPOT GRADE		
DOUBLE POST SIGN		
SINGLE POST SIGN		
VCC		
OVERHEAD ELEC. LINE		
FENCING		
DRAINAGE LINE		
SEWER LINE		
GAS LINE		
WATER LINE		
STONE WALL		
TREE LINE		
ABUT. PROPERTY LINES		
EXIST. PROPERTY LINES		
BUILDING SETBACK LINES		
EXIST. CONTOUR		
PROP. CONTOUR		
SOIL LINES		

RECORD OWNER/APPLICANT

MENISCUS FINANCIAL HOLDINGS, LLC
 133 PORTSMOUTH AVE.
 (NH ROUTE 108)
 EXETER, NEW HAMPSHIRE

REQUIRED STATE AND FEDERAL PERMITS

CONSTRUCTION GENERAL PERMIT
 NHDES ALTERATION OF TERRAIN PERMIT
 NHDES SHORELAND PERMIT
 NHDES WETLANDS BUREAU DREDGE AND FILL

WETLAND/SOIL CONSULTANT:

GOVE ENVIRONMENTAL SERVICES INC.
 8 CONTINENTAL DRIVE,
 BLDG 2 UNIT H
 EXETER, NH 03833
 1-603-778-0644

PB CASE # 23-7

CHAIRMAN SIGNATURE: _____

	REVISIONS:	DATE:
1	REVISED PER REVIEW COMMENTS	3/28/24
2	REVISED PER REVIEW COMMENTS	5/15/24
3	REVISED PER REVIEW COMMENTS	6/27/24
4	REVISED PER REVIEW COMMENTS	8/6/24
5		

NH-1471 PROPOSED SITE PLAN

NOTES:

- REFERENCE: TAX MAP 52, LOT 112-2
127 PORTSMOUTH AVENUE,
EXETER, NH
- TOTAL PARCEL AREA: 271,768 SQ. FT. OR 6.24 AC.
- OWNER OF RECORD & APPLICANT: MENISCUS FINANCIAL HOLDINGS LLC
131 PORTSMOUTH AVENUE
EXETER, NH 03833
603-772-7777
R.C.R.D. BOOK 6449 PAGE 841
- FIELD SURVEY PERFORMED BY M.A.W. & C.J.V. (DOUCET SURVEY) DURING OCTOBER 2023 USING A TOTAL STATION AND A SURVEY GRADE GPS WITH A DATA COLLECTOR AND AN AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
- HORIZONTAL DATUM BASED ON NAD83(2011) NEW HAMPSHIRE STATE PLANE COORDINATE ZONE (2800) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
- VERTICAL DATUM IS BASED ON APPROXIMATE NAVD83(GEOD18) (±2') DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
- JURISDICTIONAL WETLANDS DELINEATED BY GOVE ENVIRONMENTAL SERVICES DURING OCTOBER 2023 USING THE FOLLOWING STANDARDS:
 - REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, (VERSION 2.0) JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS
 - FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 8.2, UNITED STATES DEPARTMENT OF AGRICULTURE (2018).
 - NEW ENGLAND HYDRIC SOILS TECHNICAL COMMITTEE, 2020 VERSION 4, FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION, LOWELL, MA.
 - U.S. ARMY CORPS OF ENGINEERS NATIONAL WETLAND PLANT LIST, VERSION 3.5. (2020)
 ALSO SEE SEPARATE "SITE SPECIFIC SOIL" NOTE ON THIS SHEET.
- FLOOD HAZARD ZONE: "X", PER FIRM MAP #33015C0406E, DATED 5/17/05.
- PROPER FIELD PROCEDURES WERE FOLLOWED IN ORDER TO GENERATE CONTOURS AT 2' INTERVALS. ANY MODIFICATION OF THIS INTERVAL WILL DIMINISH THE INTEGRITY OF THE DATA, AND DOUCET SURVEY WILL NOT BE RESPONSIBLE FOR ANY SUCH ALTERATION PERFORMED BY THE USER.
- UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON OBSERVED PHYSICAL EVIDENCE AND PAINT MARKS FOUND ON-SITE.
- THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES/TYPES IS SUBJECT TO NUMEROUS FIELD CONDITIONS, INCLUDING: THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS, MANHOLE CONFIGURATION, ETC.
- THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH AND IN RELATION TO THE CURRENT LEGAL DESCRIPTION, AND IS NOT AN ATTEMPT TO DETERMINE UNWRITTEN RIGHTS, DETERMINE THE EXTENT OF OWNERSHIP, OR DEFINE THE LIMITS OF TITLE.
- ALL UNDERGROUND UTILITIES (ELECTRIC, GAS, TEL. WATER, SEWER DRAIN SERVICES) ARE SHOWN IN SCHEMATIC FASHION, THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATIONS FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE AT 1-888-DIG-SAFE.
- THE PARCELS IN ZONE C-2 (HIGHWAY COMMERCIAL) AND WITHIN THE WETLAND CONSERVATION AND SHORELAND PROTECTION OVERLAY DISTRICTS.

LEGEND

- EXISTING LOT LINE
- APPROXIMATE ABUTTERS LINE
- EXISTING EASEMENT LINE
- MAJOR CONTOUR LINE
- MINOR CONTOUR LINE
- RETAINING WALL
- POST & RAIL FENCE
- GUARDRAIL
- OVERHEAD WIRE
- DRAIN LINE
- SEWER LINE
- GAS LINE
- CABLE/INTERNET LINE
- TREE LINE
- SHRUB LINE
- WETLAND BUFFER 40'
- WETLAND BUFFER 75'
- 300' SHORELAND PROTECTION DISTRICT LINE (WATERWORKS POND SETBACK)
- 150' SHORELAND SETBACK (STREAM BUFFER)
- PROTECTED SHORELAND AREA
- EDGE OF DELINEATED WETLAND
- WETLAND AREA
- SOIL LINE-SEE NOTE
- LANDSCAPED AREA
- CRUSHED STONE
- PILE
- BOUND FOUND (BND. FND.)
- DRILL HOLE FOUND (D.H.F.)
- PIPE/ROD FOUND
- 4"x4" GRANITE BOUND SET
- 5/8" REBAR W/D CAP SET
- UTILITY POLE
- UTILITY POLE & GUY WIRE

- LIGHT POLE W/ARM
- LIGHT POLE (MULTI-ARMS)
- CATCH BASIN
- FES FLARED END SECTION
- SEWER MANHOLE
- FIRE HYDRANT
- WATER GATE VALVE
- HAND HOLE
- UNIDENTIFIED UTILITY BOX
- SIGN
- SIGN (TWO POSTS)
- BOLLARD
- DECIDUOUS TREE
- DECIDUOUS BUSH
- WETLAND FLAG
- CONCRETE
- DRILL HOLE
- DASHED SINGLE WHITE LINE
- DOUBLE YELLOW LINE
- EDGE OF PAVEMENT
- GRANITE
- HIGH DENSITY POLYETHYLENE PIPE
- HEADWALL
- IRON PIPE FOUND
- NEW HAMPSHIRE HIGHWAY BOUND
- POLYVINYL CHLORIDE PIPE
- RETAINING WALL
- SLOPED GRANITE CURB
- SINGLE WHITE LINE
- TOP OF PIPE
- TYPICAL
- UNKNOWN
- INVERT I.D. CONNECTION UNKNOWN
- TREE TO BE REMOVED
- SOIL TYPE-SEE NOTE

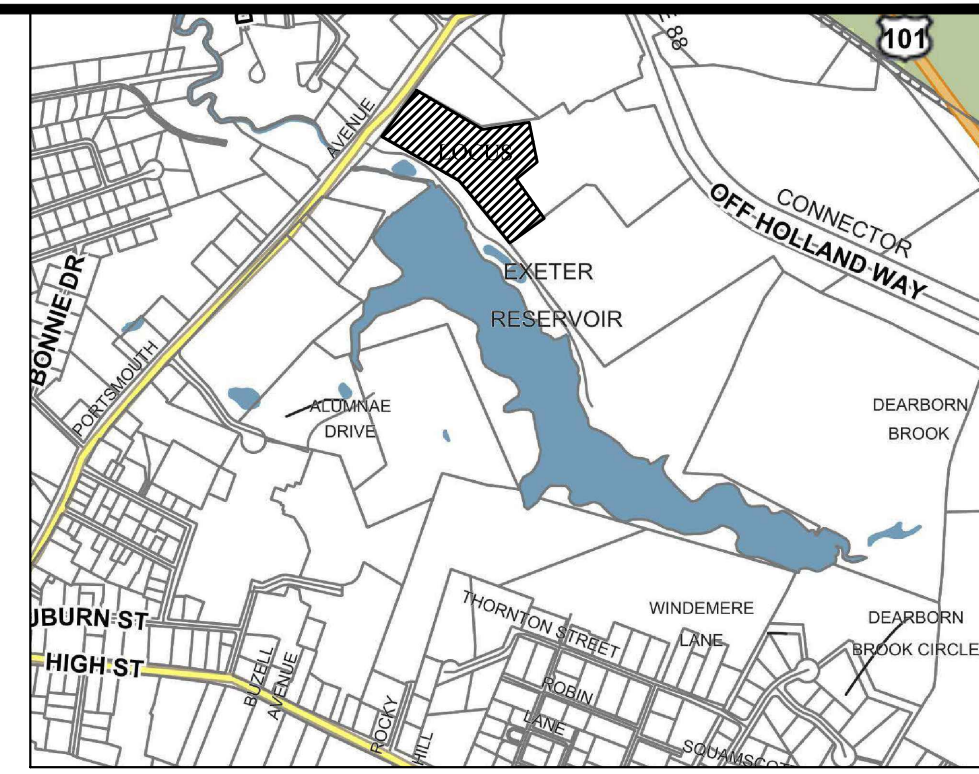
ADDITIONAL ABUTTERS ACROSS ROUTE 108:

- TAX MAP 52 LOT 53
EXETER LUMBER
120 PORTSMOUTH AVENUE,
EXETER, NH 03833
- TAX MAP 52 LOT 52
108 HEIGHTS LLC.
c/o TWO GUYS SELF STORAGE
65 POST RD.
HOOKSETT, NH 03106
- TAX MAP 52 LOT 51
SAF REALTY LLC.
c/o STEVES DINNER INC.
100 PORTSMOUTH AVENUE,
EXETER, NH 03833

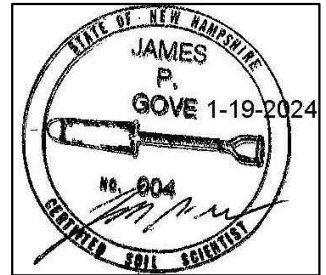
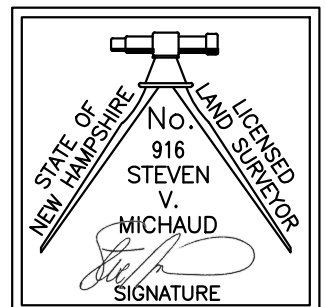
- TAX MAP 52 LOT 50
AA FIELD REALTY LLC.
98 PORTSMOUTH AVENUE,
EXETER, NH 03833
- TAX MAP 65 LOT 123
TOWN OF EXETER
10 FRONT ST.
EXETER, NH 03833
- TAX MAP 65 LOT 123-1
EXETER SPORTSMANS CLUB
PO BOX 1936
EXETER, NH 03833

REFERENCE PLANS:

- "PLAN OF LAND FOR SYLVANIA ELECTRIC PRODUCTS INC EXETER NEW HAMPSHIRE" DATED DECEMBER 1962 BY G. L. DAVIS & ASSOCIATES R.C.R.D. PLAN DRAWER II, SEC. H., PLAN #1.
- "THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY PLANS PROPOSED FEDERAL AID PROJECT STP--S153(005) N.H. PROJECT NO. 10025B NH ROUTE 108 TOWN OF EXETER COUNTY OF ROCKINGHAM" DATED 9/25/02 ON FILE AT THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
- "ALTA/NSPS LAND TITLE SURVEY FOR TIGHE & BOND OF OSRAM SYLVANIA INC. ROUTE 108 (PORTSMOUTH AVENUE), HOLLAND WAY & ROUTE 101 EXETER, NEW HAMPSHIRE" DATED OCTOBER 31, 2019 BY DOUCET SURVEY, LLC, NOT RECORDED.
- "SUBDIVISION PLAN OF OSRAM SYLVANIA INC. ROUTE 108 (PORTSMOUTH AVENUE), ROUTE 88 CONNECTOR (HOLLAND WAY) & ROUTE 101 TAX MAP 51 LOT 17 & TAX MAP 51 LOT 112 EXETER, NEW HAMPSHIRE" DATED OCTOBER 20, 2020 BY DOUCET SURVEY, LLC, R.C.R.D. PLAN D-42514.
- "CORRECTIVE LOT LINE ADJUSTMENT PLAN (SEE NOTE 11) OF TAX MAP 51 LOT 112 AND TAX MAP 51 LOT 112-1 FOR OSRAM SYLVANIA, INC. ROUTE 108 (PORTSMOUTH AVENUE) & ROUTE 88 CONNECTOR (HOLLAND WAY) EXETER, NEW HAMPSHIRE" DATED JUNE 25, 2021 BY DOUCET SURVEY, LLC, R.C.R.D. PLAN D-42853.
- "SUBDIVISION PLAN FOR 131 PORTSMOUTH AVENUE, LLC OF TAX MAP 52 LOT 112 131 PORTSMOUTH AVENUE ROUTE 108 (PORTSMOUTH AVENUE) & ROUTE 88 CONNECTOR (HOLLAND WAY) EXETER, NEW HAMPSHIRE" DATE OCTOBER 4, 2022 BY DOUCET SURVEY, R.C.R.D. PLAN D-43579.
- "STATE OF NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS PLANS OF PROPOSED FEDERAL AID PRIMARY PROJECT F018-2(1) N.H. NO. P-2428 SOUTH SIDE ROAD TOWNS OF EXETER AND STRATHAM COUNTY OF ROCKINGHAM" DATED 4-14-55 ON FILE AT THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
- "ALTA/NSPS LAND TITLE SURVEY FOR 131 PORTSMOUTH AVE, LLC" REVISED THROUGH OCTOBER 25, 2022 BY DOUCET SURVEY, INC., NOT RECORDED.
- "EASEMENT PLAN TO BENEFIT TAX MAP 51 LOT 112 AND TAX MAP 51 LOT 112-1 FOR OSRAM SYLVANIA, INC." DATED APRIL 2021 BY DOUCET SURVEY, R.C.R.D. PLAN D-42854.
- "EASEMENT PLAN TO BENEFIT TAX MAP 51 LOT 112A & TAX MAP 51 LOT 112B FOR 131 PORTSMOUTH AVE, LLC" REVISED THROUGH SEPTEMBER 14, 2022 BY DOUCET SURVEY, R.C.R.D. PLAN D-43581.



LOCATION MAP (1"=600'+-)



SITE SPECIFIC SOIL MAPPING STANDARDS (BY GOVE ENVIRONMENTAL SERVICES, INC.):

This map product is within the technical standards of the National Cooperative Soil Survey. It is a special purpose product, intended for infiltration requirements by the NH DES Alteration of Terrain Bureau. It was produced by a professional soil scientist and is not a product of the USDA Natural Resources Conservation Service. There is a report that accompanies this map. The site specific soil map was produced 1-15-2024, and was prepared by James P. Gove, CSS # 004, Gove Environmental Services, Inc. SOIL IDENTIFICATION LEGEND

Map Unit	Symbol	Map Unit Name	HISS Symbol	Hydrologic Soil Group
33		Scitico silt loam	553	C
24		Agowam fine sandy loam	211	B
500/dfcc		loamy	363	C
600/ffcc		Endoquoits loamy	563	C

SLOPE PHASE:
0-8%=B, 8-15%=C, 15-25%=D, 25%-50%=E



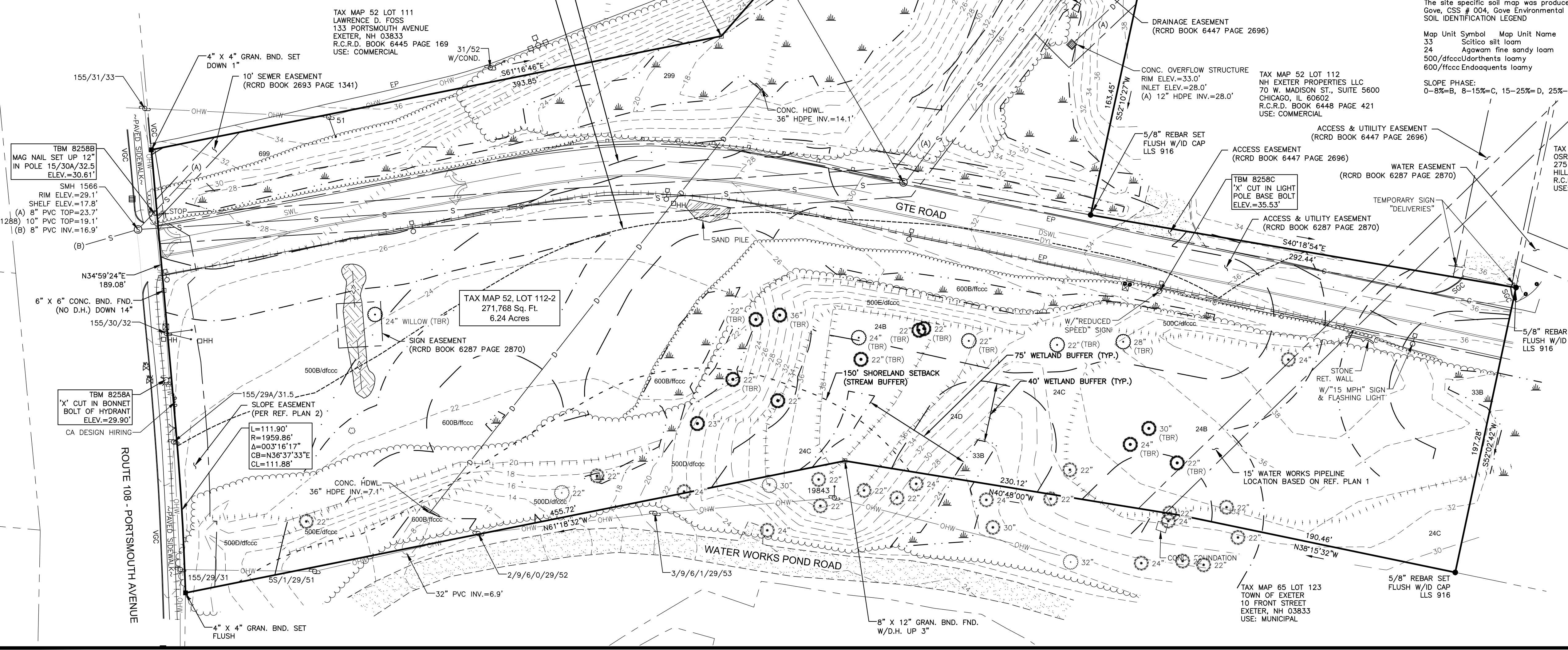
SCALE: 1 INCH = 40 FT.

EXISTING CONDITIONS PLAN FOR COMMERCIAL SITE ON TAX MAP 52, LOT 112-2 127 PORTSMOUTH AVENUE EXETER, NEW HAMPSHIRE (PLANNING BOARD CASE #23-7)

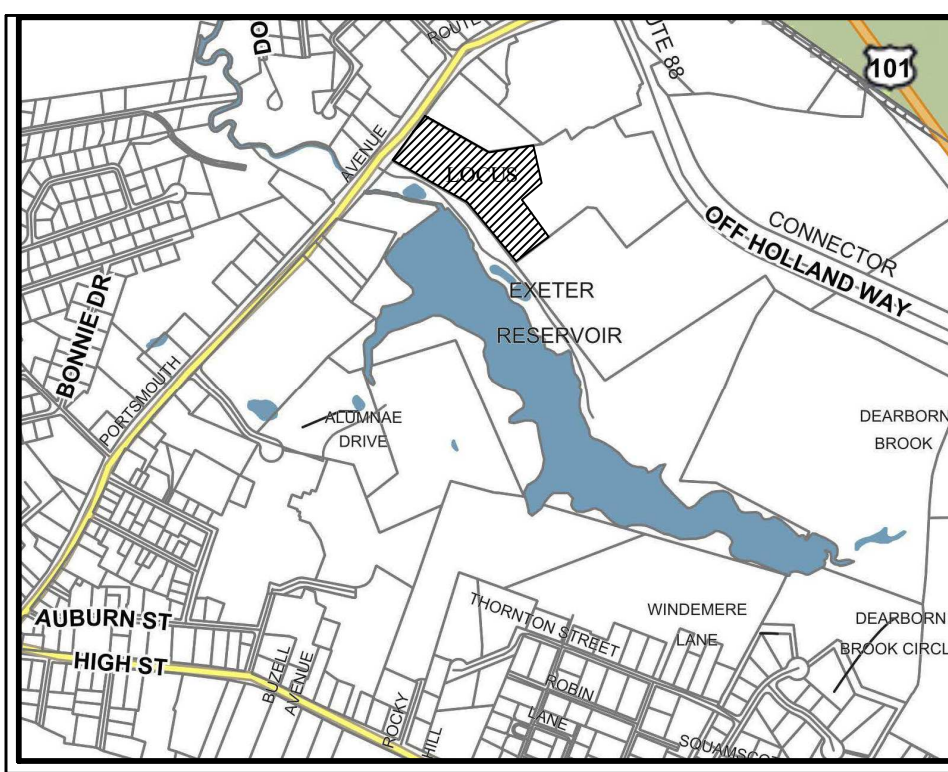
NO.	DATE	DESCRIPTION	BY
2	8/1/24	REVISIONS PER CLIENT	SVM
1	2/7/24	PER SITE PLAN CHECKLIST	SVM

DRAWN BY:	J.R.P.	DATE:	OCTOBER 13, 2023
CHECKED BY:	S.V.M.	DRAWING NO.:	8258A
JOB NO.:	8258	SHEET	1 OF 1

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FILE NAME: H:\PROJECTS\8258A\8258A.dwg DATE: 10/13/2023 10:00:00 AM USER: JRG



LOCATION MAP
1"=1500'

SITE DATA:

LOCATION: 127 PORTSMOUTH AVENUE, EXETER, NEW HAMPSHIRE
 ZONING DISTRICTS: HIGHWAY COMMERCIAL (C-2)
 WETLANDS CONSERVATION OVERLAY
 SHORELAND PROTECTION
 EXISTING USE: ACCESS ROAD & LANDSCAPED AREA
 PROPOSED USE: ACCESS ROAD, VEHICLE STORAGE/DISPLAY, & ACCESSORY USE STORAGE BUILDING

PARKING REQUIREMENTS:

MIN. PARKING SPACE SIZE: 9'x19'
 MIN. AISLE WIDTH: 22 FT (90-DEGREE PARKING)
 MIN. ADA SPACES: 2 (1 VAN ACCESSIBLE)

REQUIRED PARKING RATIO:

STORAGE/WAREHOUSE = 1 SPACE FOR EACH EMPLOYEE AT MAXIMUM SHIFT
 (TOTAL PARKING AREA SHALL NOT BE LESS THAN 25% OF THE BUILDING FLOOR AREA)
 REQUIRED = 25% OF 20,000 SF = 5,000 SF OF PARKING
 PROVIDED = 30 SPACES (30 SPACES X 9'x19' = 5,130 SF OF PARKING)
 EV SPACES = MIN. 2% = 1 SPACE WITH EV CHARGING READINESS

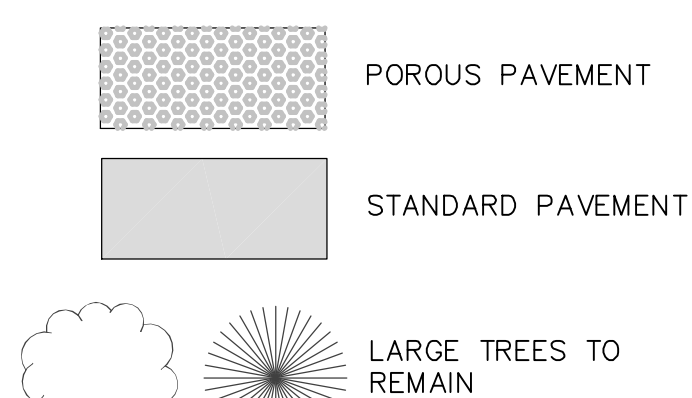
DIMENSIONAL REQUIREMENTS

MINIMUM LOT DIMENSIONS	ALLOWED/REQUIRED
LOT AREA	20,000 SF
LOT WIDTH	150 FT
LOT DEPTH	100 FT
FRONTAGE	150 FT

MINIMUM YARD SETBACKS	ALLOWED/REQUIRED
FRONT	50 FT
SIDE - ONE/BOTH	20/40 FT
REAR	50 FT

MISCELLANEOUS STANDARDS	ALLOWED/REQUIRED
MAXIMUM BUILDING HEIGHT	35 FT
MAXIMUM BUILDING COVERAGE	30 %
MINIMUM OPEN SPACE	15 %

LEGEND



TOWN NOTES

1. THE LANDOWNER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL WETLANDS REGULATIONS, INCLUDING ANY PERMITTING AND SETBACK REQUIREMENTS REQUIRED UNDER THESE REGULATIONS.
2. THE APPLICANT HAS DESIGNED THIS SITE TO SAFELY ACCOMMODATE MAXIMUM SIZE VEHICLES AND TRUCKS. (DESIGN VEHICLE IS THE EXETER LADDER TRUCK OR 35' BOX TRUCK) EITHER DELIVERING TO, OR USING THE PROPERTY.
3. ALL SNOW SHALL BE STORED IN THE AREA(S) DEPICTED ON THIS PLAN AS SNOW STORAGE AREAS. IN THE EVENT THAT THE AREA(S) APPROVED FOR SNOW STORAGE BECOME FULL, THE OWNER SHALL REASONABLY REMOVE EXCESS SNOW FROM THE SITE, AND SHALL NOT ALLOW SNOW TO BE STORED WITHIN TRAVEL AISLES.
4. ALL WASTE MATERIALS AND RECYCLABLE SHALL BE CONTAINED WITHIN THE BUILDING(S) OR APPROVED STORAGE FACILITIES AND SHALL NOT BE OTHERWISE STORED ON THE PROPERTY. REFUSE COLLECTION WILL BE BY DUMPSTER AS NEEDED.
5. ALL WATER, SEWER, ROAD (INCLUDING PARKING LOT), AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 9.5 GRADING, DRAINAGE, AND EROSION & SEDIMENT CONTROL AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF PUBLIC UTILITIES IN EXETER, NEW HAMPSHIRE.

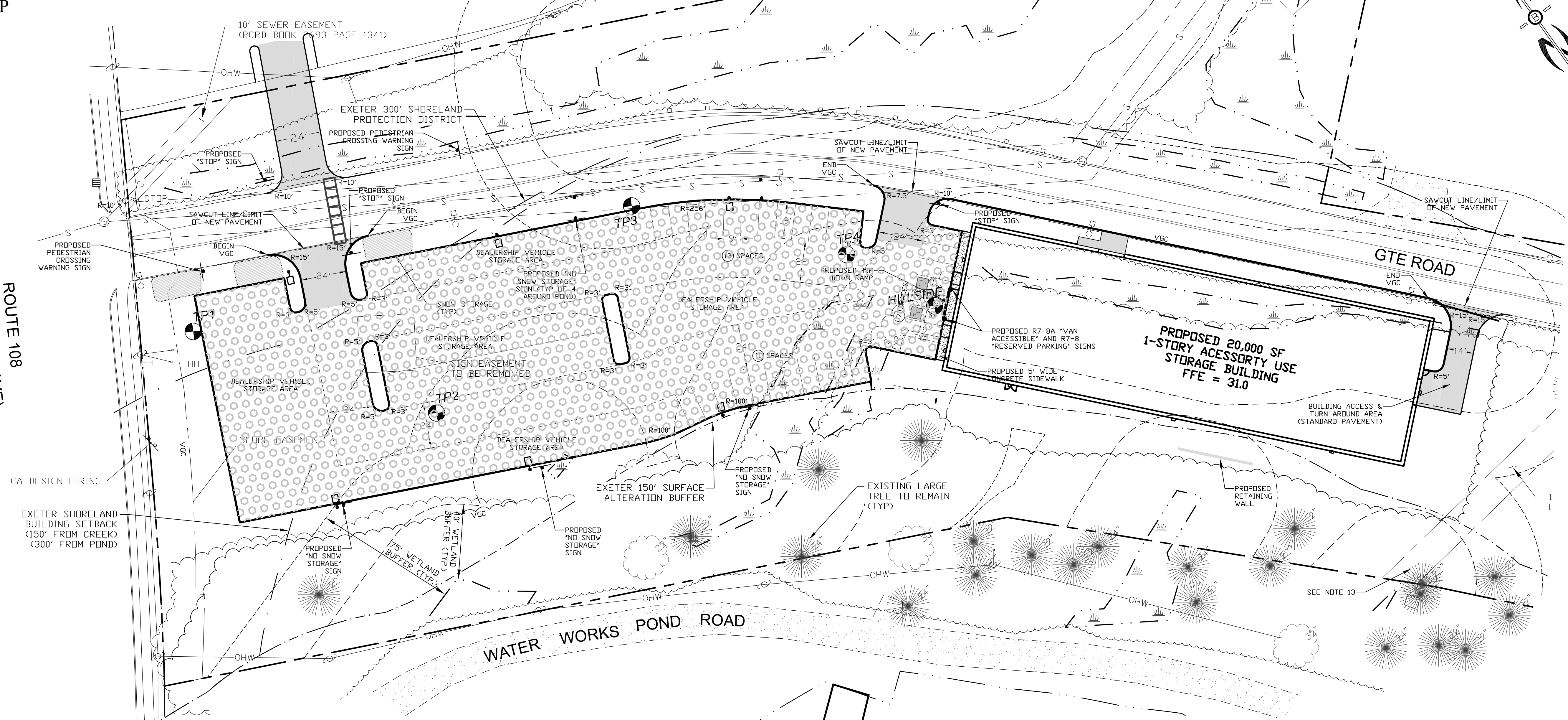
PREPARED FOR:

FOSS MOTORS
 133 PORTSMOUTH AVE.
 (NH ROUTE 108)
 EXETER, NEW HAMPSHIRE



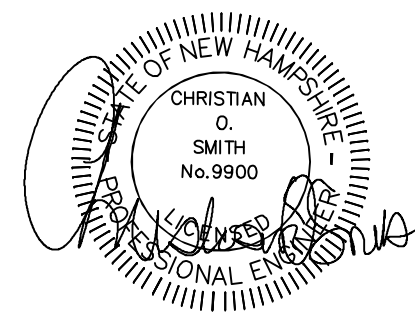
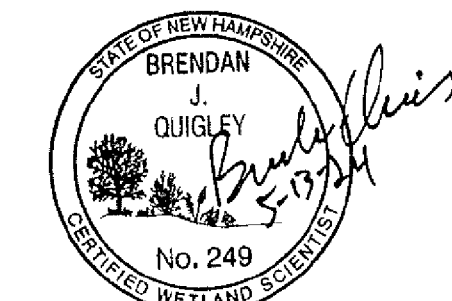
70 PORTSMOUTH AVE,
 THIRD FLOOR, SUITE 2
 STRATHAM, N.H. 03885
 PHONE: 603-583-4860,
 FAX: 603-583-4863

ROUTE 108
(PORTSMOUTH AVE)

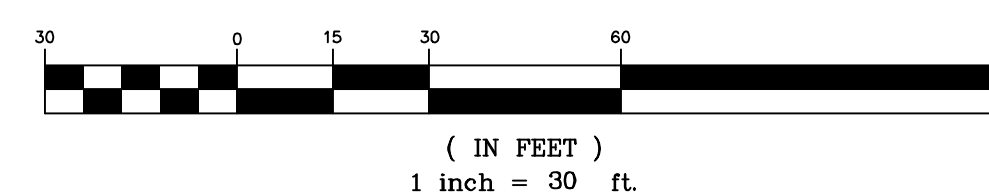


NOTES:

1. THE PURPOSE OF THIS PLAN IS TO SHOW A 22,500 SF ACCESSORY USE STORAGE BUILDING WITH ASSOCIATED PARKING SPACES AND VEHICLE STORAGE/DISPLAY AREA.
2. ALL CONSTRUCTION SHALL CONFORM TO TOWN OF EXETER STANDARDS AND REGULATIONS.
3. ALL WATER, SEWER, ROAD (INCLUDING PARKING LOT), AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 9.3 STORMWATER MANAGEMENT STANDARDS, STORMWATER MANAGEMENT PLAN, STORMWATER POLLUTION PREVENTION PLAN, AND EROSION AND SEDIMENT CONTROL STANDARDS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF PUBLIC UTILITIES IN EXETER, NEW HAMPSHIRE. SEE SECTION 9.14 ROADWAYS, ACCESS POINTS, AND FIRE LANES AND SECTION 9.13 PARKING AREAS FOR EXCEPTIONS.
4. IN ACCORDANCE WITH SITE PLAN REVIEW & SUBDIVISION REGULATIONS SECTIONS 7.15.10 AND 9.3.4 THE APPLICANT SHALL PROVIDE THE TOWN WITH THREE COPIES OF THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND ALSO ENSURE THAT ONE COPY REMAINS ON SITE.
5. ALL PROPOSED SIGNAGE SHALL CONFORM WITH THE TOWN ZONING REGULATIONS UNLESS A VARIANCE IS OTHERWISE REQUESTED.
6. TOTAL PROPOSED DISTURBANCE FOR CONSTRUCTION = 2.74 ACRES.
7. UPON COMPLETION OF CONSTRUCTION AND PRIOR TO RELEASE OF BOND, THE APPLICANT SHALL SUBMIT A LETTER TO THE TOWN, SIGNED AND STAMPED BY THE DESIGN ENGINEER, WHO MUST BE A LICENSED PROFESSIONAL ENGINEER IN NH, STATING CONSTRUCTION HAS BEEN COMPLETED IN CONFORMANCE WITH THE APPROVED PLANS.
8. UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN LOCATED FROM FIELD OBSERVATIONS AND THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. BEALS ASSOCIATES OR ANY OF THEIR EMPLOYEES TAKE NO RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES OR UTILITIES NOT SHOWN, THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND UTILITIES OR STRUCTURES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 1-888-DIG-3SAFE.
9. THIS PLAN HAS BEEN PREPARED FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS. THIS INCLUDES ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS OF THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.
10. ALL BENCHMARKS AND TOPOGRAPHY SHOULD BE FIELD VERIFIED BY THE CONTRACTOR.
11. THIS SITE IS NOT LOCATED IN THE 100 YEAR FLOOD ZONE.
12. ALL PROPOSED CURBING SHALL BE VERTICAL GRANITE.
13. WATER MAIN WITHIN THE WATER WORKS EASEMENT SHALL BE MARKED OUT PRIOR TO CONSTRUCTION AND MARKINGS MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION. WATER MAIN SHALL BE PROTECTED DURING CONSTRUCTION.
14. A SPILL RESPONSE KIT SHALL BE MAINTAINED ON SITE.
15. ALL EXCESS CONCRETE FROM SLAB POUR SHALL BE REMOVED FROM THE SITE AND DISPOSED OF ACCORDING TO LOCAL, STATE, AND FEDERAL REGULATIONS.
16. JURISDICTIONAL WETLANDS DELINEATED BY GOVE ENVIRONMENTAL SERVICES DURING OCTOBER 2023 USING THE FOLLOWING STANDARDS:
 - REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, (VERSION 2.0), JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.
 - FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 8.2, UNITED STATES DEPARTMENT OF AGRICULTURE (2018).
 - NEW ENGLAND HYDRIC SOILS TECHNICAL COMMITTEE, 2020 VERSION 4, FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION, LOWELL, MA.
 - U.S. ARMY CORPS OF ENGINEERS NATIONAL WETLAND PLANT LIST, VERSION 3.5 (2020).



GRAPHIC SCALE



REVISED PER REVIEW COMMENTS	DATE:
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REVISIONS:	DATE:

SITE PLAN

COMMERCIAL DEVELOPMENT
 ROUTE 108
 EXETER, NH
 TAX MAP 52, LOT 112.2

DATE: FEBRUARY 2024	SCALE: 1" = 30'
PROJ. NO: NH-1471	SHEET NO. 2

SITE SPECIFIC SOIL MAPPING STANDARDS:

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP. THE SITE SPECIFIC SOIL SURVEY WAS PRODUCED JANUARY 15, 2024, AND WAS PREPARED BY JAMES P. GOVE, CSS #004, GOVE ENVIRONMENTAL SERVICES, INC.

SOIL IDENTIFICATION LEGEND:

MAP UNIT SYMBOL	MAP UNIT NAME	HISS SYMBOL	HYDROLOGIC SOIL GROUP
24	AGAWAM FINE SANDY LOAM	211	B
33	SCITICO SILT LOAM	553	C
500/dfccc	UDORTHERENTS LOAMY	563	C
600/ffccc	ENDOAQUENTS LOAMY	563	C

SLOPE PHASE:
 0-8% = B, 8-15% = C, 15-25% = D, 25-50% = E, >50% = F

SOIL INFORMATION OUTSIDE OF THE MAPPED AREA WAS OBTAINED FROM USDA NATURAL RESOURCES CONSERVATION SERVICE (NRCS)

SOIL IDENTIFICATION LEGEND

MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC SOIL GROUP
388	ELDRIDGE FINE SANDY LOAM	C
299	UDORTHERENTS, SMOOTHED	C
699	URBAN LAND	C

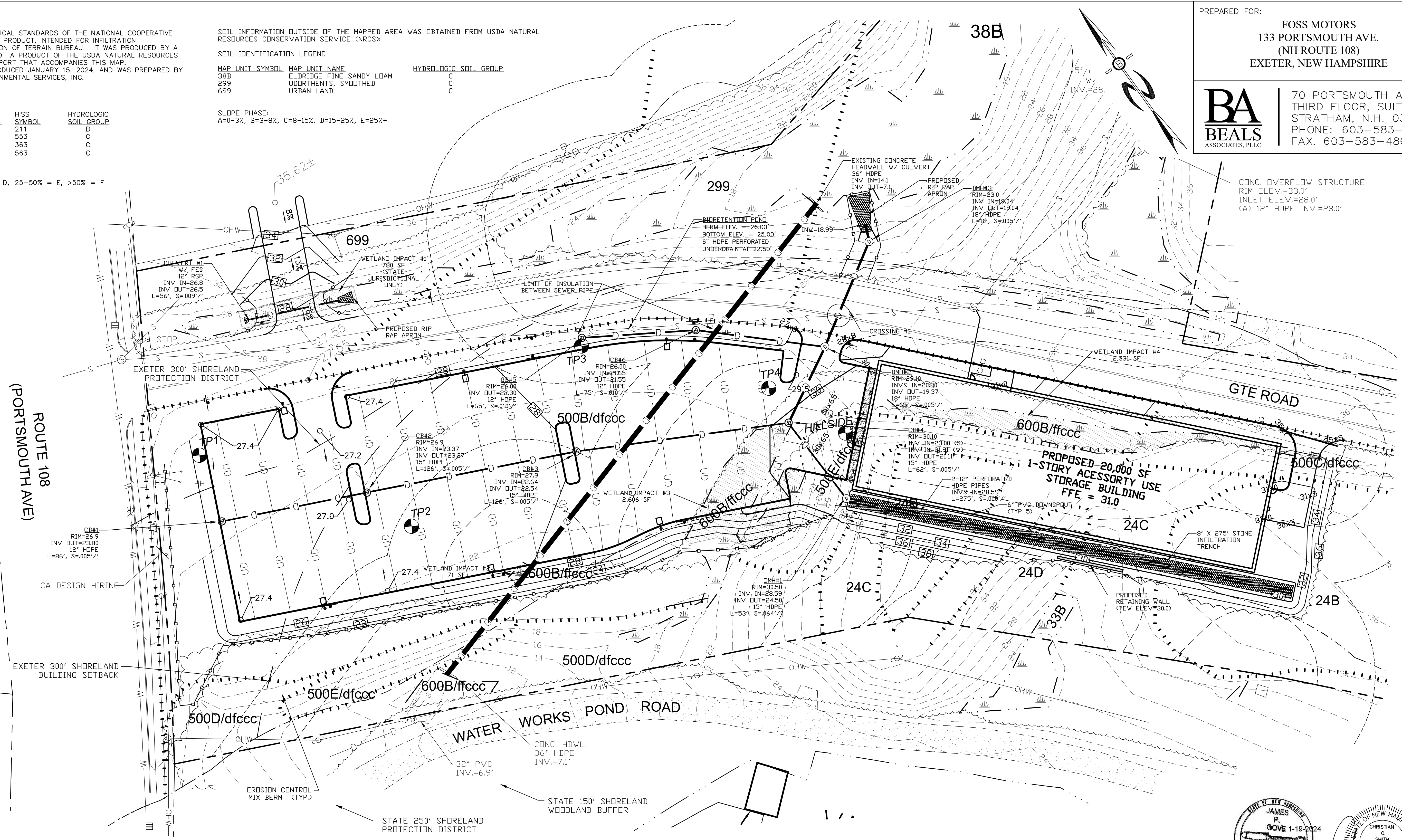
SLOPE PHASE:
 A=0-3%, B=3-8%, C=8-15%, D=15-25%, E=25%+

PREPARED FOR:

FOSS MOTORS
 133 PORTSMOUTH AVE.
 (NH ROUTE 108)
 EXETER, NEW HAMPSHIRE



70 PORTSMOUTH AVE,
 THIRD FLOOR, SUITE 2
 STRATHAM, N.H. 03885
 PHONE: 603-583-4860,
 FAX: 603-583-4863



CROSSING #1
 SEWER (10")
 INV.=21.87±
 BTM OF PIPE=21.79±
 DRAIN (18")
 TOP OF PIPE=21.45
 INV.=19.78
 SEPARATION = 0.34' = 4"±

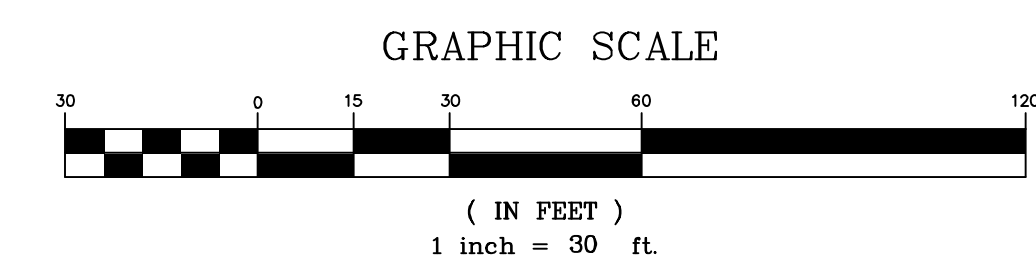


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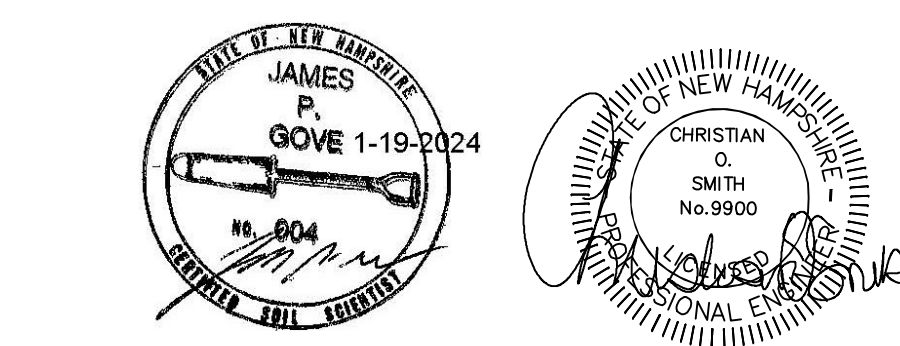
NOTES:

- CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER SO THAT EROSION AND AIR AND WATER POLLUTION WILL BE MINIMIZED.
- STRAW BALES SHALL BE ANCHORED INTO THE SOIL USING 2" X 2" STAKES DRIVEN THROUGH THE BALES AND AT LEAST 18 INCHES IN TO THE SOIL.
- SEEDING, FERTILIZING, AND MULCHING SHALL CONFORM TO THE RECOMMENDATIONS IN THE APPROPRIATE VEGETATIVE BMP.
- THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES THE CONTRACTOR SHALL TAKE PRECAUTIONS AND INSTRUCTIONS FROM THE PLANNING DEPARTMENT IN ORDER TO PREVENT, ABATE AND CONTROL THE EMISSION OF FUGITIVE DUST INCLUDING BUT NOT LIMITED TO WETTING, COVERING, SHIELDING, OR VACUUMING.
- THE NH COMMISSIONER OF AGRICULTURE PROHIBITS THE COLLECTION, POSSESSION, IMPORTATION, TRANSPORTATION, SALE, PROPAGATION, TRANSPLANTATION, OR CULTIVATION OF PLANTS BANNED BY NH LAW RSA 430:53 AND NH CODE ADMINISTRATIVE RULES AGR 3800. THE PROJECT SHALL MEET ALL REQUIREMENTS AND THE INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES.
- THE CONSTRUCTION SITE OPERATOR AND OWNER SHALL SUBMIT A NOTICE OF INTENT (NOI) TO USEPA, WASHINGTON, DC. STORMWATER NOTICE PROCESSING CENTER AT LEAST FOURTEEN DAYS PRIOR TO COMMENCEMENT OF WORK ON SITE. EPA WILL POST THE NOI AT <http://cfpub.epa.gov/npdes/stormwater/notice/notice.cfm>. AUTHORIZATION IS GRANTED UNDER THE PERMIT ONCE THE NOI IS SHOWN IN "ACTIVE STATUS".
- ALL DRAINAGE STRUCTURES AND SWALES SHALL BE BUILT AND STABILIZED PRIOR TO HAVING RUNOFF DIRECTED TO THEM.
- PRIOR TO THE START OF CONSTRUCTION, THE EXISTING 36-INCH HDPE DRAIN LINE THROUGH THE SITE SHALL BE INSPECTED TO VERIFY CONDITION. RESULTS SHALL BE PROVIDED TO THE DESIGN ENGINEER TO DETERMINE IF ISSUES NEED TO BE RESOLVED.

PERMANENT WETLAND IMPACT =	5,007 SF (TOWN)
PERMANENT WETLAND IMPACT =	5,787 SF (STATE)
TEMPORARY BUFFER IMPACT =	304 SF
PERMANENT BUFFER IMPACT =	35,530 SF
TEMPORARY SHORELAND PROTECTION IMPACT =	7,929 SF
PERMANENT SHORELAND PROTECTION IMPACT =	59,972 SF
SHORELAND PROTECTION IMPERVIOUS AREA =	42,241 SF (23.5%)



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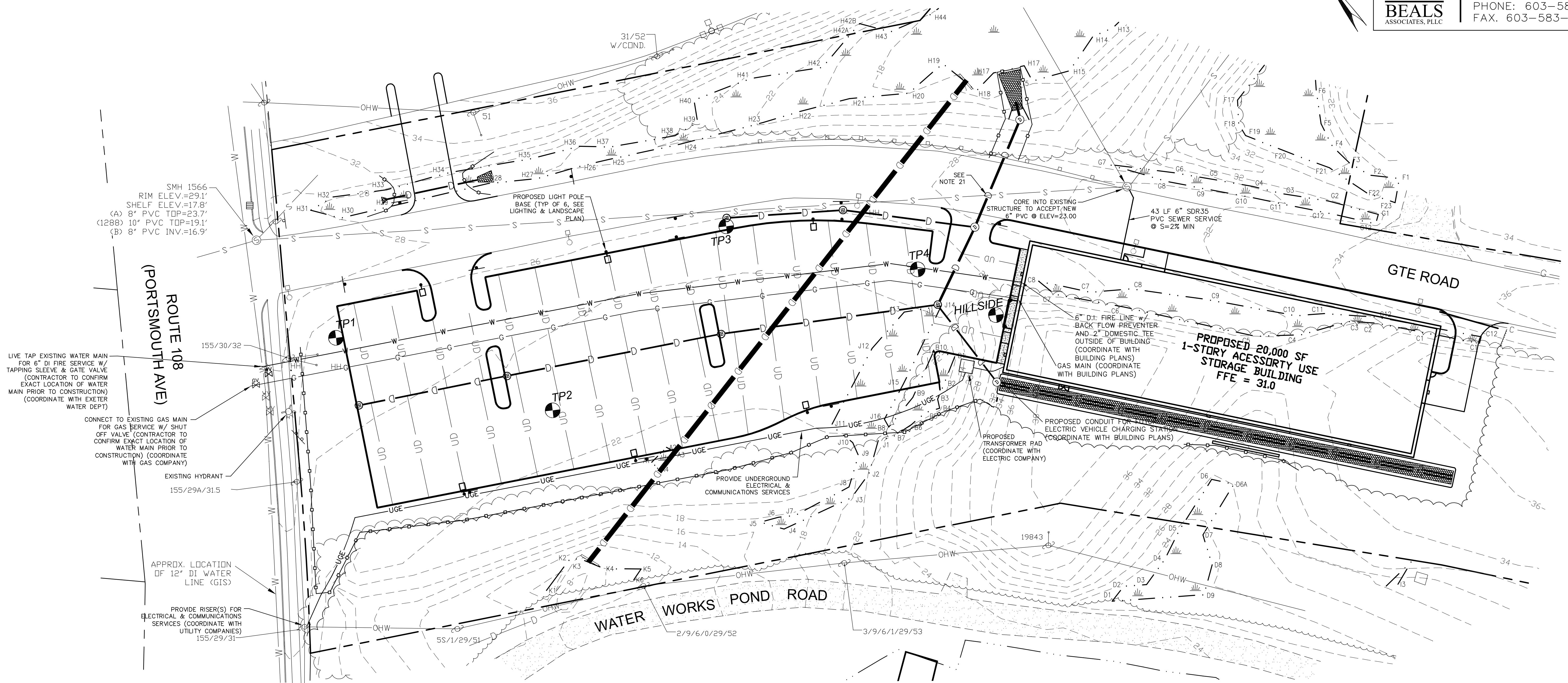
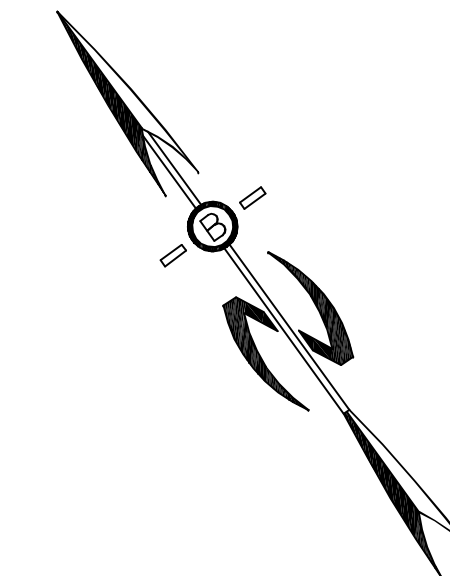
GRADING, DRAINAGE, & EROSION CONTROL PLAN

COMMERCIAL DEVELOPMENT ROUTE 108 EXETER, NH TAX MAP 52, LOT 112.2	
DATE: FEBRUARY 2024	SCALE: 1" = 30'
PROJ. NO: NH-1471	SHEET NO. 3

PREPARED FOR:
FOSS MOTORS
 133 PORTSMOUTH AVE.
 (NH ROUTE 108)
 EXETER, NEW HAMPSHIRE



70 PORTSMOUTH AVE,
 THIRD FLOOR, SUITE 2
 STRATHAM, N.H. 03885
 PHONE: 603-583-4860,
 FAX: 603-583-4863



SMH 1566
 RIM ELEV.=29.1'
 SHEL F ELEV.=17.8'
 (A) 8" PVC TDP=23.7'
 (1288) 10" PVC TDP=19.1'
 (B) 8" PVC INV.=16.9'

ROUTE 108
 (PORTSMOUTH AVE)

LIVE TAP EXISTING WATER MAIN FOR 6" DI FIRE SERVICE W/ TAPPING SLEEVE & GATE VALVE (CONTRACTOR TO CONFIRM EXACT LOCATION OF WATER MAIN PRIOR TO CONSTRUCTION) (COORDINATE WITH EXETER WATER DEPT)

CONNECT TO EXISTING GAS MAIN FOR GAS SERVICE W/ SHUT OFF VALVE (CONTRACTOR TO CONFIRM EXACT LOCATION OF WATER MAIN PRIOR TO CONSTRUCTION) (COORDINATE WITH GAS COMPANY)

EXISTING HYDRANT
 155/29A/31.5

APPROX. LOCATION OF 12" DI WATER LINE (GIS)

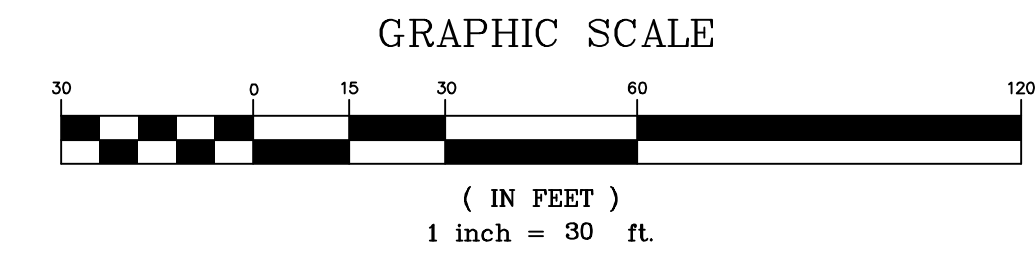
PROVIDE RISER(S) FOR ELECTRICAL & COMMUNICATIONS SERVICES (COORDINATE WITH UTILITY COMPANIES)
 155/29/31

UTILITY NOTES:

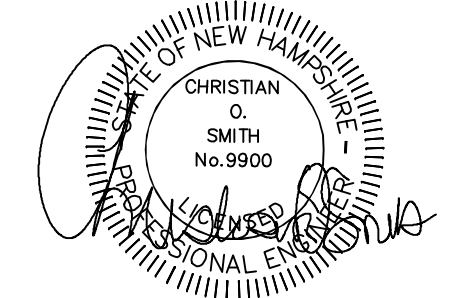
- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES, AND BONDS. THE CONTRACTOR SHALL PROVIDE NOTICE TO ALL COMPANIES AND LOCAL AUTHORITIES OWNING OR HAVING A JURISDICTION OVER UTILITIES RUNNING TO, THROUGH, OR ACROSS PROJECT AREAS PRIOR TO DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
- THE SPECIFICATIONS FOR PROPOSED PRIVATE UTILITY SERVICES SHALL BE TO THE STANDARDS AND REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES FOR PROPER UTILITY CROSSING REQUIREMENTS PRIOR TO CONSTRUCTION.
- PRIOR TO THE PRE-CONSTRUCTION MEETING UGE&T PLANS FROM THE UTILITY COMPANIES NEED TO BE REDRAWN ON THIS SHEET. ADDITIONALLY THE CONTRACTOR NEEDS TO HAVE A COMPLETED SWPPP. A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH THE OWNER, ENGINEER, ARCHITECT, CONTRACTOR, LOCAL OFFICIALS, AND ALL UTILITY COMPANIES (PUBLIC AND PRIVATE) PRIOR TO START OF CONSTRUCTION.
- ALL CONSTRUCTION SHALL CONFORM TO EXETER STANDARDS AND REGULATIONS, UNLESS OTHERWISE SPECIFIED. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR (OSHA) RULES AND REGULATIONS. BUILDINGS ARE TO BE SERVICED BY UNDERGROUND UTILITIES.
- THE CONTRACTOR IS TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITY STUBS PRIOR TO CONSTRUCTION AND DISCONNECT ALL EXISTING SERVICE CONNECTIONS AT THEIR RESPECTIVE MAINS (IF REQUIRED) IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANY'S STANDARDS AND SPECIFICATIONS.
- WATER LINE SHALL BE INSTALLED UNDER ALL UTILITY LINES WITH A MINIMUM OF 18" OF VERTICAL CLEARANCE BETWEEN UTILITIES AT CROSSINGS.
- AN AS-BUILT PLAN IS TO BE PREPARED AND SUBMITTED TO DEPARTMENT OF PUBLIC WORKS IN DIGITAL (DWG AND .PDF) AND MYLAR FORMATS.
- THE CONTRACTOR IS RESPONSIBLE FOR PAYMENT OF ALL CONNECTION FEES.
- SANITARY SEWER FLOW CALCULATIONS:
 FACTORY/WAREHOUSE - 10 GPD/PERSON X 10 PEOPLE
 ESTIMATED FLOW AT 10 GPD/PERSON = 100 GPD.
- ALL WATER AND SANITARY LEADS TO BUILDING SHALL END 5' OUTSIDE THE BUILDING LIMITS AS SHOWN ON PLANS AND SHALL BE PROVIDED WITH A TEMPORARY CAP AND WITNESS AT END.
- THRUST BLOCKS SHALL BE PROVIDED AT ALL WATER LINE BENDS, TEES, AND MECHANICAL JOINTS.
- CONTRACTOR SHALL MINIMIZE DISRUPTIONS TO EXISTING WATER SERVICES AND ALL REQUIREMENTS OF EXETER WATER DEPARTMENT SHALL BE FOLLOWED REGARDING NOTIFICATION OF INTERRUPTION OF SERVICE (MIN 48 HOURS). TEE INSTALLATION MAY NEED TO BE CONDUCTED AT NIGHT AS DIRECTED BY EXETER WATER DEPT.
- WATER VALVES ARE TO BE OPERATED ONLY BY MUNICIPAL STAFF.
- THE INSTALLATION OF SMOKE, HEAT, FIRE, OR CARBON MONOXIDE ALARMS OR SYSTEMS SHALL COMPLY WITH NFPA 72 REQUIREMENTS.
- ALL SEWER SERVICE BENDS SHALL HAVE CLEANOUTS INSTALLED.
- ALL WATER, SEWER, ROAD (INCLUDING PARKING LOT), AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 9.2 STORMWATER MANAGEMENT STANDARDS, STORMWATER MANAGEMENT PLAN, STORMWATER POLLUTION PREVENTION PLAN, AND EROSION AND SEDIMENT CONTROL STANDARDS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF PUBLIC UTILITIES IN EXETER, NEW HAMPSHIRE. SEE SECTION 9.14 ROADWAYS, ACCESS POINTS, AND FIRE LANES AND SECTION 9.13 PARKING AREAS FOR EXCEPTIONS.
- THE CONTRACTOR MUST OBTAIN A VALID UTILITY PIPE INSTALLER'S LICENSE AND THE JOB SUPERVISOR OR FOREMAN MUST BE CERTIFIED BY THE TOWN PRIOR TO WORKING ON ANY WATER, SEWER, OR DRAINAGE PIPES THAT ARE IN A TOWN STREET OR RIGHT OF WAY, OR THAT WILL CONNECT OR MAY BE CONNECTED TO A TOWN WATER, SEWER, OR DRAINAGE SYSTEM. A LICENSED SUPERVISOR OR FOREMAN MUST BE PRESENT AT THE JOB SITE AT ALL TIMES DURING CONSTRUCTION OF THESE UTILITIES.
- THE DEVELOPER SHALL COORDINATE WITH THE ELECTRIC COMPANY TO ENSURE ANY TREE PLANTINGS ALONG MAIN STREET WILL NOT CONFLICT WITH THE EXISTING OVERHEAD WIRES.
- THE DEVELOPER SHALL COORDINATE WITH THE ELECTRIC COMPANY TO CONFIRM A DROP POLE ON THE PROPERTY IS NOT REQUIRED.
- WHERE PROPOSED 18" DRAIN LINE PASSES UNDER EXISTING 10" SEWER LINE IN GRE ROAD, CARE SHALL BE TAKEN TO ENSURE PROPER COMPACTATION. AT CROSSING, DRAIN LINE JOINTS SHALL BE LOCATED AS FAR FROM THE SEWER CROSSING POINT AS POSSIBLE.



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UTILITY PLAN

COMMERCIAL DEVELOPMENT
 ROUTE 108
 EXETER, NH
 TAX MAP 52, LOT 112.2

DATE: FEBRUARY 2024	SCALE: 1" = 30'
PROJ. NO: NH-1471	SHEET NO. 4

LANDSCAPING NOTES:

1. NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
2. A 4-INCH DEEP SHREDDED PINE BARK SHALL BE INSTALLED UNDER ALL SHRUBS, AND IN ALL PLANTING BEDS, AS DIRECTED BY OWNER.
3. ALL TREES SHALL BE BAILED AND BURLAPPED, UNLESS OTHERWISE NOTED, OR APPROVED BY THE OWNER.
4. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.
5. LOAM AND SEED ALL AREAS NOT OTHERWISE NOTED.
6. DO NOT INSTALL LOAM IN AREAS OF EXISTING TREES TO REMAIN.
7. THE LANDSCAPING OF THE SITE DEPICTED ON THIS PLAN IS INTEGRAL TO THE APPROVAL BY THE EXETER PLANNING BOARD AND SHALL BE REASONABLY MAINTAINED AND WHEN DEAD OR REMOVED, MUST BE REASONABLY REPLACED.
8. AFTER 1 YEAR, FERTILIZER MAY NOT BE APPLIED WITHIN 100 FEET OF WATERWORKS POND OR WHEELWRIGHT CREEK. BEYOND 100 FEET, FERTILIZER MUST BE APPLIED PER BEST MANAGEMENT PRACTICES, MUST CONTAIN A MINIMUM OF 50% SLOW RELEASE NITROGEN, MUST BE PHOSPHOROUS FREE (UNLESS SOIL TEST INDICATED A DEFICIENCY WHICH WOULD ALLOW UP TO 2% PHOSPHORUS), AND THE APPLICATION RATE MAY NOT EXCEED 0.5 POUNDS OF TOTAL NITROGEN PER 1,000 SF, WITH AN ANNUAL MAXIMUM APPLICATION OF 1.5 POUNDS OF NITROGEN PER 1,000 SF.

PLANT SCHEDULE

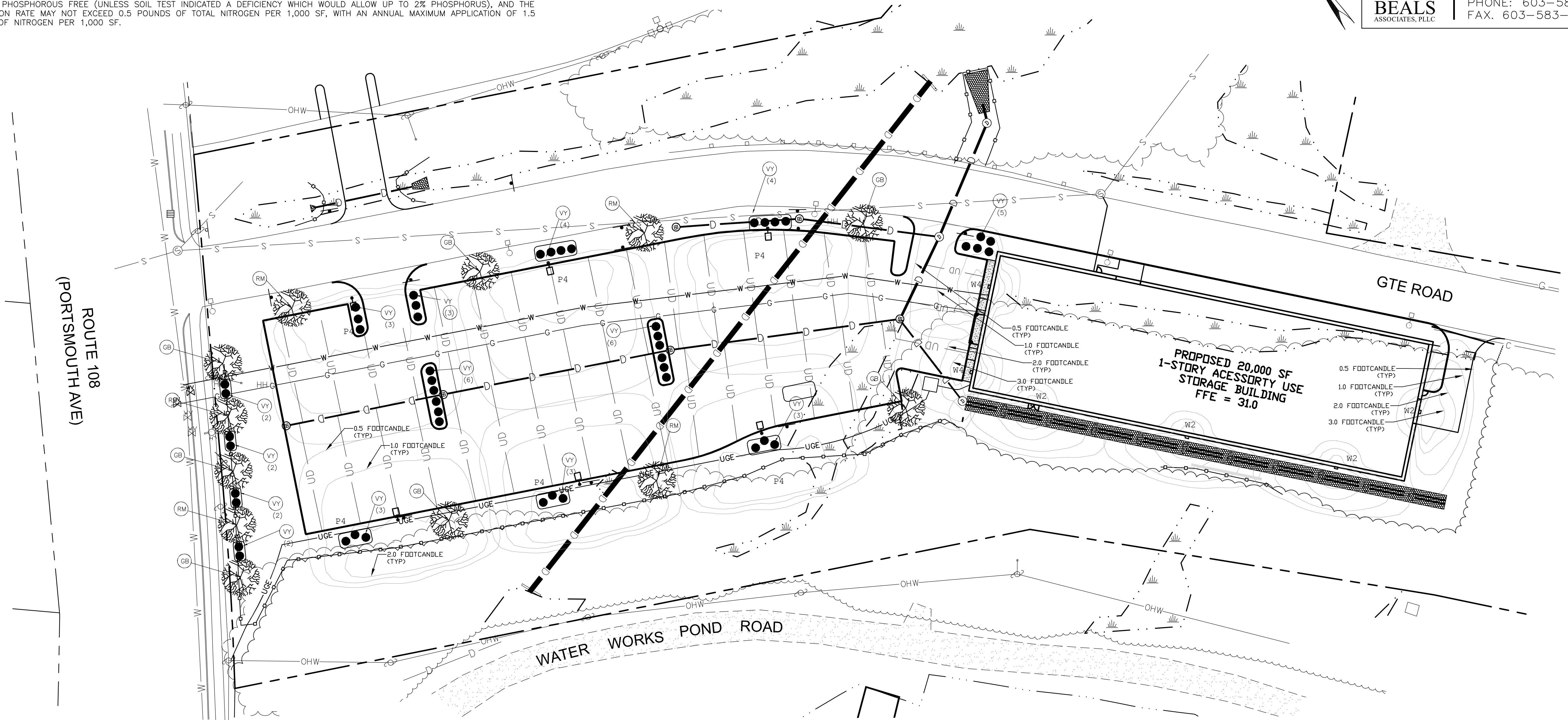
QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE
5	GB	<i>Betula populifolia</i>	Gray Birch	2"- 2 1/2" Cal.
4	RM	<i>Acer rubrum</i>	Red Maple	2"- 2 1/2" Cal.
17	VY	<i>Taxus Vermeulen</i>	Vermeulen Yew	3'-4'

PREPARED FOR:

FOSS MOTORS
133 PORTSMOUTH AVE.
(NH ROUTE 108)
EXETER, NEW HAMPSHIRE



70 PORTSMOUTH AVE,
THIRD FLOOR, SUITE 2
STRATHAM, N.H. 03885
PHONE: 603-583-4860,
FAX: 603-583-4863



Symbol	Qty	Label	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts
P4	6	P4	COOPER: GAIN-SA3B-730-U-S14-CXX-HSS	MOUNTED ON 25' VALMONT POLE: DS330-400Q250-D1-FP-COOPER CXX-FBC-AB	0.900	12725	121	726
W2	4	W2	COOPER: GWC-SA1B-730-U-T2-CXX	WALL MTD 14" AFG	0.900	5453	44	176
W4	2	W4	COOPER: GWC-SA1C-730-U-T4FT-CXX	WALL MTD 14" AFG	0.900	6920	59	118



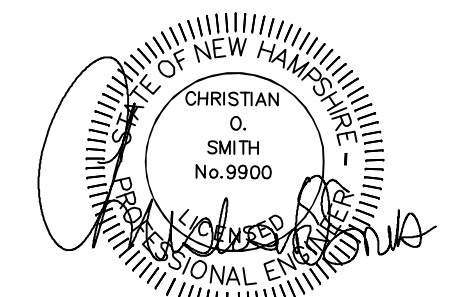
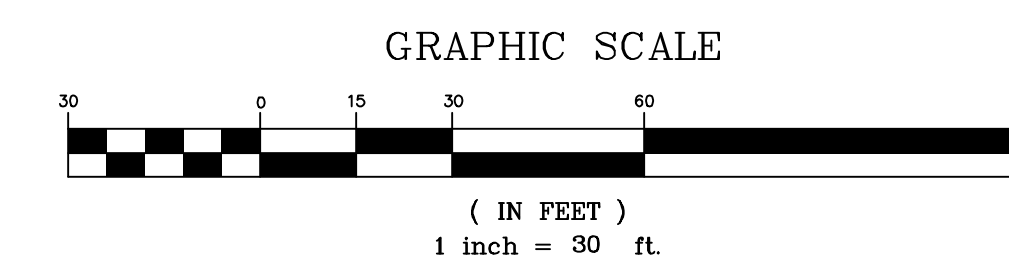
MCGRAW-EDISON GWC GALLEON
WALL MOUNTED
14-FOOT MOUNTING HEIGHT

MCGRAW-EDISON GAIN GALLEON II
POLE MOUNTED
25-FOOT MOUNTING HEIGHT

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
ENTIRE AREA	Illuminance	Fc	0.31	4.6	0.0	N.A.	N.A.
PARKING LOT	Illuminance	Fc	1.50	3.7	0.5	3.00	7.40

LIGHTING NOTES:

1. ALL OUTDOOR LIGHTING SHALL BE SO DIRECTED & SHIELDED THAT NO GLARE WILL SPILL OUT ABUTTING PROPERTIES, PROPERTIES.
2. AFTER 10:00 PM ONLY THAT AMOUNT OF LIGHT NECESSARY FOR THE SECURITY OF THE PREMISES SHALL BE PERMITTED.
3. ALL LIGHTING SHALL BE DOWNCAST SHIELDING TYPE AND DARK SKY COMPLIANT.
4. LIGHTING DESIGN PROVIDED BY CHARRON/REFLEX LIGHTING.

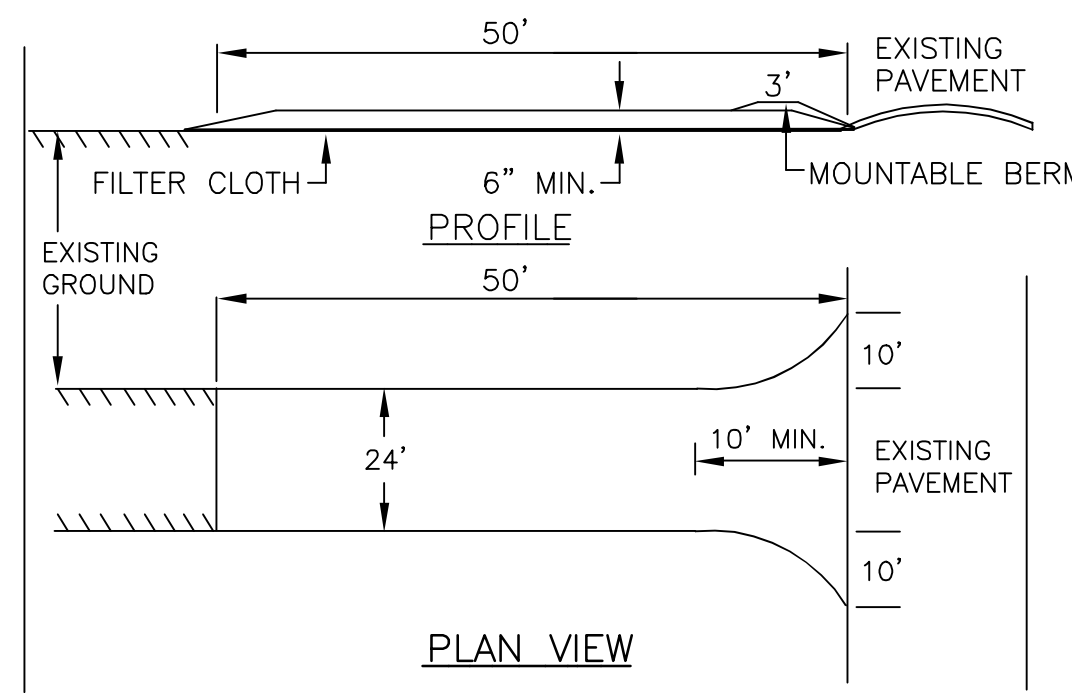
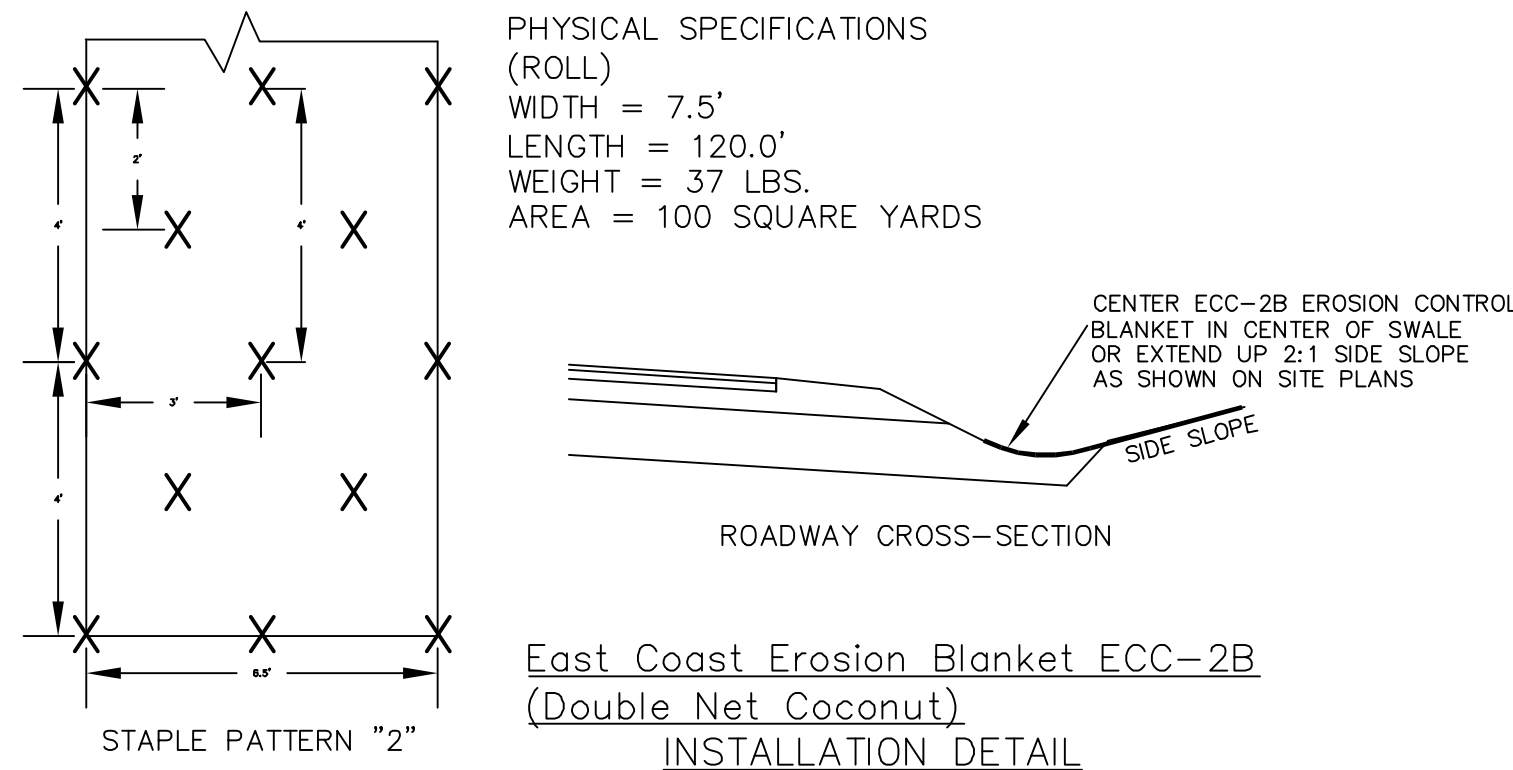


LIGHTING & LANDSCAPE PLAN

COMMERCIAL DEVELOPMENT
ROUTE 108
EXETER, NH
TAX MAP 52, LOT 112.2

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DATE: FEBRUARY 2024	SCALE: 1" = 30'
PROJ. NO: NH-1471	SHEET NO. 5



- STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 3 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
- THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
- THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
- THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICH EVER IS GREATER.
- 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.
- 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.
- 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 CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT, ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.

STABILIZED CONSTRUCTION ENTRANCE

WINTER MAINTENANCE

- ALL DISTURBED AREAS THAT DO NOT HAVE AT LEAST 85% VEGETATIVE COVERAGE PRIOR TO OCTOBER 15TH, SHALL BE STABILIZED BY APPLYING MULCH AT A RATE OF 3-4 TONS PER ACRE. ALL SIDE SLOPES, STEEPER THAN 4:1, THAT ARE NOT DIRECTED TO SWALES OR DETENTION BASINS, SHALL BE LINED WITH BIODEGRADABLE/PHOTODEGRADABLE "JUTE MATTING" (EXCELSIOR'S CURLEX II OR EQUAL). ALL OTHER SLOPES SHALL BE MULCHED AND TACKED AT A RATE OF 3-4 TONS PER ACRE. THE APPLICATION OF MULCH AND/OR JUTE MATTING SHALL NOT OCCUR OVER EXISTING SNOW COVER. IF THE SITE IS ACTIVE AFTER OCTOBER 15TH, ANY SNOW THAT ACCUMULATES ON DISTURBED AREAS SHALL BE REMOVED. PRIOR TO SPRING THAW ALL AREAS WILL BE STABILIZED, AS DIRECTED ABOVE.
- ALL SWALES THAT DO NOT HAVE FULLY ESTABLISHED VEGETATION SHALL BE EITHER LINED WITH TEMPORARY JUTE MATTING OR TEMPORARY STONE CHECK DAMS (APPROPRIATELY SPACED). STONE CHECK DAMS WILL BE MAINTAINED THROUGHOUT THE WINTER MONTHS. IF THE SWALES ARE TO BE MATTED WITH PERMANENT LINERS OR RIPRAP WITH ENGINEERING FABRIC, THIS SHALL BE COMPLETED PRIOR TO WINTER SHUTDOWN OR AS SOON AS THEY ARE PROPERLY GRADED AND SHAPED.
- PRIOR TO OCT. 15TH ALL ROADWAY AND PARKING AREAS SHALL BE BROUGHT UP TO AND THROUGH THE BANK RUN GRAVEL APPLICATION. IF THESE AREAS' ELEVATIONS ARE PROPOSED TO REMAIN BELOW THE PROPOSED SUBGRADE ELEVATION, THE SUBGRADE MATERIAL SHALL BE ROUGHLY CROWNED AND A 3" LAYER OF CRUSHED GRAVEL SHALL BE PLACED AND COMPACTED. THIS WILL ALLOW THE SUBGRADE TO SHED RUNOFF AND WILL REDUCE ROADWAY EROSION. THIS CRUSHED GRAVEL DOES NOT HAVE TO CONFORM TO NH DOT 304.3, BUT SHALL HAVE BETWEEN 15-25% PASSING THE #200 SIEVE AND THE LARGEST STONE SIZE SHALL BE 2". IF THE SITE IS ACTIVE AFTER NOVEMBER 15TH, ANY ACCUMULATED SNOW SHALL BE REMOVED FROM ALL ROADWAY AND PARKING AREAS.
- AFTER OCTOBER 15TH, THE END OF NEW HAMPSHIRE'S AVERAGE GROWING SEASON, NO ADDITIONAL LOAM SHALL BE SPREAD ON SIDE SLOPES AND SWALES. THE STOCKPILES THAT WILL BE LEFT UNDISTURBED UNTIL SPRING SHALL BE SEEDED BY THIS DATE. AFTER OCTOBER 15TH, ANY NEW OR DISTURBED PILES SHALL BE MULCHED AT A RATE OF 3-4 TONS PER ACRE. ALL STOCKPILES THAT WILL REMAIN THROUGHOUT THE WINTER SHALL BE SURROUNDED WITH SILT FENCING.

SEEDING SPECIFICATIONS

- GRADING AND SHAPING
 - SLOPES SHALL NOT BE STEEPER THAN 2.1:3.1 SLOPES OR FLATTER ARE PREFERRED. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
- SEEDBED PREPARATION
 - SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
 - STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.
- ESTABLISHING A STAND
 - LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. REFER TO LIGHTING & LANDSCAPE PLAN FOR FERTILIZER REQUIREMENTS.
 - SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.
 - A NEW ENGLAND NATIVE SEED MIXTURE SHALL BE USED. REFER TO MANUFACTURER'S SPECIFICATIONS FOR RATES OF SEEDING.
 - WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 10 TO SEPTEMBER 1.
- MULCH
 - HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.
 - MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING. HAY OR STRAW MULCH SHALL BE PLACED AT A RATE OF 90 LBS PER 1000 SQ. FT.
- MAINTENANCE TO ESTABLISH A STAND
 - PLANTED AREA SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.
 - FERTILIZATION NEEDS SHOULD BE DETERMINED BY ONSITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIAL TAKE 2 TO 3 YEARS TO BECOME ESTABLISHED.
 - IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, OCCASIONAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

** WITHIN 50 FEET DISTURBANCE TO ANY WETLAND, A DOUBLE ROW OF EROSION BARRIER (SILT FENCE, SILT SOCK, OR MULCH BERM) SHALL BE INSTALLED.

TEMPORARY EROSION CONTROL MEASURES

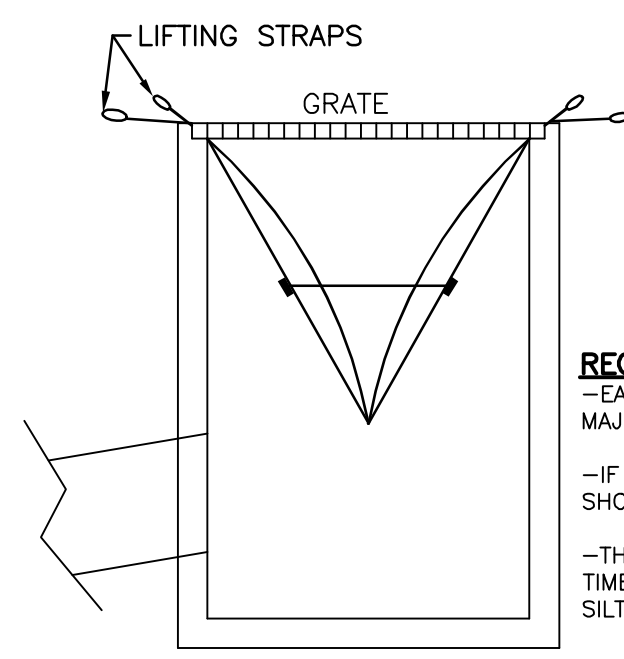
- THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT NO MORE THAN 5 ACRES OF LAND SHALL BE EXPOSED BEFORE DISTURBED AREAS ARE STABILIZED.
- EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND AT LOCATIONS AS REQUIRED OR DIRECTED BY THE ENGINEER. ALL DISTURBED AREAS SHALL BE RETURNED TO ORIGINAL GRADES AND ELEVATIONS.
- DISTURBED AREAS SHALL BE LOAMED WITH A MINIMUM OF 4" OF LOAM AND SEEDED WITH NOT LESS THAN 1.10 POUNDS OF SEED PER 1000 SQUARE FEET OF AREA. (48 POUNDS PER ACRE) SEE SEED SPECIFICATIONS THIS SHEET.
- SILT FENCES AND OTHER EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY RAIN EVENT GREATER THAN 0.25" DURING THE LIFE OF THE PROJECT. ALL DAMAGED AREAS SHALL BE REPAIRED, SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED OF.
- AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED AND THE AREA DISTURBED BY THE REMOVAL SMOOTHED AND RE-VEGETATED.
- AREAS MUST BE SEEDED AND MULCHED WITHIN 3 DAYS OF FINAL GRADING, PERMANENTLY STABILIZED WITHIN 15 DAYS OF FINAL GRADING, OR TEMPORARILY STABILIZED WITHIN 30 DAYS OF INITIAL DISTURBANCE OF SOIL.
- 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 INCHES OF NON-EROSIVE MATERIAL SUCH AS RIPRAP HAS BEEN INSTALLED.
 - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

CONSTRUCTION SPECIFICATIONS

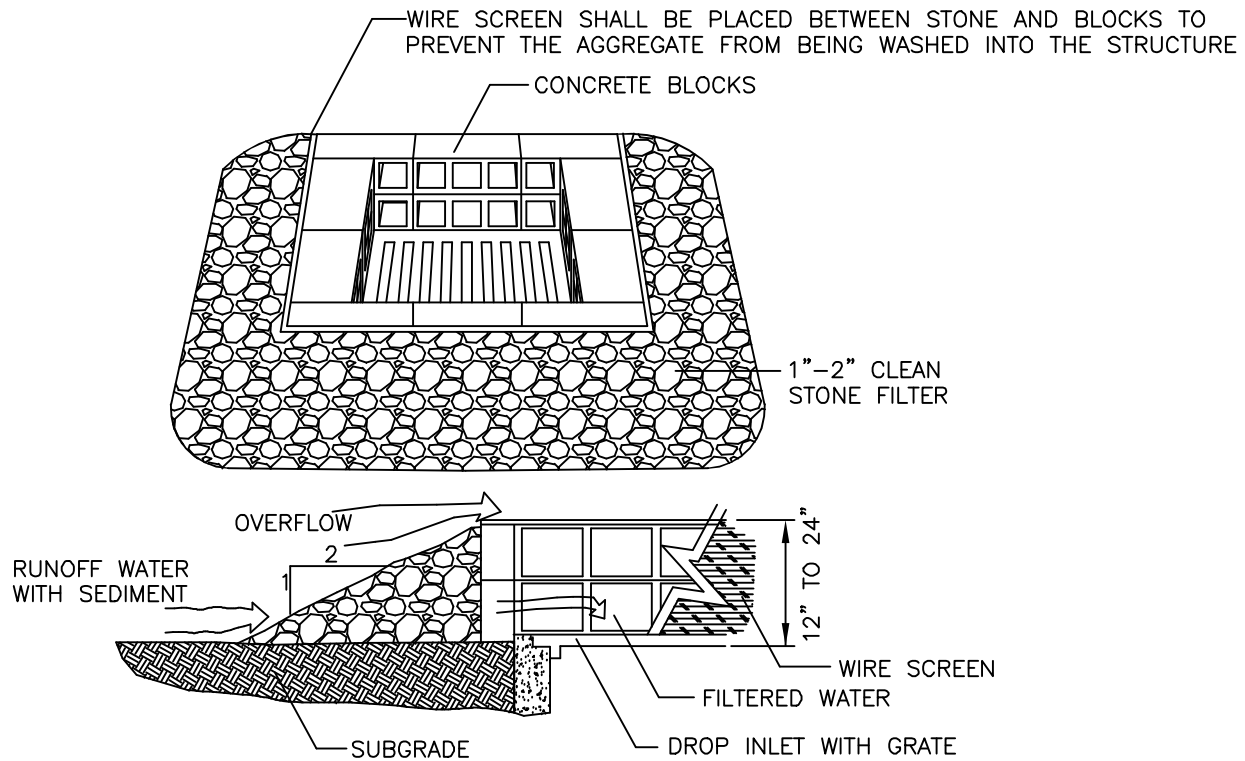
- STRUCTURES SHALL BE INSTALLED ACCORDING TO THE DIMENSIONS SHOWN ON THE PLANS AT THE APPROPRIATE SPACING.
- CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER SO THAT EROSION AND AIR AND WATER POLLUTION WILL BE MINIMIZED.
- WHEN TIMBER STRUCTURES ARE USED, THE TIMBER SHALL EXTEND AT LEAST 18" INTO THE SOIL.
- STRAW BALES SHALL BE ANCHORED INTO THE SOIL USING 2" X 2" STAKES DRIVEN THROUGH THE BALES AND AT LEAST 18 INCHES IN TO THE SOIL.
- SEEDING, FERTILIZING, AND MULCHING SHALL CONFORM TO THE RECOMMENDATIONS IN THE APPROPRIATED VEGETATIVE BMP.
- STRUCTURES SHALL BE REMOVED FROM THE CHANNEL WHEN THEIR USEFUL LIFE HAS BEEN COMPLETED.
- THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES THE CONTRACTOR SHALL TAKE PRECAUTIONS AND INSTRUCTIONS FROM THE PLANNING DEPARTMENT IN ORDER TO PREVENT, ABATE AND CONTROL THE EMISSION OF FUGITIVE DUST INCLUDING BUT NOT LIMITED TO WETTING, COVERING, SHIELDING, OR VACUUMING.
- THE NH COMMISSIONER OF AGRICULTURE PROHIBITS THE COLLECTION, POSSESSION, IMPORTATION, TRANSPORTATION, SALE, PROPAGATION, TRANSPLANTATION, OR CULTIVATION OF PLANTS BANNED BY NH LAW RSA 430:53 AND NH CODE ADMINISTRATIVE RULES AGR 3800. THE PROJECT SHALL MEET ALL REQUIREMENTS AND THE INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES
- THE CONSTRUCTION SITE OPERATOR AND OWNER SHALL SUBMIT A NOTICE OF INTENT (NOI) TO USEPA, WASHINGTON, DC, STORMWATER NOTICE PROCESSING CENTER AT LEAST FOURTEEN DAYS PRIOR TO COMMENCEMENT OF WORK ON SITE. EPA WILL POST THE NOI AT <http://cfpubl.epa.gov/npdes/stormwater/noi/noisearch.cfm>. AUTHORIZATION IS GRANTED UNDER THE PERMIT ONCE THE NOI IS SHOWN IN "ACTIVE STATUS".

CONSTRUCTION SEQUENCE

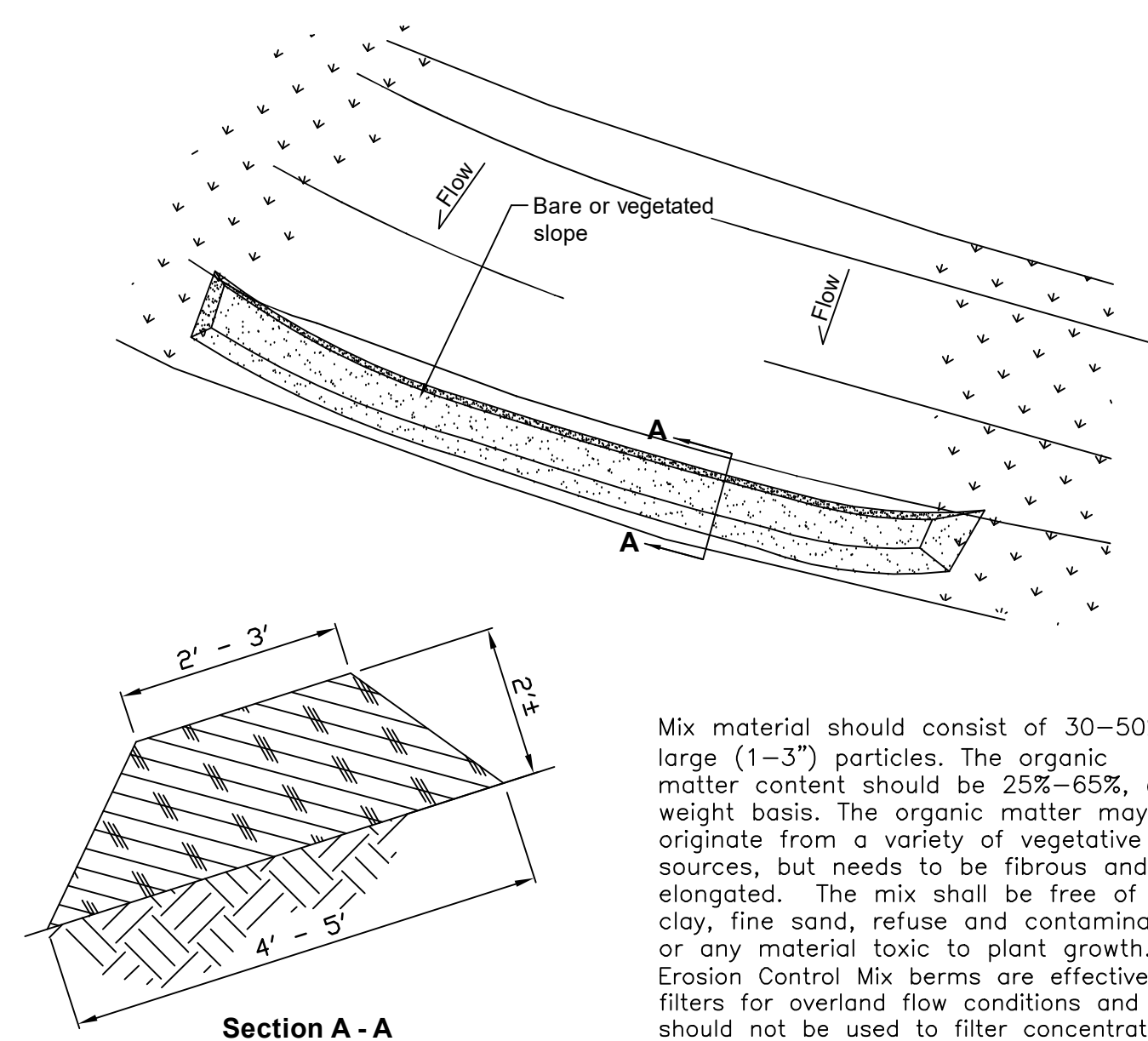
- CUT AND REMOVE TREES IN CONSTRUCTION AREAS AS REQUIRED OR DIRECTED.
- CONSTRUCT AND/OR INSTALL TEMPORARY AND PERMANENT SEDIMENT EROSION AND DETENTION CONTROL FACILITIES AS REQUIRED. EROSION, SEDIMENT AND DETENTION CONTROL FACILITIES SHALL BE INSTALLED AND STABILIZED PRIOR TO ANY EARTH MOVING OPERATION AND PRIOR TO DIRECTING RUNOFF TO THEM.
- CLEAR, CUT, GRUB AND DISPOSE OF DEBRIS IN APPROVED FACILITIES. STUMPS AND DEBRIS ARE TO BE REMOVED FROM SITE AND DISPOSED OF PER STATE AND LOCAL REGULATIONS.
- EXCAVATE AND STOCKPILE TOPSOIL /LOAM. ALL AREAS SHALL BE STABILIZED IMMEDIATELY AFTER GRADING.
- CONSTRUCT TEMPORARY CULVERTS AS REQUIRED OR DIRECTED.
- CONSTRUCT THE ROADWAY/DRIVEWAYS AND ITS ASSOCIATED DRAINAGE STRUCTURES. ALL ROADWAYS, PARKING AREAS, AND CUT/FILL SLOPES SHALL BE STABILIZED AND/OR LOAMED AND SEEDED WITHIN 72-HOURS OF ACHIEVING FINISH GRADE AS APPLICABLE.
- INSTALL PIPE AND CONSTRUCTION ASSOCIATED APPURTENANCES AS REQUIRED OR DIRECTED. ALL DISTURBED AREAS SHALL STABILIZED IMMEDIATELY AFTER GRADING.
- BEGIN PERMANENT AND TEMPORARY SEEDING AND MULCHING. ALL CUT AND FILL SLOPES AND DISTURBED AREAS SHALL BE SEEDED OR MULCHED AS REQUIRED, OR DIRECTED.
- DAILY OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINAGE CHECK DAMS, DITCHES, SEDIMENT TRAPS, ETC. TO PREVENT EROSION ON THE SITE AND PREVENT ANY SILTATION OF ABUTTING WATERS OR PROPERTY.
- INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION
- COMPLETE PERMANENT SEEDING AND LANDSCAPING
- REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDING AREAS HAVE ESTABLISHED THEMSELVES AND SITE IMPROVEMENTS ARE COMPLETE. SMOOTH AND REVEGETATE ALL DISTURBED AREAS.
- ALL SWALES AND DRAINAGE STRUCTURES WILL BE CONSTRUCTED AND STABILIZED PRIOR TO HAVING RUNOFF DIRECTED TO THEM.
- FINISH PAVING ALL ROADWAYS/DRIVEWAYS.
- LOT DISTURBANCE OTHER THAN THAT SHOWN ON THE APPROVED PLANS SHALL NOT COMMENCE UNTIL THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.



- RECOMMENDED MAINTENANCE SCHEDULE**
- EACH SILT SACK SHOULD BE INSPECTED AFTER EVERY MAJOR RAIN EVENT
 - IF THERE HAVE BEEN NO MAJOR EVENTS, SILT SACK SHOULD BE INSPECTED EVERY 2-3 WEEKS
 - THE RESTRAINT CORD SHOULD BE VISIBLE AT ALL TIMES. IF CORD IS COVERED WITH SEDIMENT, THE SILT SACK SHOULD BE EMPTIED.



- MAINTENANCE NOTE:**
- ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAINFALL AND REPAIRS MADE AS NECESSARY. SEDIMENT SHOULD BE REMOVED FROM TRAPPING DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE HALF THE DEPTH OF THE TRAP. THE SEDIMENT SHOULD BE DISPOSED IN A SUITABLE UPLAND AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURE OR VEGETATIVE MEANS. THE TEMPORARY TRAPS SHOULD BE REMOVED AND THE AREA REPAIRED AS SOON AS THE CONTRIBUTING DRAINAGE AREA TO THE INLET HAS BEEN COMPLETELY STABILIZED.



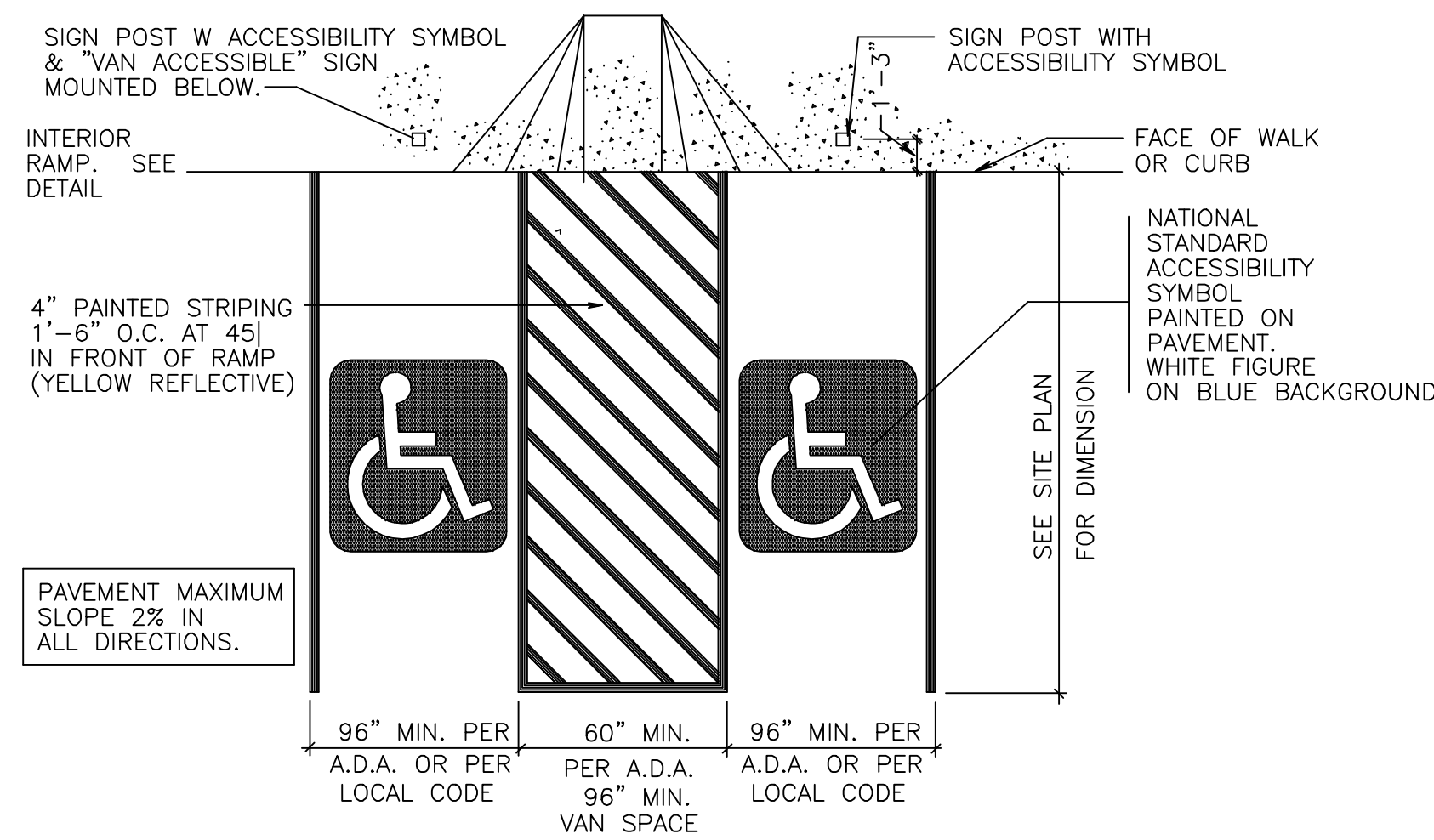
Mix material should consist of 30-50% large (1-3") particles. The organic matter content should be 25%-65%, dry weight basis. The organic matter may originate from a variety of vegetative sources, but needs to be fibrous and elongated. The mix shall be free of silt, clay, fine sand, refuse and contaminants or any material toxic to plant growth. Erosion Control Mix berms are effective filters for overland flow conditions and should not be used to filter concentrated flow such as that found in drainage ditches, streams, etc.

Erosion Control Mix Berm

REVISED PER REVIEW COMMENTS		5/15/24
REVISED PER REVIEW COMMENTS		3/28/24
REVISIONS:		DATE:
EROSION & SEDIMENT CONTROL DETAILS		
COMMERCIAL DEVELOPMENT ROUTE 108 EXETER, NH TAX MAP 52, LOT 112.2		
DATE:	FEB, 2024	SCALE: NTS
PROJ. NO:	NH-1471	SHEET NO. 6

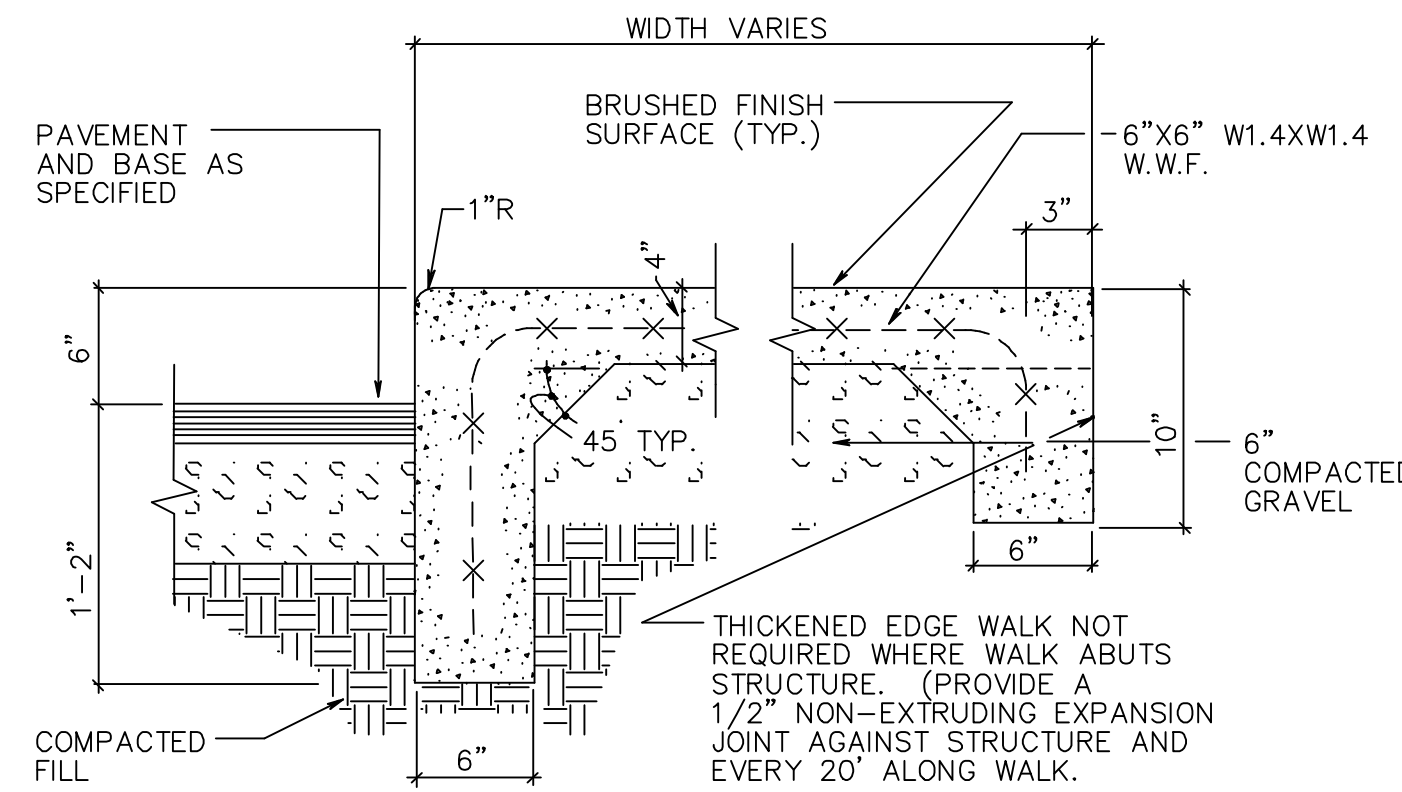
PREPARED FOR:
FOSS MOTORS
 133 PORTSMOUTH AVE.
 (NH ROUTE 108)
 EXETER, NEW HAMPSHIRE

BA BEALS
 ASSOCIATES, PLLC | 70 PORTSMOUTH AVE,
 THIRD FLOOR, SUITE 2
 STRATHAM, N.H. 03885
 PHONE: 603-583-4860,
 FAX: 603-583-4863



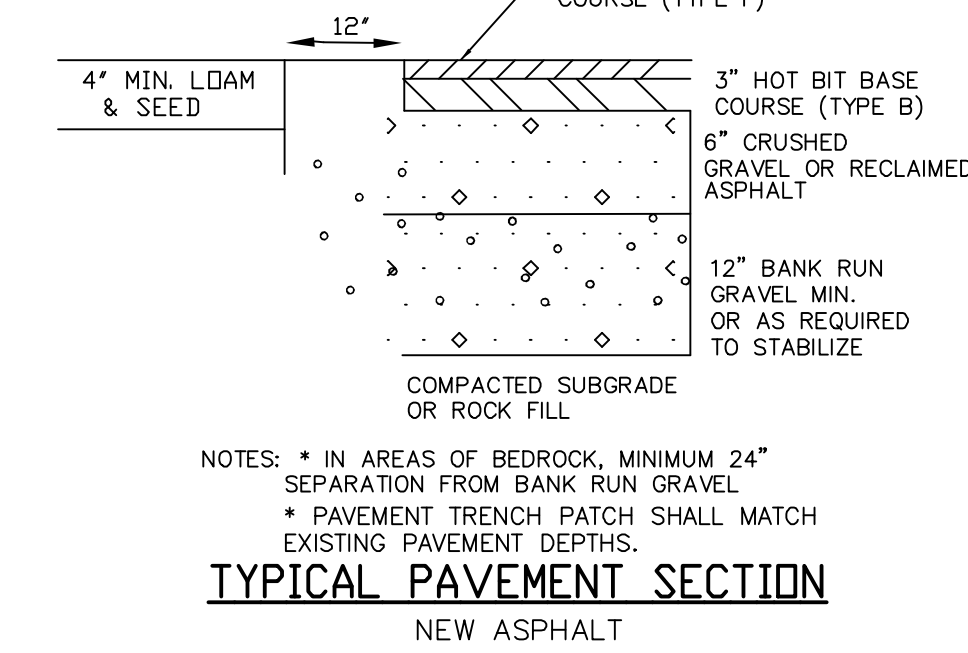
PARKING STALL FOR THE PHYSICALLY CHALLENGED

NOT TO SCALE DEC. 15, 1991



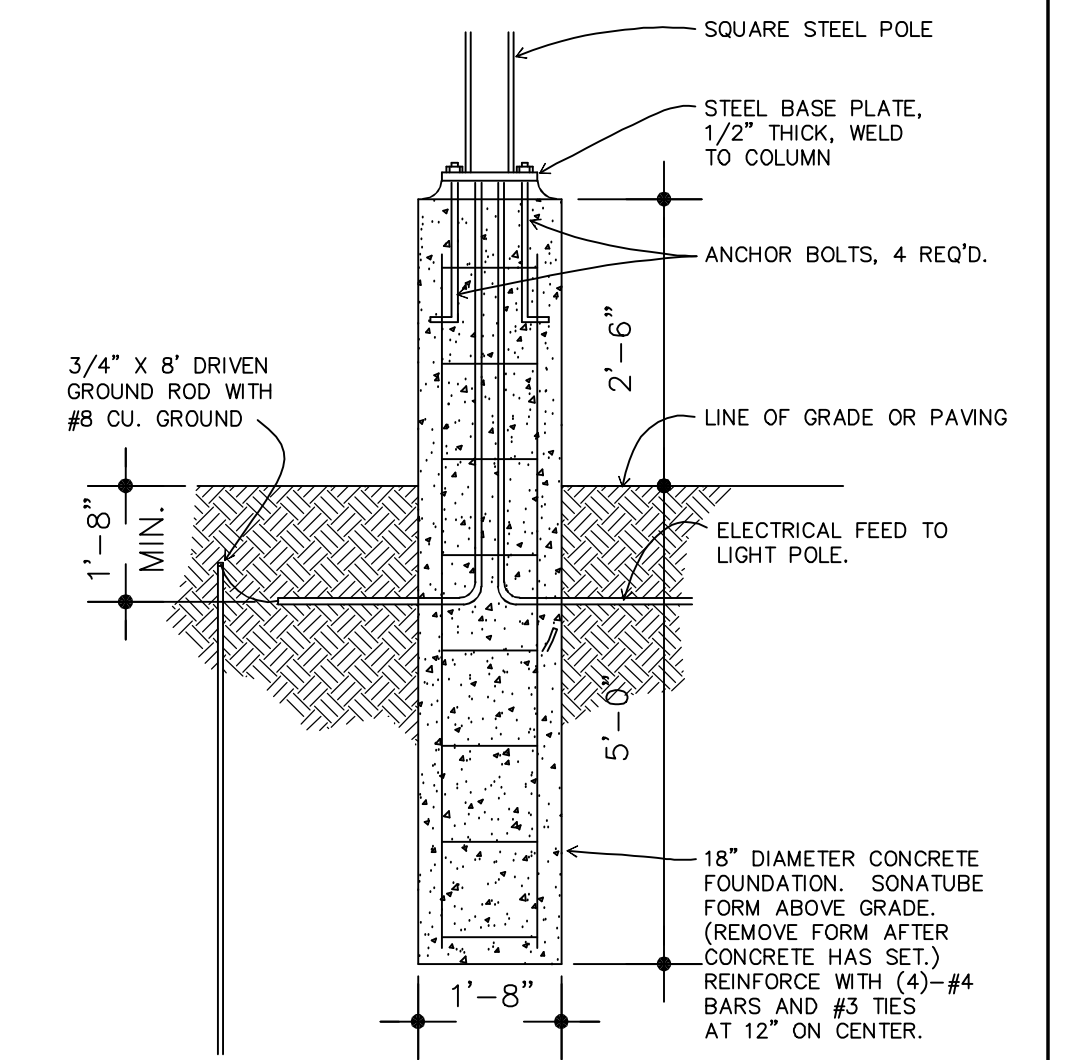
BRUSHED CONCRETE WALK

NOT TO SCALE JULY 15, 1986



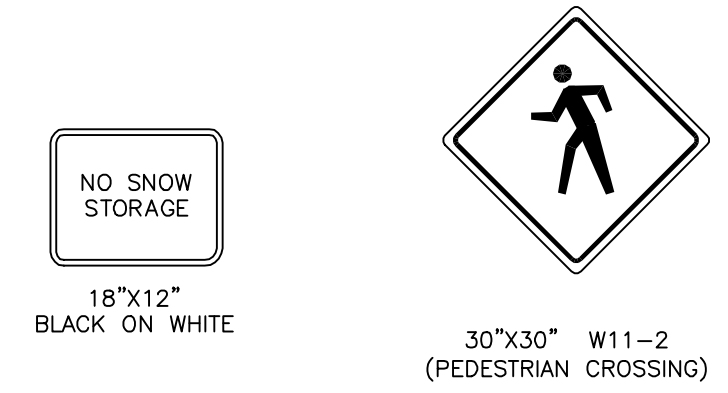
TYPICAL PAVEMENT SECTION
 NEW ASPHALT

NOTES:
 * IN AREAS OF BEDROCK, MINIMUM 24" SEPARATION FROM BANK RUN GRAVEL
 * PAVEMENT TRENCH PATCH SHALL MATCH EXISTING PAVEMENT DEPTHS.

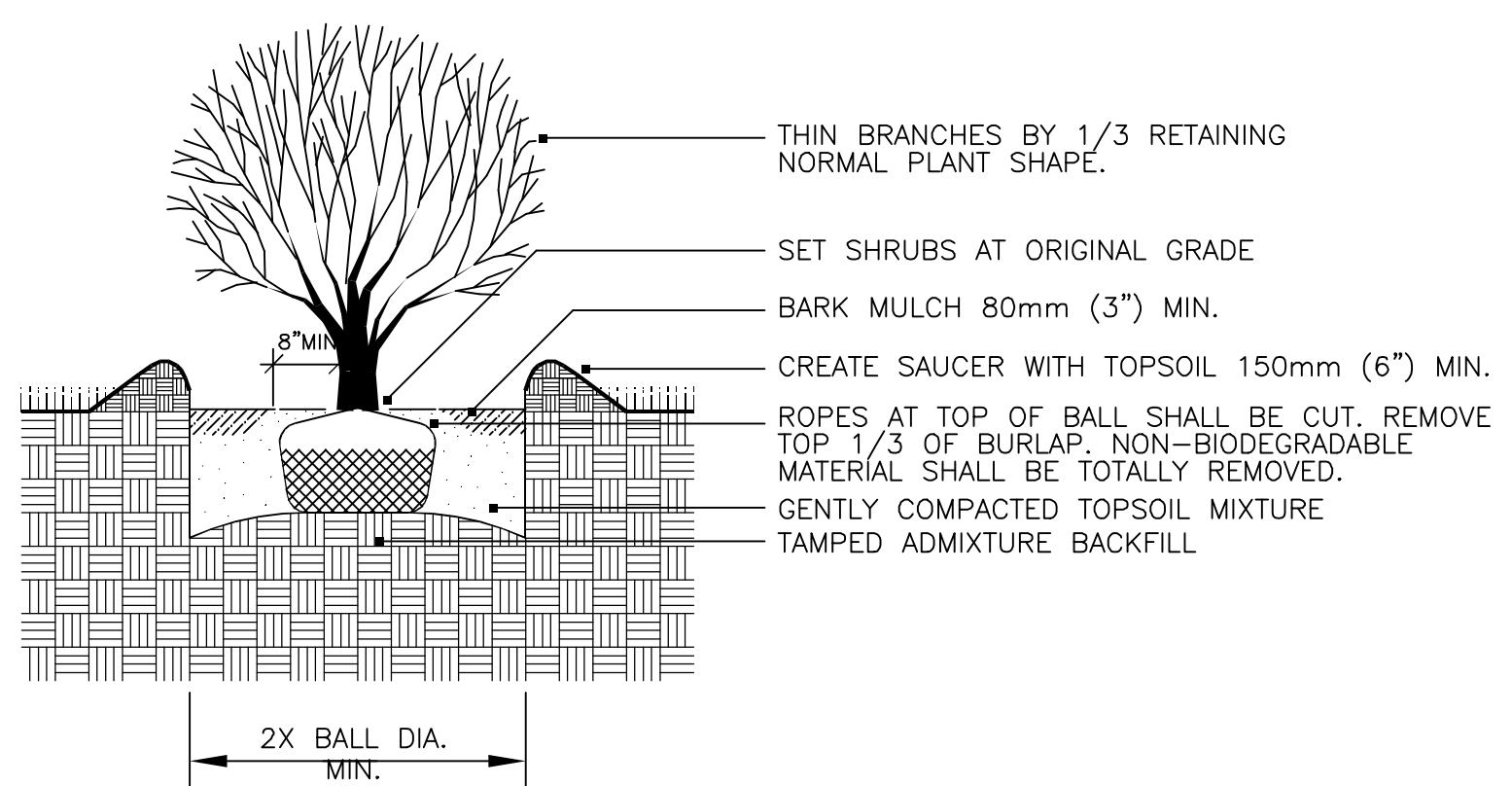
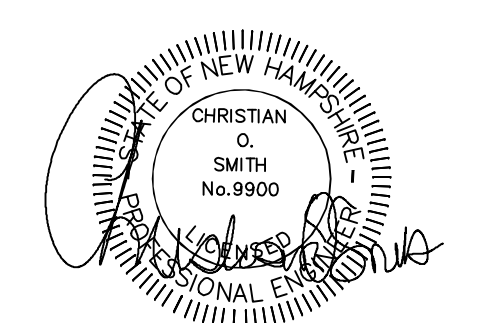


POLE FOUNDATION LIGHT BASE DETAIL

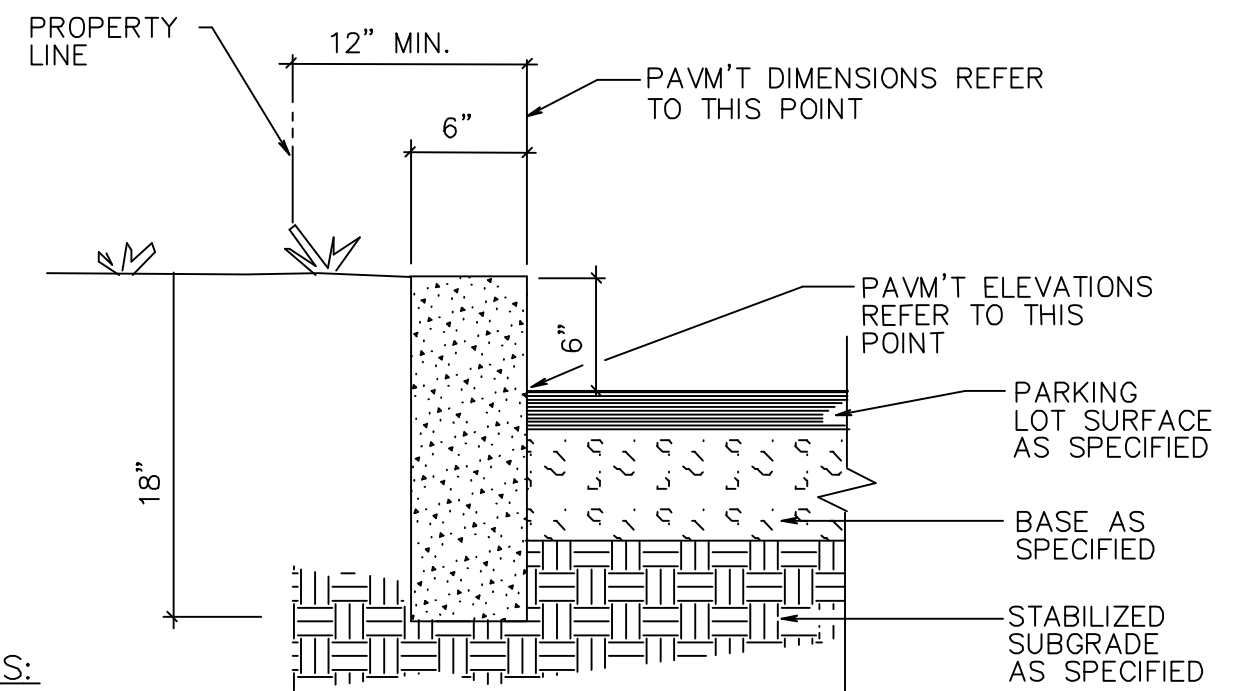
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SIGN LEGEND



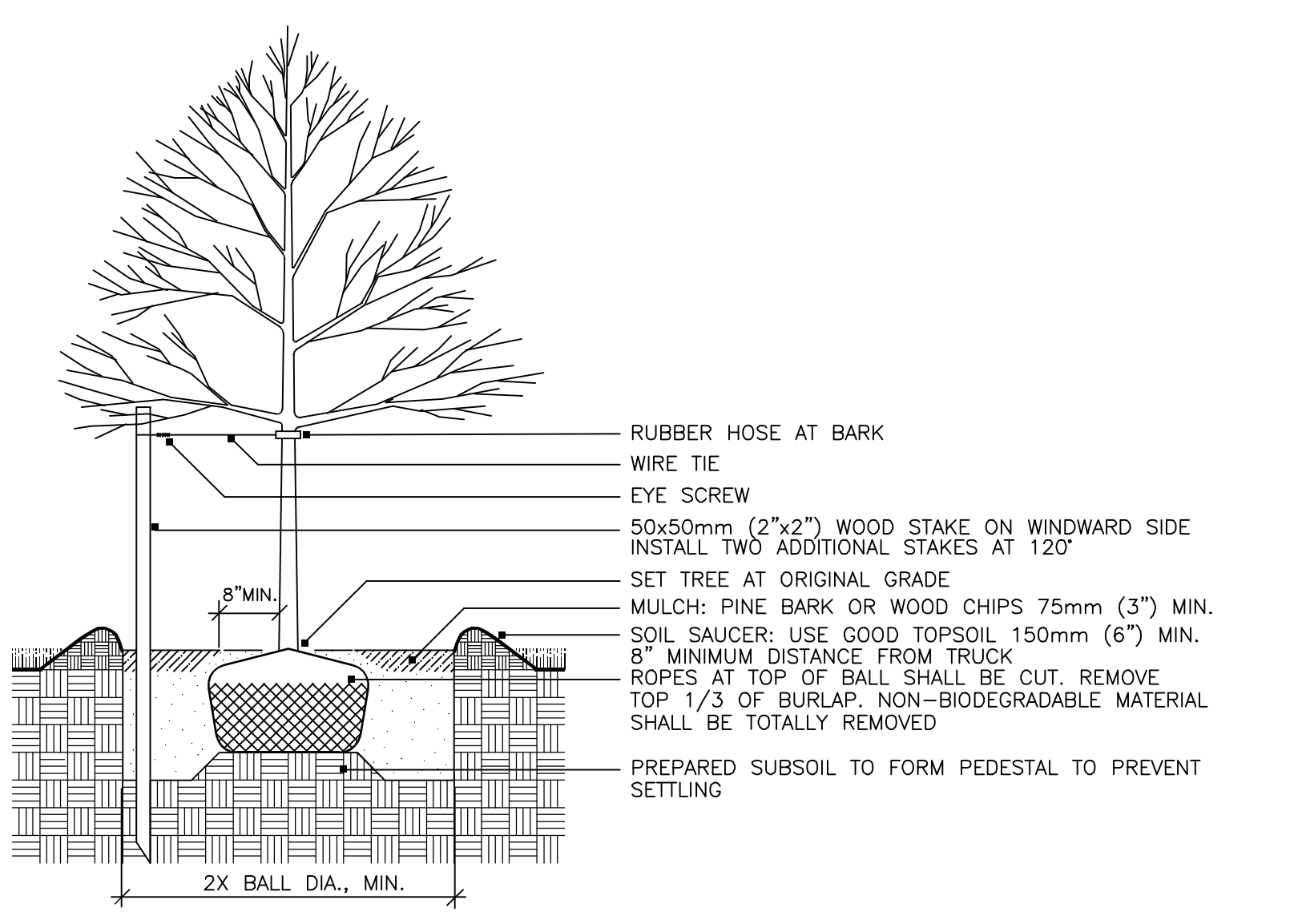
SHRUB PLANTING - BALL & BURLAP



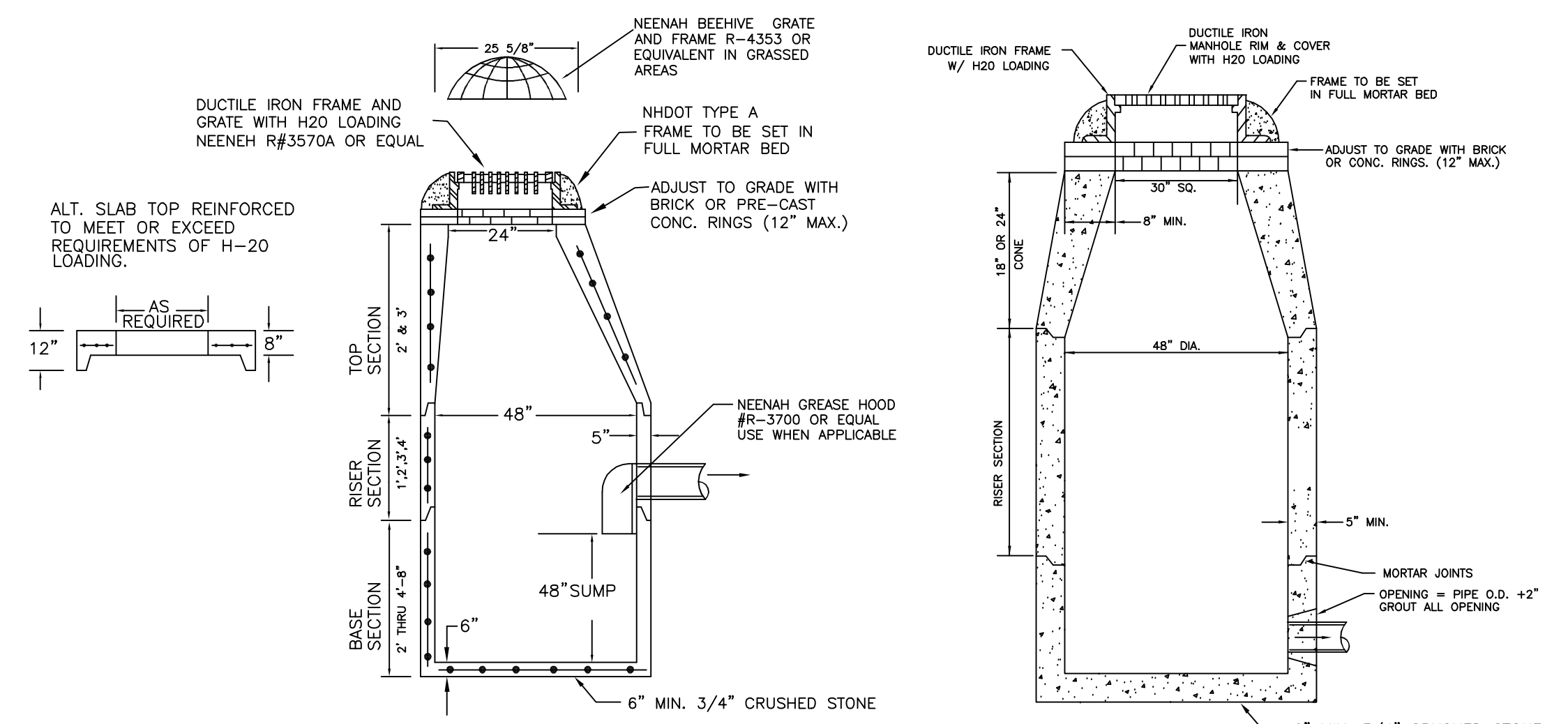
6" VERTICAL GRANITE CURB

NOT TO SCALE

- NOTES:
1. EDGING TO BE PLACED PRIOR TO PLACING TOP SURFACE COURSE.
 2. JOINTS BETWEEN STONES SHALL BE MORTARED.

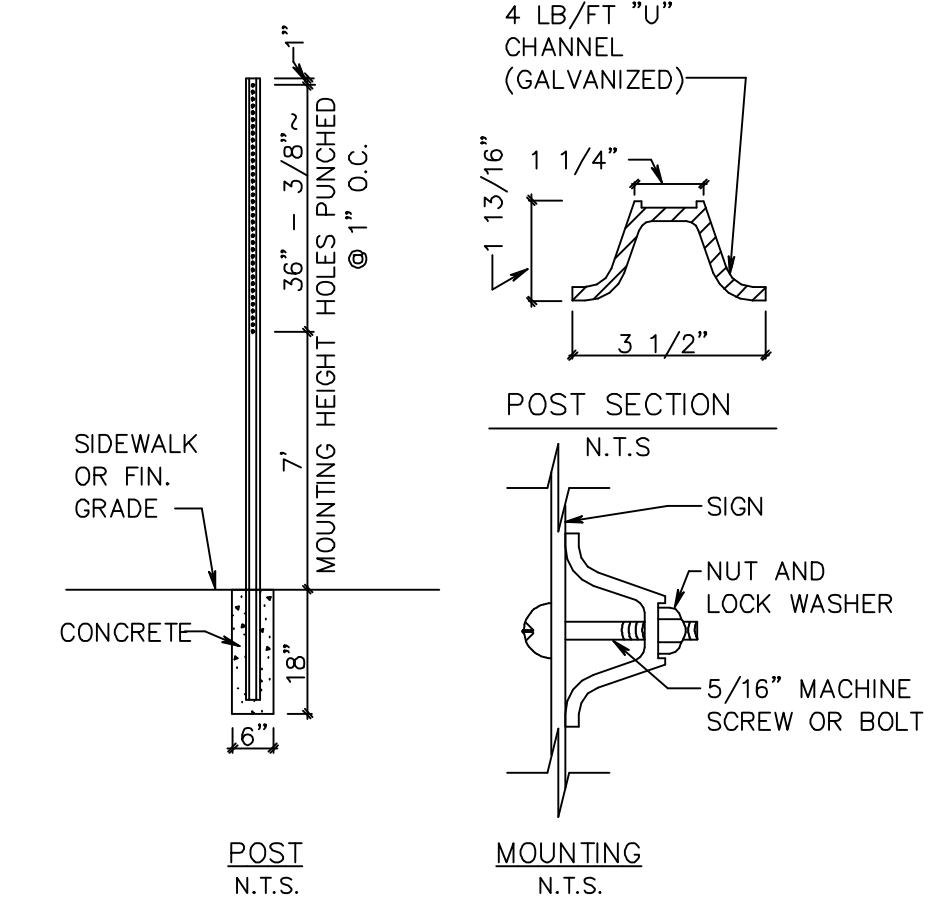


DECIDUOUS TREE PLANTING WITH STAKE AND WIRE TIE - HEAVY DUTY



PRECAST CATCH BASIN

PRECAST DRAIN MANHOLE



STREET SIGN DETAIL

REVISED PER REVIEW COMMENTS	6/27/24
REVISED PER REVIEW COMMENTS	5/15/24
REVISED PER REVIEW COMMENTS	3/28/24
REVISIONS:	DATE:

CONSTRUCTION DETAILS

COMMERCIAL DEVELOPMENT
 ROUTE 108
 EXETER, NH
 TAX MAP 52, LOT 112.2

DATE:	FEB, 2024	SCALE:	NTS
PROJ. NO:	NH-1471	SHEET NO.	7

CONSTRUCTION SPECIFICATIONS FOR POROUS ASPHALT
THE UNH STORM WATER CENTER
INSTALLATION RECOMMENDATIONS

- INSTALLATION
- A. PERCOLATION BEDS (REFERS TO NO 57 STONE)
 - 1. OWNER SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO ALL PERCOLATION BED AND POROUS PAVING WORK.
 - 2. SUB GRADE PREPARATION
 - A. EXISTING SUB GRADE UNDER BED AREAS SHALL NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC PRIOR TO STONE BED PLACEMENT.
 - B. WHERE EROSION OF SUB GRADE HAS CAUSED ACCUMULATION OF FINE MATERIALS AND/OR SURFACE PONDING, THIS MATERIAL SHALL BE REMOVED WITH LIGHT EQUIPMENT AND THE UNDERLYING SOILS SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES WITH A YORK RAKE OR EQUIVALENT AND LIGHT TRACTOR.
 - C. BRING SUB GRADE OF STONE PERCOLATION BED TO LINE, GRADE, AND ELEVATIONS INDICATED. FILL AND LIGHTLY REGRADE ANY AREAS DAMAGED BY EROSION, PONDING, OR TRAFFIC COMPACTED BEFORE THE PLACING OF STONE. ALL BED BOTTOMS ARE LEVEL GRADE.
 - 3. RECHARGE BED INSTALLATION (REFERS TO NO 3 STONE)
 - A. UPON COMPLETION OF SUB GRADE WORK, THE ENGINEER SHALL BE NOTIFIED AND SHALL INSPECT AT HIS DISCRETION BEFORE PROCEEDING WITH PERCOLATION BED INSTALLATION.
 - B. PERCOLATION BED AGGREGATE SHALL BE PLACED IMMEDIATELY AFTER APPROVAL OF SUB GRADE PREPARATION. ANY ACCUMULATION OF DEBRIS OR SEDIMENT WHICH HAS TAKEN PLACE AFTER APPROVAL OF SUB GRADE SHALL BE REMOVED PRIOR TO INSTALLATION OF AGGREGATE AT NO EXTRA COST TO THE OWNER.
 - C. INSTALL COARSE AGGREGATE NO. 3 (1 1/2" STONE) IN 8-INCH MAXIMUM LIFTS. LIGHTLY COMPACT EACH LAYER WITH EQUIPMENT, KEEPING EQUIPMENT MOVEMENT OVER STORAGE BED SUBGRADES TO A MINIMUM. INSTALL AGGREGATE TO GRADES INDICATED ON THE DRAWINGS.
 - D. INSTALL 3" LIFT PEA GRAVEL LAYER TO PREVENT MIGRATION OF FINES FROM THE FILTER COARSE (NHDOT 304.1)
 - E. INSTALL FILTER COARSE (NHDOT 304.1 SAND LESS THAN 2% FINES) IN 2, 4" LIFTS. LIGHTLY COMPACT EACH LAYER WITH EQUIPMENT, KEEPING EQUIPMENT MOVEMENT OVER STORAGE BED SUBGRADES TO A MINIMUM. INSTALL AGGREGATE TO GRADES INDICATED ON THE DRAWINGS.
 - F. INSTALL CHOKER BASE COURSE (AASHTO # 57 STONE) AGGREGATE EVENLY OVER SURFACE OF STONE BED, SUFFICIENT TO ALLOW PLACEMENT OF PAVEMENT, AND NOTIFY ENGINEER FOR APPROVAL. CHOKER BASE COURSE SHALL BE SUFFICIENT TO ALLOW FOR EVEN PLACEMENT OF ASPHALT BUT NO THICKER THAN 4-INCH IN DEPTH.
 - 4. SURROUNDING AREAS
 - A. BEFORE THE POROUS PAVEMENT IS INSTALLED, ADJACENT SOIL AREAS SHOULD BE SLOPED AWAY FROM ALL PAVEMENT EDGES, TO PREVENT POTENTIAL SEDIMENT FROM WASHING ONTO THE PAVEMENT SURFACE.
 - B. TO ACCOMPLISH THIS, A SEQUENCE OF SWALES SHOULD BE EXCAVATED INTO ALL EARTHEN (UNPAVED) AREAS AT LEAST ON THE UPHILL SIDES OF THE PAVEMENT, AND WHERE NECESSARY, TO BELOW THE CURB OR PAVEMENT ELEVATION. ITS SHAPE AND FINISHINGS CAN BE INTEGRATED WITH THE PROJECT'S ARCHITECTURE AND LANDSCAPE, AND DESIGNED TO MAXIMIZE INFILTRATION. SWALE OVERFLOW, WHEN IT OCCURS, CAN BE DISCHARGED FROM ONE SWALE TO ANOTHER BY CONNECTING PIPES UNDER DRIVEWAYS.
 - C. BUILDING BASEMENTS AND FOUNDATIONS SHOULD BE WATERPROOFED AS NECESSARY, WHERE THE POROUS PAVEMENT ABUTS BUILDINGS.

- 5. TRANSPORTING MATERIAL
 - A. TRANSPORTING OF MIX TO THE SITE SHALL BE IN VEHICLES WITH SMOOTH, CLEAN DUMP BEDS THAT HAVE BEEN SPRAYED WITH A NON-PETROLEUM RELEASE AGENT.
 - B. THE MIX SHALL BE COVERED DURING TRANSPORT TO CONTROL COOLING.
 - C. POROUS BITUMINOUS ASPHALT SHALL NOT BE STORED IN EXCESS OF 90 MINUTES BEFORE PLACEMENT.
- 3. ASPHALT PLACEMENT
 - A. THE POROUS BITUMINOUS SURFACE COURSE SHALL BE LAID IN ONE LIFT DIRECTLY OVER THE CHOKER COARSE, FILTER COARSE, AND CRUSHED STONE BASE COURSE TO A 4-INCH FINISHED THICKNESS. THE SURFACE CAN BE LAID IN TWO LIFTS IF SECOND LIFT IS DONE WITHIN 10 BUSINESS DAYS AND THE INITIAL COURSE IS CLEAN AND FREE OF SEDIMENT.
 - B. THE LAYING TEMPERATURE OF THE BITUMINOUS MIX SHALL BE BETWEEN 300 DEGREES FAHRENHEIT AND 350 DEGREES FAHRENHEIT (BASED ON THE RECOMMENDATIONS OF THE ASPHALT SUPPLIER).
 - C. INSTALLATION SHALL TAKE PLACE WHEN AMBIENT TEMPERATURES ARE 55 DEGREES FAHRENHEIT OR ABOVE, WHEN MEASURED IN THE SHADE AWAY FROM ARTIFICIAL HEAT.
 - D. THE USE OF A REMIXING MATERIAL TRANSFER DEVICE BETWEEN THE TRUCKS AND THE PAYER IS HIGHLY RECOMMENDED TO ELIMINATE COLD LUMPS IN THE MIX.
 - E. THE POLYMER-MODIFIED ASPHALT IS VERY DIFFICULT TO RAKE, A WELL-HEATED SCREED SHOULD BE USED TO MINIMIZE THE NEED FOR RAKING.
 - F. COMPACTION OF THE SURFACE COURSE SHALL TAKE PLACE WHEN THE SURFACE IS COOL ENOUGH TO RESIST A 10-TON ROLLER. (140°F, SURFACE TEMPERATURE) ONE OR TWO PASSES IS ALL THAT IS REQUIRED FOR PROPER COMPACTION. MORE ROLLING COULD CAUSE A REDUCTION IN THE SURFACE POROSITY WHICH IS UNACCEPTABLE.
- 4. IN THE EVENT CONSTRUCTION SEDIMENT IS INADVERTENTLY DEPOSITED ON THE FINISHED POROUS SURFACE, IT MUST BE IMMEDIATELY REMOVED BY VACUUMING.
- 5. AFTER FINAL ROLLING, NO VEHICULAR TRAFFIC OF ANY KIND SHALL BE PERMITTED ON THE SURFACE UNTIL COOLING AND HARDENING HAS TAKEN PLACE, AND IN NO CASE WITHIN THE FIRST 48 HOURS. PROVIDE BARRIERS AS NECESSARY AT NO EXTRA COST TO THE OWNER TO PREVENT VEHICULAR USE; REMOVE AT THE DISCRETION OF THE ENGINEER.
- 6. STRIPING PAINT FOR TRAFFIC LANES AND PARKING BAYS SHALL BE CHLORINATED RUBBER BASE, FACTORY MIXED, NON-BLEEDING, FAST DRYING, BEST QUALITY, WHITE TRAFFIC PAINT WITH A LIFE EXPECTANCY OF TWO YEARS UNDER NORMAL TRAFFIC USE.
- A. PAVEMENT-MARKING PAINT, LATEX, WATER-BASE EMULSION, READY-MIXED, COMPLYING WITH PS TT-19-192.
- B. SWEEP AND CLEAN SURFACE TO ELIMINATE LOOSE MATERIAL AND DUST.
- C. PAINT 4 INCH WIDE TRAFFIC LANE STRIPING IN ACCORDANCE WITH LAYOUTS OF PLAN. APPLY PAINT WITH MECHANICAL EQUIPMENT TO PRODUCE UNIFORM STRAIGHT EDGES. APPLY IN TWO COATS AT MANUFACTURER'S RECOMMENDED RATES. PROVIDE CLEAR, SHARP LINES USING WHITE TRAFFIC PAINT, INSTALLED IN ACCORDANCE WITH THE ENGINEER'S SPECIFICATIONS.
- 6. WORK SHALL BE DONE EXPERTLY THROUGHOUT, WITHOUT STAINING OR INJURY TO OTHER WORK.
- 7. TRANSITION TO ADJACENT IMPERVIOUS BITUMINOUS PAVING SHALL BE MERGED NEATLY WITH FLUSH, CLEAN LINE. FINISHED PAVING SHALL BE EVEN, WITHOUT POCKETS, AND GRADED TO ELEVATIONS SHOWN ON DRAWING.
- 7. POROUS PAVEMENT BEDS SHALL NOT BE USED FOR EQUIPMENT OR MATERIALS STORAGE DURING CONSTRUCTION, AND UNDER NO CIRCUMSTANCES SHALL VEHICLES BE ALLOWED TO DEPOSIT SOIL ON PAVED POROUS SURFACES.
- 8. REPAIR OF DAMAGED PAVING
 - A. ANY EXISTING PAVING ON OR ADJACENT TO THE SITE THAT HAS BEEN DAMAGED AS A RESULT OF CONSTRUCTION WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER WITHOUT ADDITIONAL COST TO THE OWNER.
- 9. FIELD QUALITY CONTROL
 - A. THE FULL PERMEABILITY OF THE PAVEMENT SURFACE SHALL BE TESTED BY APPLICATION OF CLEAN WATER AT THE RATE OF AT LEAST 1.5 GPM OVER THE SURFACE, USING A HOSE OR OTHER DISTRIBUTION DEVICE. WATER USED FOR THE TEST SHALL BE CLEAN, FREE OF SUSPENDED SOLIDS AND DELETERIOUS LIQUIDS AND WILL BE PROVIDED AT NO EXTRA COST TO THE OWNER. ALL APPLIED WATER SHALL INFILTRATE DIRECTLY WITHOUT PUDDLE FORMATION OR SURFACE RUNOFF, AND SHALL BE OBSERVED BY THE ENGINEER AND OWNER.
 - B. TEST IN-PLACE BASE AND SURFACE COURSE FOR COMPLIANCE WITH REQUIREMENTS FOR THICKNESS AND SURFACE SMOOTHNESS. REPAIR OR REMOVE AND REPLACE UNACCEPTABLE WORK AS DIRECTED BY THE OWNER.
 - C. SURFACE SMOOTHNESS: TEST FINISHED SURFACE FOR SMOOTHNESS AND EVEN DRAINAGE, USING A TEN-FOOT TO CENTERLINE OF PAVED AREA. SURFACE WILL NOT BE ACCEPTED IF GAPS OR RIDGES EXCEED 3/16 OF AN INCH.

MINIMUM COMPACTION REQUIREMENTS

COMPACTION SHALL BE PERFORMED TO NOT LESS THAN NINETY-FIVE PERCENT (95%) MAXIMUM DENSITY AS DETERMINED IN A LABORATORY COMPACTION TEST, PERFORMED UNDER THE SPECIFICATIONS OF ASTM D1557-64T, METHOD "A", (BACK FILL MATERIAL OF A STONY NATURE SHALL BE TESTED UNDER METHOD "C" OR "D" OF THE SAME ASTM DESIGNATION) OR OTHER APPROVED ASTM OR AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) SPECIFICATIONS. SUCH TEXT SHALL ALSO BE USED FOR ESTABLISHING THE OPTIMUM MOISTURE CONTENT OF THE MATERIALS. THE IN-PLACE DRY UNIT WEIGHT OF THE COMPACTED MATERIALS SHALL BE DETERMINED BY METHODS SPECIFIED UNDER ASTM "D" 1556-58T OR OTHER APPROVED ASTM OR AASHTO SPECIFICATIONS. THE IN-PLACE COMPACTION TEST TO BE CONSISTENT WITH THE APPROVED LABORATORY COMPACTION TEST.

TABLE 5. POROUS ASPHALT MIX DESIGN CRITERIA.

SIEVE SIZE (INCH/MM)	PERCENT PASSING (%)
0.75/19	100
0.30/12.5	85-100
0.375/9.5	55-75
NO.4/4.75	10-25
NO.8/2.36	5-10
NO.200/0.075 (#200)	2-4
BINDER CONTENT (AASHTO T164) 6.0-6.5%	
AIR VOID CONTENT BY CORELOK (ASTM D6752)* 16.0-20.0%	
AIR VOID CONTENT BY PARAFFIN WAX (AASHTO T275) *18.0-22.0%	
DRAWDOWN (ASTM D6390)** <= 0.3 %	
RETAINED TENSILE STRENGTH (AASHTO 283)*** >= 80 %	

* EITHER METHOD IS ACCEPTABLE
 ** CELLULOSE OR MINERAL FIBERS MAY BE USED TO REDUCE DRAWDOWN.
 *** IF THE TSR (RETAINED TENSILE STRENGTH) VALUE FROM TESTED PER NAPA IS 131 (WITH A SINGLE FREEZE THAW CYCLE RATHER THAN 5). STEP 4, THE CONTRACTOR SHALL EMPLOY AN ANTISTRIP ADDITIVE, SUCH AS HYDRATED LIME (ASTM C977) OR A FATTY AMINE, TO RAISE THE TSR VALUE ABOVE 80%.

MIX SUMMARY
POROUS ASPHALT PAVEMENT MIX
THE UNH STORM WATER CENTER

POROUS ASPHALT SHALL BE FOUR INCHES THICK WITH A BITUMINOUS MIX OF 6% TO 6.5% BY WEIGHT DRY AGGREGATE AND AIR Voids OF 18-22% IN ACCORDANCE WITH ASTM D6390, DRAIN DOWN OF THE BINDER SHALL BE NO GREATER THAN 0.3%. IF MORE ABSORPTIVE AGGREGATES, SUCH AS LESTONE, ARE USED IN THE MIX, THEN THE AMOUNT OF BITUMEN IS TO BE BASED ON THE TESTING PROCEDURES OUTLINED IN THE NATIONAL ASPHALT PAVEMENT ASSOCIATION'S INFORMATION SERIES 131 - "PERVIOUS ASPHALT PAVEMENTS" (2003) OR NHDOT EQUIVALENT. MIX SUPPLIERS MAY HAVE A SUITABLE IN-HOUSE SPECIFICATION FOR OPEN GRADED FRICTION COURSE (OGFC) THAT CAN BE USED.

USE NEAT ASPHALT BINDER MODIFIED WITH AN ELASTOMERIC POLYMER TO PRODUCE A BINDER MEETING THE REQUIREMENTS OF PG 76-22 AS SPECIFIED IN AASHTO MP-1. THE ELASTOMER POLYMER SHALL BE STYRENE-BUTADIENE-STYRENE (SBS), OR APPROVED EQUAL, APPLIED AT A RATE OF 3% BY WEIGHT OF THE TOTAL BINDER. THE COMPOSITE MATERIALS SHALL BE THOROUGHLY BLENDED AT THE ASPHALT REFINERY OR TERMINAL PRIOR TO BEING LOADED INTO THE TRANSPORT VEHICLE. THE POLYMER MODIFIED ASPHALT BINDER SHALL BE HEAT AND STORAGE STABLE.

AGGREGATE SHALL BE MINIMUM 90% CRUSHED MATERIAL AND HAVE A GRADATION OF:

COMPOSITION OF MIXTURE
 SIEVE SIZE (INCH/MM) PERCENT PASSING: 0.75/19 100.00, 0.30/12.5 85.00, 0.375/9.5 55.00, NO.4/4.75 10.00, NO.8/2.36 5.00, NO.200/0.075 2.00
 ADD HYDRATED LIME AT A DOSAGE RATE OF 1.0% BY WEIGHT OF THE TOTAL DRY AGGREGATE TO MIXES CONTAINING GRANITE. HYDRATED LIME SHALL MEET THE REQUIREMENTS OF ASTM C 977. THE ADDITIVE MUST BE ABLE TO PREVENT THE SEPARATION OF THE ASPHALT BINDER FROM THE AGGREGATE AND ACHIEVE A REQUIRED TENSILE STRENGTH RATIO (TSR) OF AT LEAST 80% ON THE ASPHALT MIX WHEN TESTED IN ACCORDANCE WITH AASHTO T 283. THE ASPHALT MIX SHALL BE TESTED FOR ITS RESISTANCE TO STRIPPING BY WATER IN ACCORDANCE WITH ASTM D-1664. IF THE ESTIMATED COATING AREA IS NOT ABOVE 95 PERCENT, ANTI-STRIPPING AGENTS SHALL BE ADDED TO THE ASPHALT.

NO WORK SHALL BE STARTED UNTIL THE CONTRACTOR HAS SUBMITTED AND THE ENGINEER HAS APPROVED A MIX DESIGN INCLUDING THE PERCENTAGE OF EACH INGREDIENT INCLUDING BINDER, POLYMER, AND THE JOB-MIX FORMULA FROM SUCH A COMBINATION. THE JOB-MIX FORMULA SHALL ESTABLISH A SINGLE PERCENTAGE OF AGGREGATE PASSING SIEVE AND A SINGLE PERCENTAGE OF BITUMINOUS MATERIAL TO BE ADDED TO THE AGGREGATE. NO CHANGE IN THE JOB-MIX FORMULA MAY BE MADE WITHOUT WRITTEN APPROVAL OF THE ENGINEER. THE JOB-MIX FORMULA MUST FALL WITH THE MASTER RANGE SPECIFIED IN COMPOSITION OF MIXTURE TABLE.

TRANSPORTING MATERIAL: SEE CONSTRUCTION AND INSTALL SPECIFICATIONS

FOR QUESTIONS ON MIX SPECIFICATIONS CONTACT ROBERT ROSENB, PHD, AT THE UNH STORM WATER CENTER. 603-862-4024.

MAINTENANCE SPECIFICATIONS FOR POROUS ASPHALT PARKING LOT AREAS AND LOW VOLUME ROADS
THE UNH STORM WATER CENTER

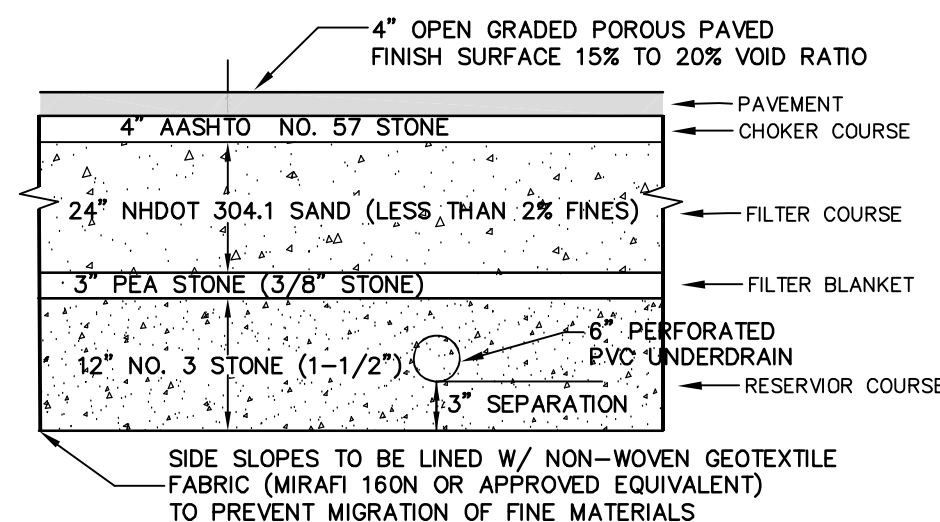
THE FOLLOWING RECOMMENDATIONS WILL HELP ASSURE THAT THE PAVEMENT IS MAINTAINED TO PRESERVE ITS HYDROLOGIC EFFECTIVENESS.

WINTER MAINTENANCE:

1. SANDING FOR WINTER TRACTION IS PROHIBITED. DEICING IS PERMITTED (NACL, MGC12, OR EQUIVALENT). REDUCED SALT APPLICATION IS POSSIBLE AND CAN BE A COST SAVING FOR WINTER MAINTENANCE. NONTOXIC ORGANIC DEICERS, APPLIED EITHER AS BLENDED, MAGNESIUM CHLORIDE-BASED LIQUID PRODUCTS OR AS PRETREATED SALT, ARE PREFERRED.
2. PLOWING IS ALLOWED. BLADE SHOULD BE SET APPROXIMATELY 1" ABOVE ROAD SURFACE. ICE AND LIGHT SNOW ACCUMULATION ARE GENERALLY NOT AS PROBLEMATIC AS FOR STANDARD ASPHALT. SNOW WILL ACCUMULATE DURING HEAVIER STORMS AND SHOULD BE PLOWED.

ROUTINE MAINTENANCE:

1. ASPHALT SEAL COATING MUST BE ABSOLUTELY FORBIDDEN. SURFACE SEAL COATING IS NOT REVERSIBLE.
2. THE PAVEMENT SURFACE SHOULD BE VACUUMED 1 OR 2 TIMES PER YEAR, AND AT ANY ADDITIONAL TIMES SEDIMENT IS SPILLED, ERODED, OR TRACKED ONTO THE SURFACE.
3. PLANTED AREAS ADJACENT TO PVIOUS PAVEMENT SHOULD BE WELL MAINTAINED TO PREVENT SOIL WASHOUT ONTO THE PAVEMENT. IF ANY BARE SPOTS OR ERODED AREAS ARE OBSERVED WITHIN THE PLANTED AREAS, THEY SHOULD BE REPLANTED AND/OR STABILIZED AT ONCE.
4. IMMEDIATELY CLEAN ANY SOIL DEPOSITED ON PAVEMENT. SUPERFICIAL DIRT DOES NOT NECESSARILY CLOG THE PAVEMENT VOIDS; HOWEVER, DIRT THAT IS GROUND IN REPEATEDLY BY TIRES CAN LEAD TO CLOGGING. THEREFORE, TRUCKS OR OTHER HEAVY VEHICLES SHOULD BE PREVENTED FROM TRACKING OR SPILLING DIRT ONTO THE PAVEMENT.
5. DO NOT ALLOW CONSTRUCTION STAGING, SOIL/MULCH STORAGE, ETC. ON UNPROTECTED PAVEMENT SURFACE.
6. REPAIRS: POTHOLES OF LESS THAN 50 SQUARE FEET CAN BE PATCHED BY ANY MEANS SUITABLE WITH STANDARD PAVEMENT OR A PVIOUS MIX IS PREFERRED. FOR AREAS GREATER THAN 50 SQ. FT. IN NEED OF REPAIR, APPROVAL OF PATCH TYPE SHOULD BE SOUGHT FROM A QUALIFIED ENGINEER. ANY REQUIRED REPAIR OF DRAINAGE STRUCTURES SHOULD BE DONE PROMPTLY TO ENSURE CONTINUED PROPER FUNCTIONING OF THE SYSTEM.
7. WRITTEN AND VERBAL COMMUNICATION TO THE POROUS PAVEMENT'S FUTURE OWNER SHOULD MAKE CLEAR THE PAVEMENT'S SPECIAL PURPOSE AND SPECIAL MAINTENANCE REQUIREMENTS SUCH AS THOSE LISTED HERE.
8. A PERMANENT SIGN SHOULD BE ADDED AT THE ENTRANCE AND END OF THE POROUS ASPHALT AREA TO INFORM RESIDENTS AND MAINTENANCE STAFF OF THE SPECIAL NATURE AND PURPOSE OF THE PAVEMENT, AND ITS SPECIAL MAINTENANCE REQUIREMENTS.

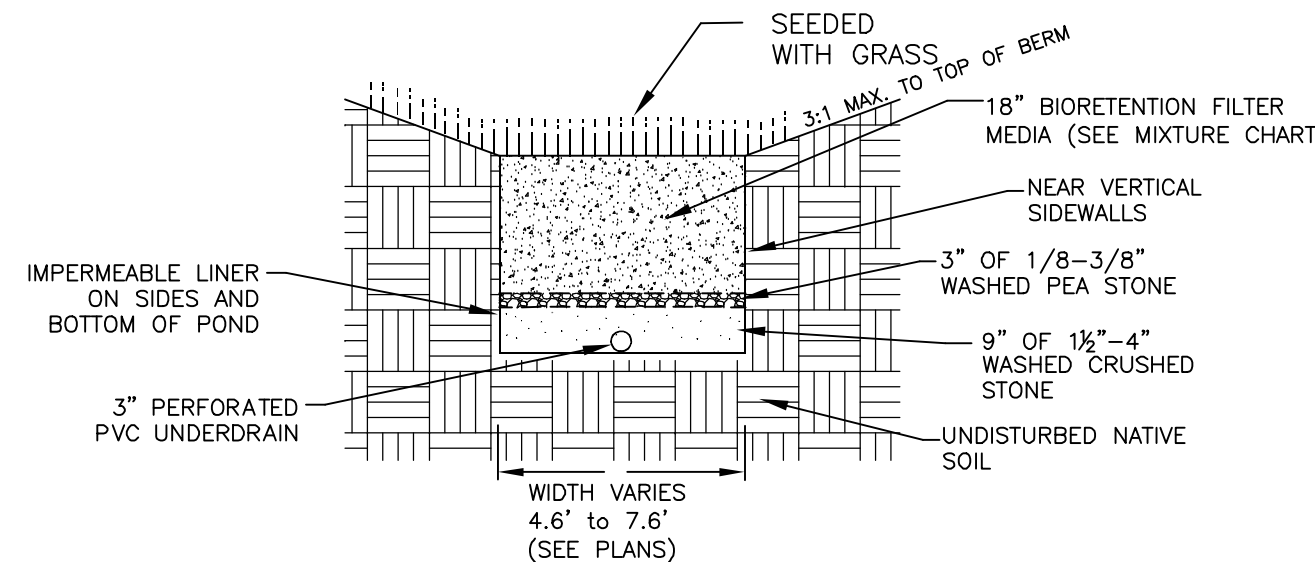


NOTES:

1. 4" FRICTION COARSE CONSISTS OF COARSER AGGREGATE AND STIFFER BINDER. SEE TABLE
2. A WORKING COURSE 4" THICK CONSISTS OF AASHTO NO. 57 STONE.
3. 6" UNDERDRAIN TO BE SET ABOVE CRUSHED GRAVEL BOTTOM TO ALLOW FOR STORAGE AND INFILTRATION.
4. TOP COAT SHOULD BE VACUUMED A MINIMUM OF TWICE A YEAR.
5. ADJACENT AREAS TO POROUS PAVEMENT SHOULD BE GRADED AWAY FROM PAVEMENT TO PREVENT SEDIMENT FROM RUNNING ONTO POROUS AREA AND CLOGGING PORES. ROOF RUNOFF CAN FLOW ONTO PAVEMENT OR INTO SUBBASE MATERIAL.

POROUS PAVEMENT

NOT TO SCALE

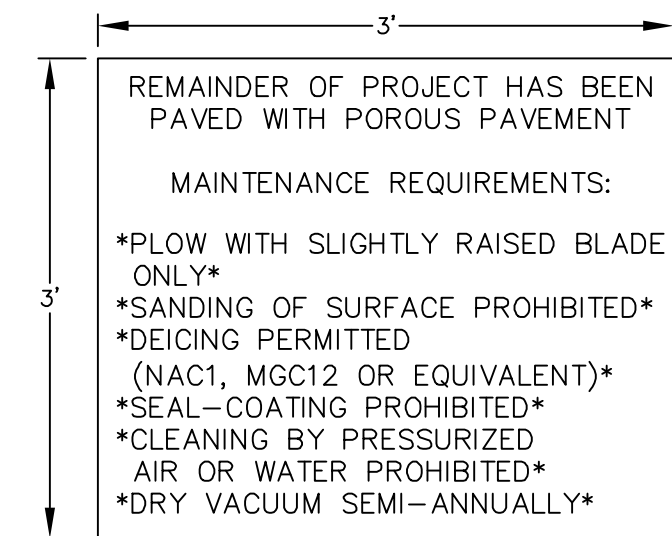


NOTES:

1. THE BIORETENTION MEDIA TO BE SEEDED WITH NE SEMI-SHADE GRASS AND FORBS MIX PROPOSED AT 1-LB PER 1,450 S.F. (DROUGHT TOLERANT) OR SIMILAR GRASS SEED PER NHDES.
2. SCARIFY SIDES AND BOTTOM OF BIORETENTION AREA TO FACILITATE NATURAL INFILTRATION.

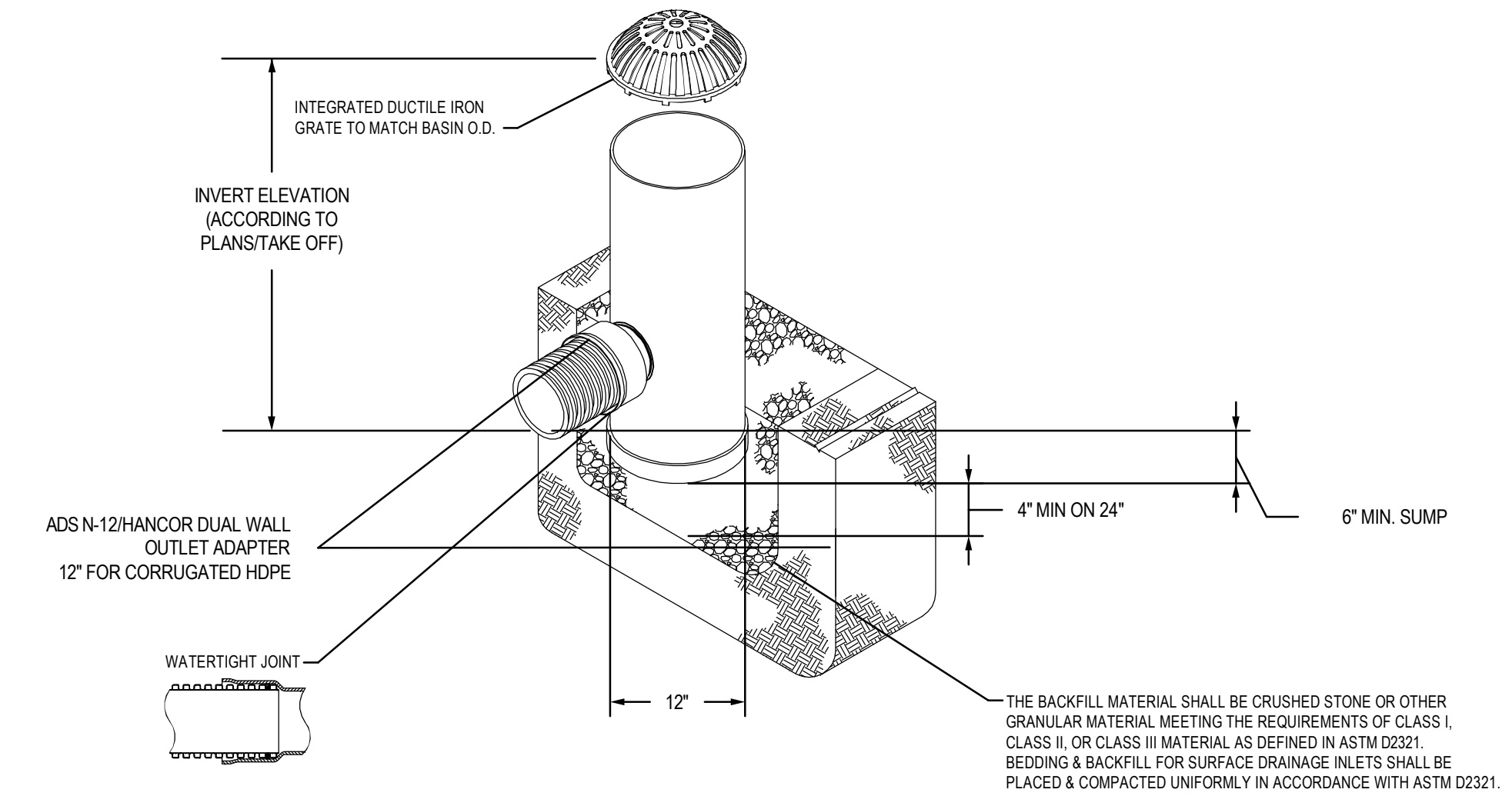
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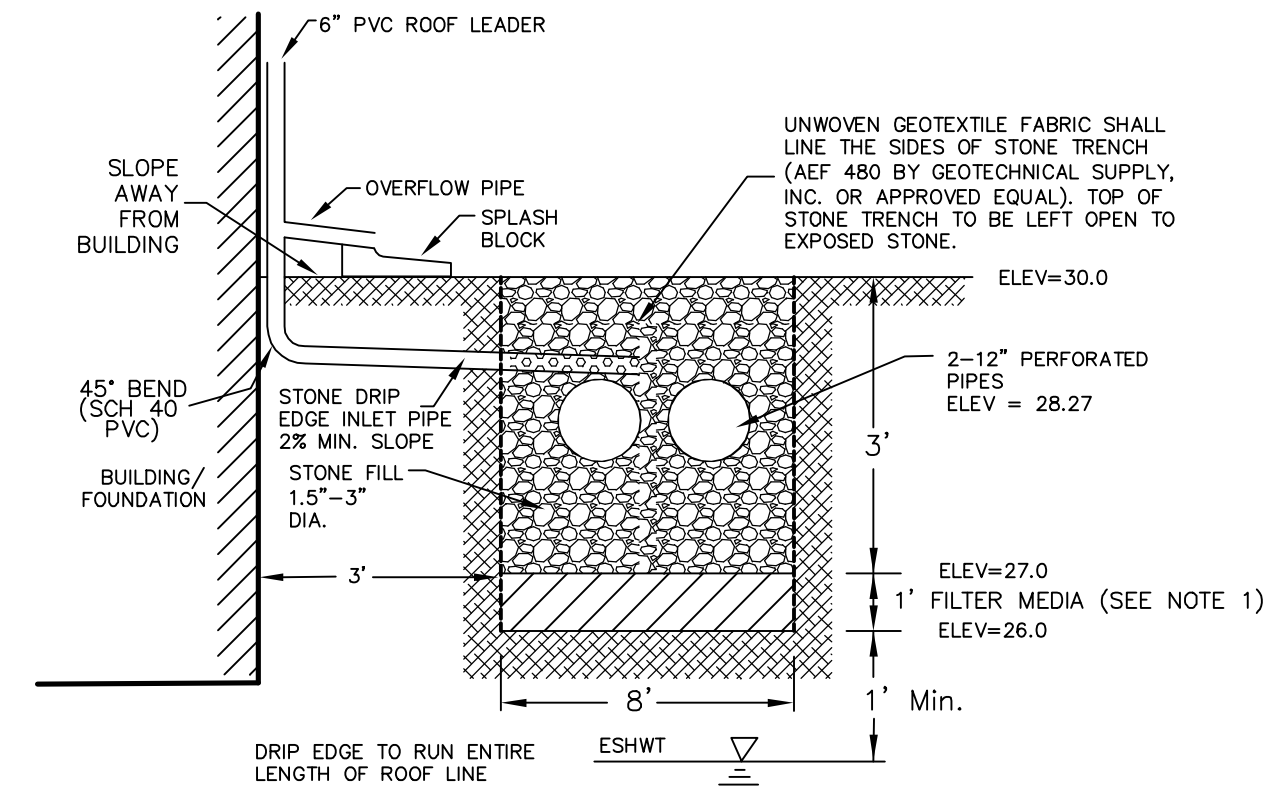
POROUS PAVEMENT SIGN DETAIL

NOT TO SCALE



12" OVERFLOW RISER WITH DOME GRATE

NOT TO SCALE



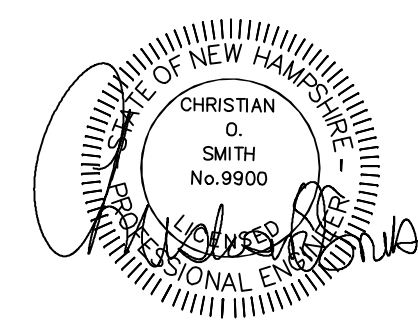
NOTES:

1. FILTER MEDIA MIXTURE SHALL BE 20% COMPOST/FINELY SHREDDED BARK OR WOOD MULCH W/<5% PASSING THE #200 SEIVE, 30% LOAMY TOPSOIL, 50% SANDY SOIL (SAND PORTION SHALL BE ASTM C33 FINE AGGREGATE).
2. STONE SHALL BE CLEAN AND WASHED.

STONE INFILTRATION TRENCH SECTION

NOT TO SCALE

FILTER MEDIA MIXTURES			
Component Material	Percent of Mixture by Volume	Gravimetric Slope	Percent by Weight Passing Standard Sieve
Filter Media Option A			
ASTM C-33 concrete sand	50 to 55		
Loamy sand topsoil, with fines as indicated	20 to 30	200	15 to 25
Moderately fine shredded bark or wood fiber mulch, with fines as indicated	20 to 30	200	< 5
Filter Media Option B			
Moderately fine shredded bark or wood fiber mulch, with fines as indicated	20 to 30	200	< 5
Loamy coarse sand	70 to 80	10	85 to 100
		20	70 to 100
		60	15 to 40
		200	8 to 15



PREPARED FOR:
FOSS MOTORS
 133 PORTSMOUTH AVE.
 (NH ROUTE 108)
 EXETER, NEW HAMPSHIRE

BA BEALS ASSOCIATES, PLLC
 70 PORTSMOUTH AVE,
 THIRD FLOOR, SUITE 2
 STRATHAM, N.H. 03885
 PHONE: 603-583-4860,
 FAX: 603-583-4863

CONSTRUCTION DETAILS

COMMERCIAL DEVELOPMENT
 ROUTE 108
 EXETER, NH
 TAX MAP 52, LOT 112.2

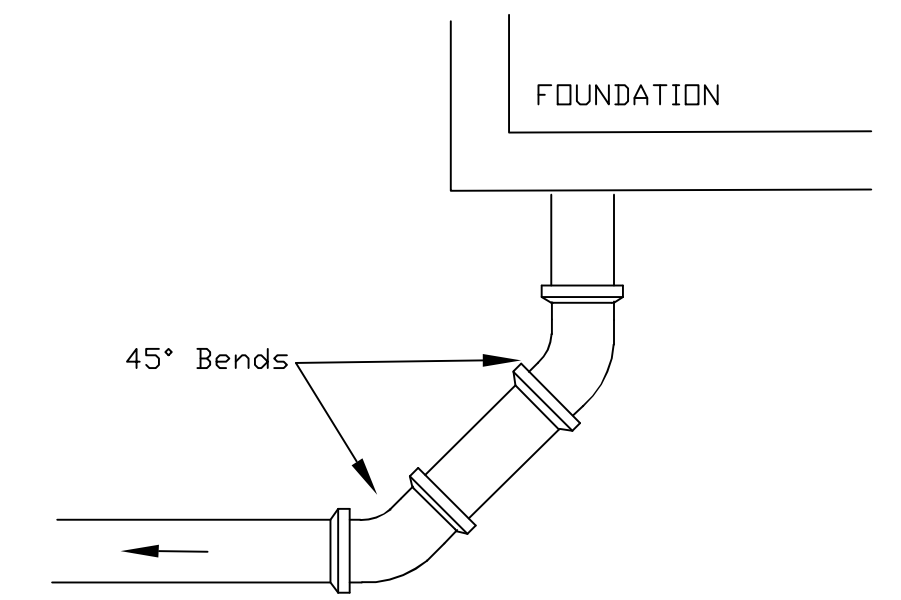
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PROJ. NO:	NH-1471	SHEET NO.	8

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REVISED PER REVIEW COMMENTS	6/27/24
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REVISIONS:	DATE:

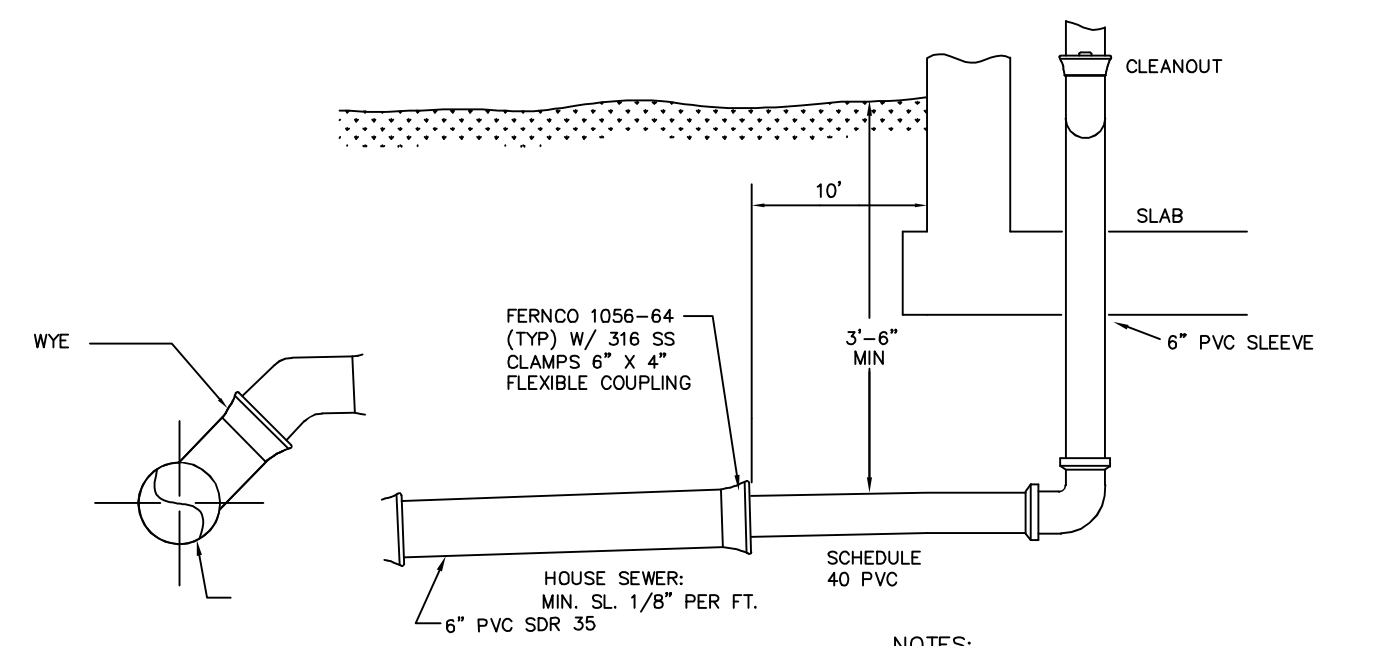
PREPARED FOR:
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 (NH ROUTE 108)
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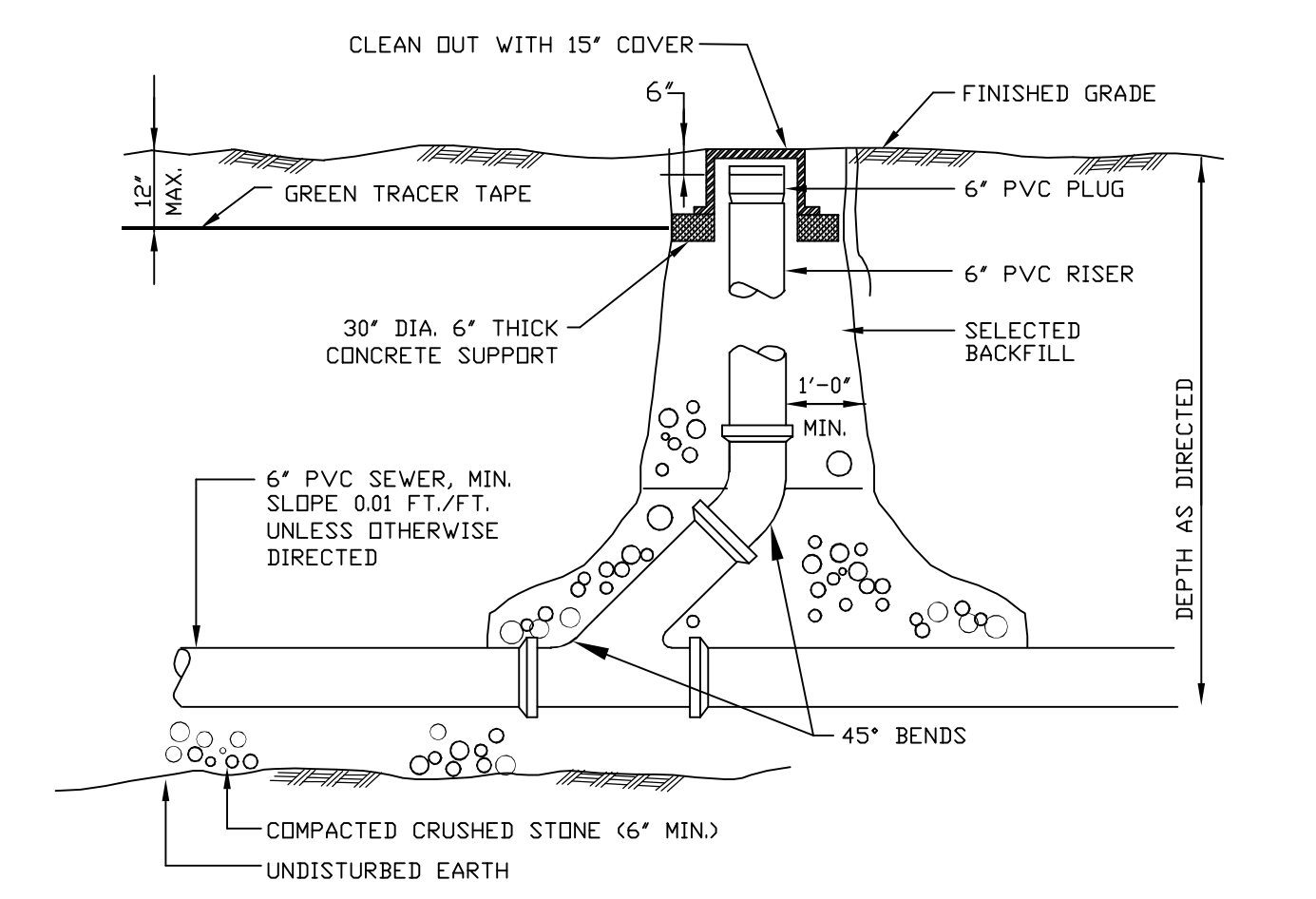
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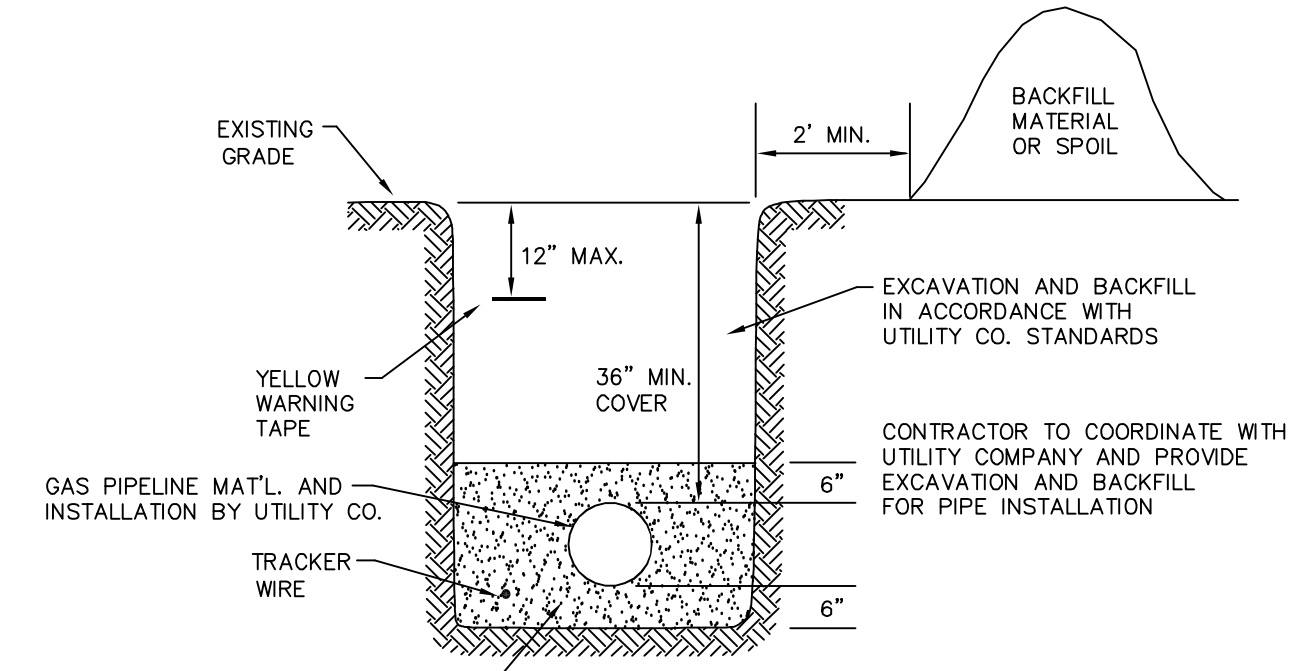
HORIZONTAL DETAIL OF SEWER SERVICE



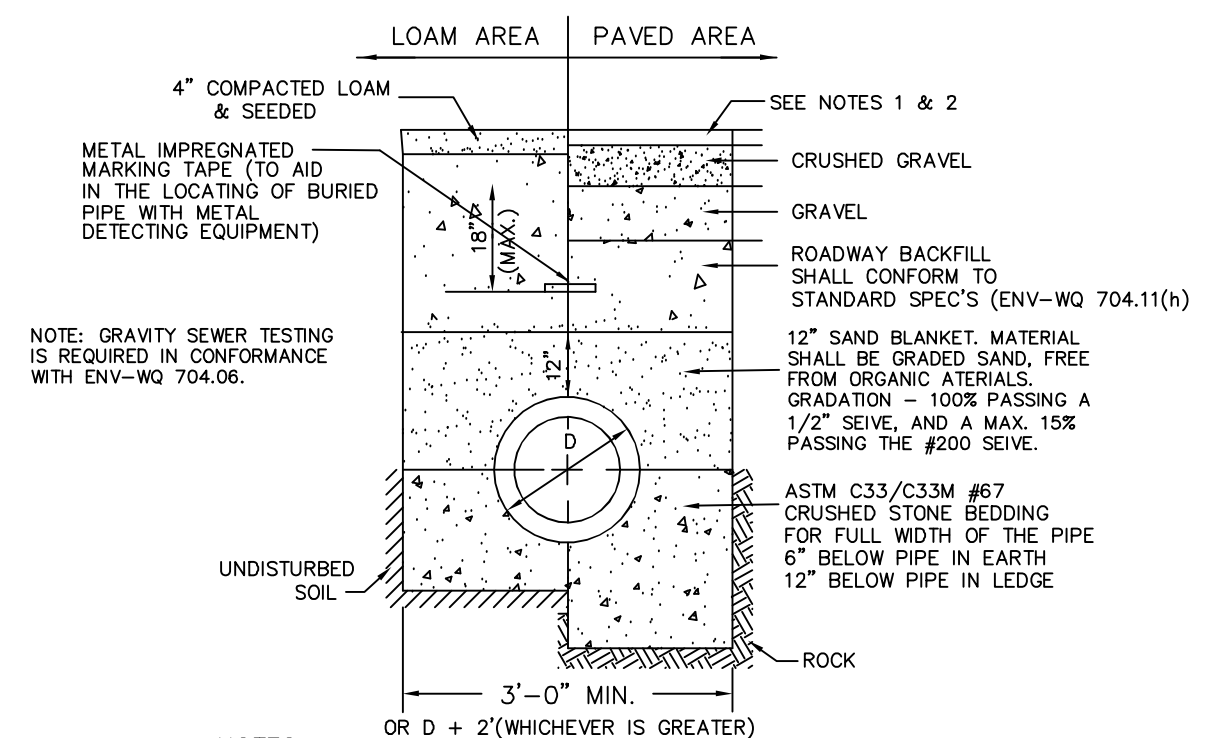
VERTICAL DETAIL OF SEWER SERVICE



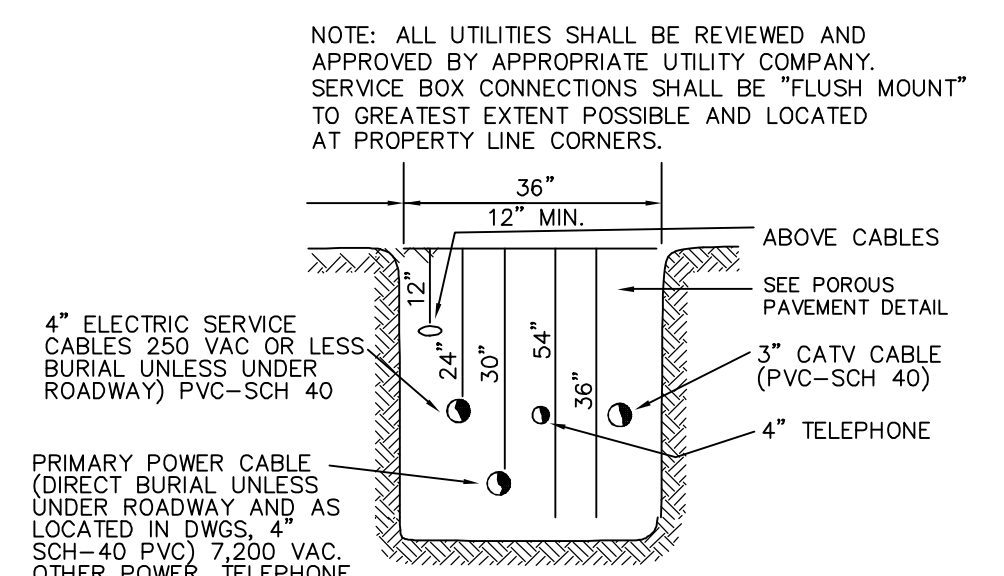
SEWER SERVICE CLEAN OUT
 PVC PIPE SHALL CONFORM WITH ASTM D3034 AND ASTM D2412.
 PVC JOINTS SEALS SHALL CONFORM WITH ASTM D3212



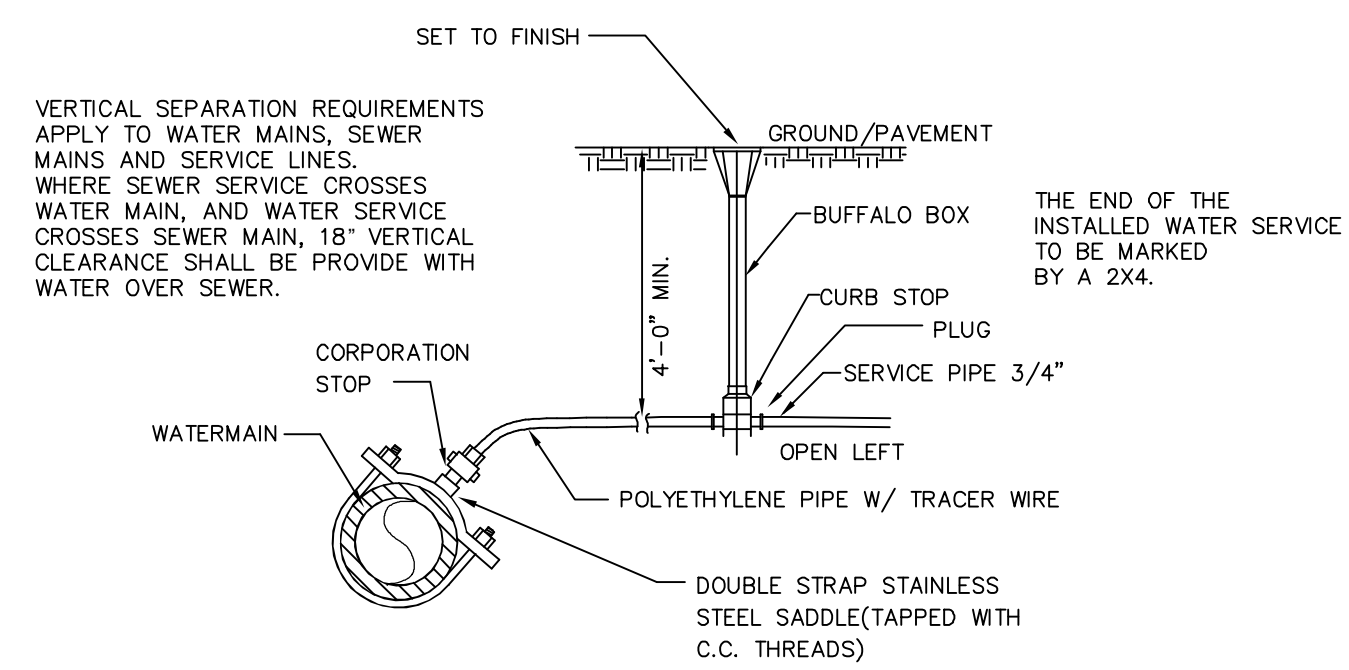
GAS TRENCH DETAIL



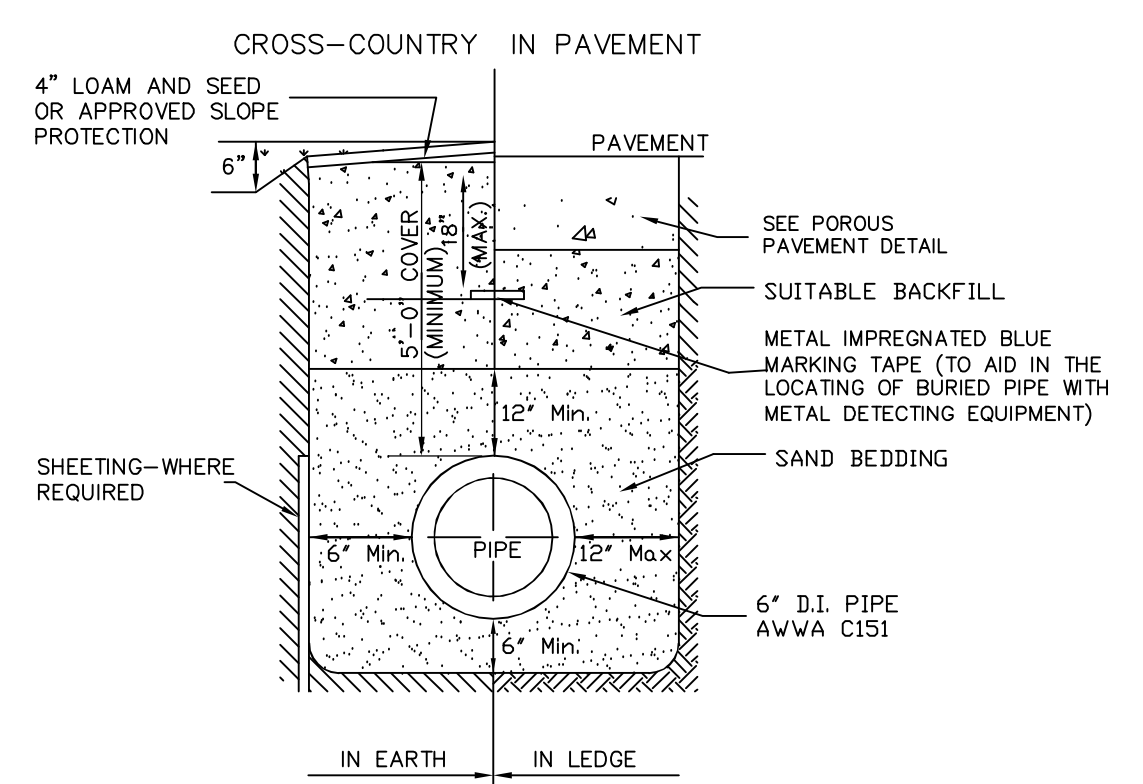
TYPICAL SEWER TRENCH DETAIL



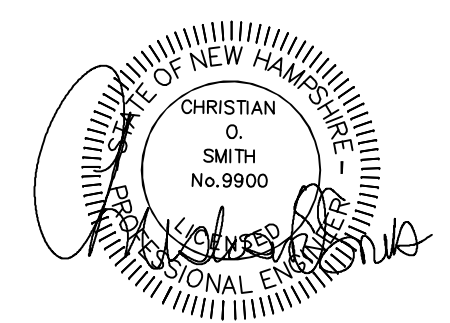
UTILITY TRENCH DETAIL



TYPICAL WATER SERVICE CONNECTION



TYPICAL TRENCH DETAIL FOR WATER SYSTEM



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UTILITY DETAILS

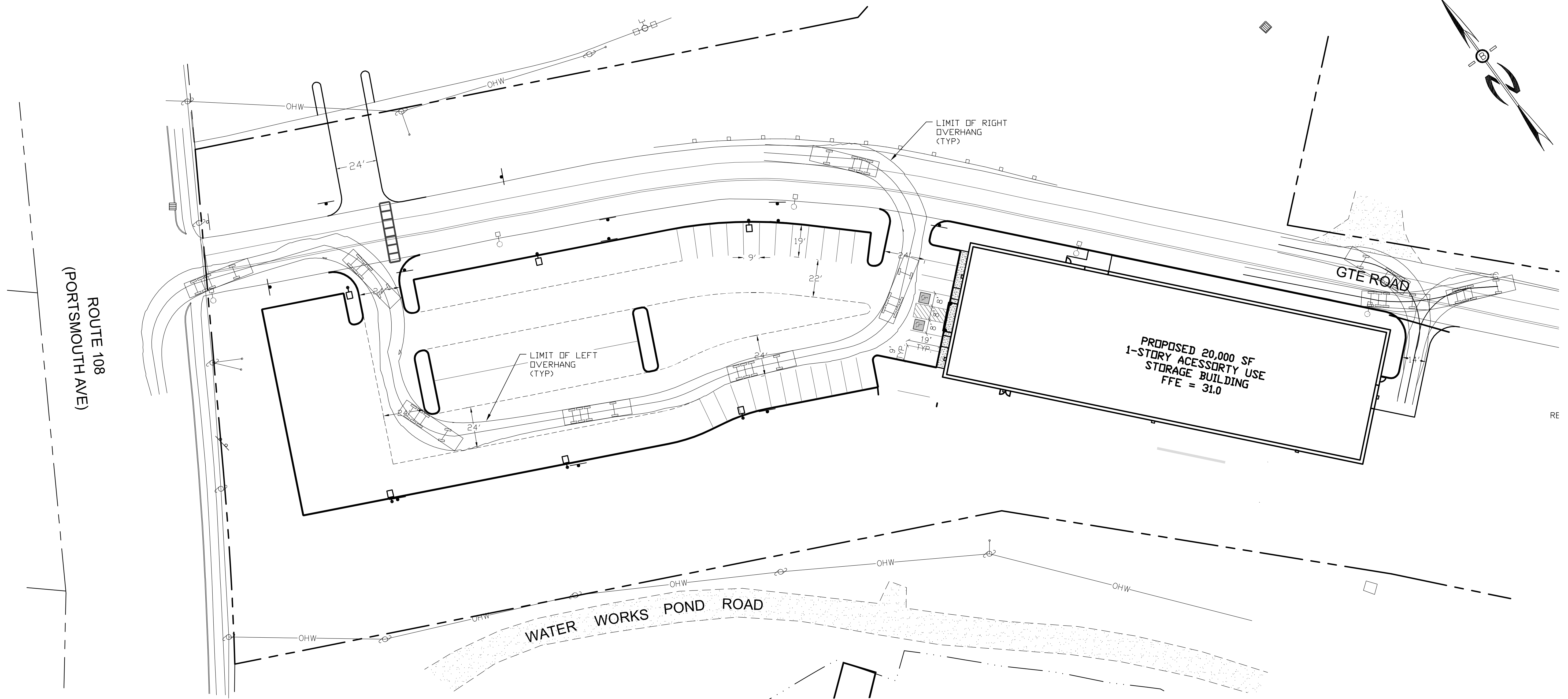
COMMERCIAL DEVELOPMENT
 ROUTE 108
 EXETER, NH
 TAX MAP 52, LOT 112.2

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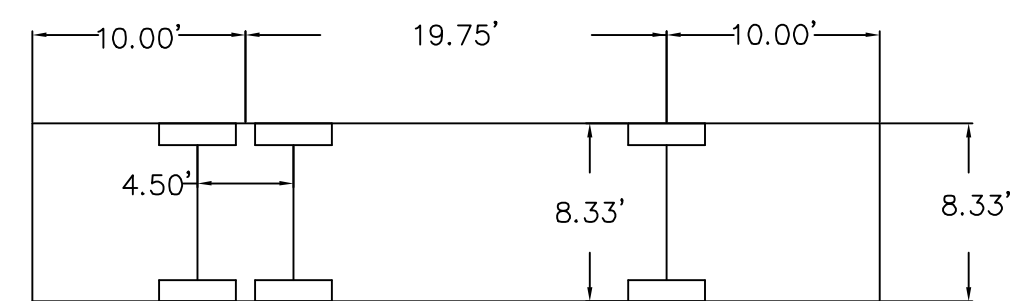
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 (NH ROUTE 108)
 EXETER, NEW HAMPSHIRE

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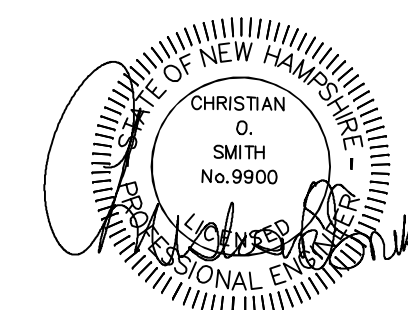
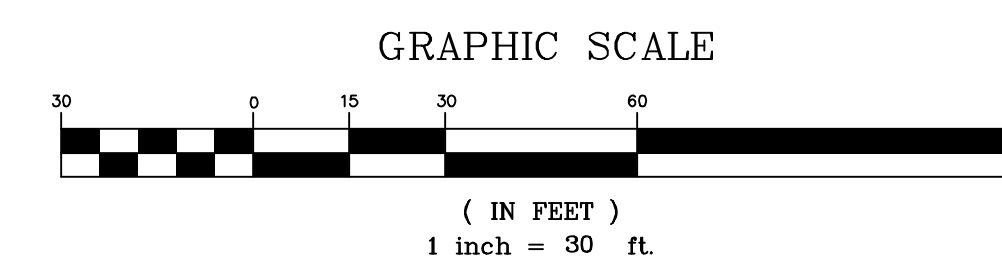
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Exeter Aerial Ladder Truck



Tire Diameter: 3.6 FEET



REVISED PER REVIEW COMMENTS	8/6/24
REVISED PER REVIEW COMMENTS	5/15/24
ADDED PER REVIEW COMMENTS	3/28/24
REVISIONS:	DATE:

EXETER LADDER TRUCK MANEUVERING PLAN	
COMMERCIAL DEVELOPMENT ROUTE 108 EXETER, NH TAX MAP 52, LOT 112.2	
PROJ. NO: NH-1471	SCALE: 1" = 30'
SHEET NO. 10	

DRAINAGE ANALYSIS & SEDIMENT AND EROSION CONTROL PLAN

Prepared for:
FOSS MOTORS
COMMERCIAL SITE PLAN

Prepared by:
BEALS ASSOCIATES, PLLC
70 PORTSMOUTH AVENUE
STRATHAM, NH 03885

Project Number:
NH-1471
133 Portsmouth Avenue / NH Route 108
Exeter, New Hampshire
February 13, 2024
Revised August 6, 2024

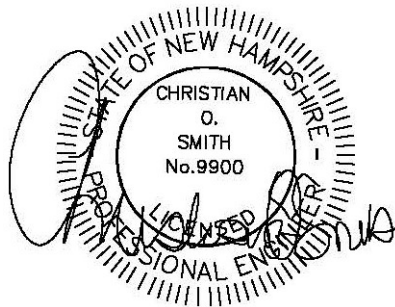


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3.0	Proposed Subdivision Analysis	Pages 2-3
4.0	Sediment & Erosion Control Best Management Practices	Pages 3-6
5.0	Conclusion	Page 6

Appendix I - Existing Conditions Analysis

WQV (1-Inch) 24 Hour Summary
2-Year 24-Hour Summary
10-Year 24-Hour Complete
25-Year 24-Hour Summary
50-Year 24-Hour Summary

Appendix II - Proposed Conditions Analysis

WQV (1-Inch) 24 Hour Summary
2-Year 24-Hour Summary
10-Year 24-Hour Complete
25-Year 24-Hour Summary
50-Year 24-Hour Summary

Appendix III - Charts, Graphs, and Calculations

Appendix IV - Plans

USGS Quadrangle

Sheet W-1 Existing Conditions Watershed Plan

Sheet W-2 Proposed Conditions Watershed Plan

1.0 ANALYSIS SUMMARY

Foss Motors proposes to construct a commercial site plan to establish a 20,000 sf storage accessory use to the existing car dealership located on the parcel to the north on Portsmouth Avenue (NH Route 108) in Exeter New Hampshire. A drainage analysis of 6.2 acres of the proposed site improvement was conducted for the purpose of estimating the peak rate of stormwater run-off and to subsequently design adequate drainage structures. Two models were compiled: one for the area in its existing (pre-construction) condition and a second for its proposed (post-construction) condition. The analysis was conducted using Extreme Precipitation data provided by Cornell University for the following 24-hour duration storm events, including increasing all 24-hour rainfall data by 15% as required since Exeter is within the designated “coastal region” by NHDES:

Storm Event	Rainfall Depth (inches)
WQV	1.00
2-Year	3.70
10-Year	5.65
25-Year	7.19
50-Year	8.63

These storm events use the USDA SCS TR-20 method within the HydroCAD Stormwater Modeling System environment to model the rainfall and predict stormwater runoff flows and volumes. A Type III storm pattern was used in the model. The purpose of this analysis is to estimate the peak rates of run-off from the site for detention adequacy purposes, and to compare the peak rate of run-off between the existing and proposed conditions.

Peak Rate of Discharge

Analysis Point # Analysis Point Description	Condition	Component Peak Rate of Discharge (CFS)				
		WQV	2-Year	10-Year	25-Year	50-Year
Reach #100 - Southwest	Existing	0.34	4.99	10.59	15.41	20.08
	Proposed	0.42	4.54	9.20	14.81	20.10
Reach #200 - South	Existing	0.00	0.14	0.67	1.27	1.88
	Proposed	0.00	0.06	0.31	0.57	1.86
Reach #300 - Southeast	Existing	0.02	0.16	0.54	0.92	1.34
	Proposed	0.02	0.16	0.54	0.92	1.34

Channel Protection

Analysis Point # Analysis Point Description	Condition	2-Year Storm Volume (Acre-Feet)
Reach #100 - Southwest	Existing	0.603
	Proposed	0.567
Reach #200 - South	Existing	0.025
	Proposed	0.010
Reach #300 - Southeast	Existing	0.025
	Proposed	0.025

Channel protection volumes are either reduced or match when comparing post-development to pre-development. With the exceptions of Reach #100’s WQV and 50-year storm events, all post-development storm events either reduce or match the pre-development peak discharge rates. While those minor increases are shown to Reach #100 under the WQV & 50-Year storms, this mathematical tolerance of the HydroCAD stormwater modeling software falls within the “scientific uncertainty and mathematical rounding” designated in Env-Wq 1507.05(c) and should not be considered an increase. The volume for WQV storm is the same in pre- and post-development and decreases for the 50-year storm event, therefore providing no increase to the receiving water at Wheelwright Creek.

The proposed storage accessory use includes a paved area for additional vehicle storage and travel ways. Other than the entrances from GTE Road into the site, the parking area consists of porous pavement. The proposed improvement area includes three separate subcatchments. The peak rate of run-off in the proposed conditions is controlled with the addition of the porous pavement and a stone infiltration trench along with altering subcatchments to reduce the runoff. All new pavement and roof runoff receives treatment from filter media within the porous pavement and stone infiltration trench prior to discharging towards the adjacent wetlands and storage to the north. In addition, the potential for increased erosion and sedimentation is handled by way of silt barriers surrounding the disturbed areas. The use of Best Management Practices per the Rockingham Conservation District / DES Handbook have been applied to the design of these structures and will be observed during all stages of construction. All land disturbed during construction will be stabilized within 30 days of groundbreaking. Existing wetlands and abutters will suffer no adverse effects resulting from this proposed development.

2.0 EXISTING CONDITIONS ANALYSIS

The existing property is located on a parcel consisting of a paved roadway, lawn area, brush, and woodlands with wetlands in and adjacent to the site. The existing topography is such that the site analysis is divided into three subcatchments within the area proposed to be improved. Final Reach #100 flows to the existing wetland and storage area to the northeast of the proposed improvement area and ultimately through the existing 36-inch culvert through the site, Reach #200 flows towards the south towards the Exeter Reservoir, and Reach #300 flows towards the southeast towards the Exeter Reservoir.

Classified by Site-Specific Soil Mapping within the developed areas and NRCS Soil Survey for other contributing areas, the site is composed of relatively flat slopes and soils categorized into the Hydrologic Soil Groups (HSG) B and C.

3.0 PROPOSED CONDITIONS ANALYSIS

The addition of the impervious area, clearing of trees, and re-grading of the site causes an increase in the curve number (Cn) and a decrease in the time of concentration (Tc) which results in a potential increase in peak rates of run-off from the site. To reduce these flows to pre-development conditions, various stormwater management systems will be proposed. Porous pavement is provided within the parking area that includes a pipe network with catchbasins and underdrains. Additionally, a stone infiltration trench along the southern end of the building captures, treats, and stores runoff from the roof, a portion of GTE Road, and the pavement for the firetruck turnaround and access to the building's rear overhead door. The proposed development divides the site into three similar post-construction subcatchments (Reach #300 being identical to the pre-development condition). The runoff is directed to the points of analysis through HydroCAD "reaches" and "ponds".

During construction, appropriate Best Management Practices (BMP's) will be applied so as to negate the potential for sediment-laden run-off to discharge off-site prior to the final stabilization of the proposed grading. The structures outlined in this proposal provide for adequate treatment of stormwater run-off for sediment control.

4.0 SEDIMENT & EROSION CONTROL PLANS **BEST MANAGEMENT PRACTICES (BMP's)**

The proposed site development is protected from erosion and the roadways and abutting properties are protected from sediment by the use of Best Management Practices as outlined in the New Hampshire Stormwater Manual. Any area disturbed by construction will be re-stabilized within 30 days, and abutting properties and wetlands will not be adversely affected by this development. All swales and drainage structures will be constructed and stabilized prior to having run-off directed to them.

4.1 Silt Barrier / Construction Fence

The plan set demonstrates the location of silt barriers for sediment control. Sheet E-1, Erosion and Sediment Control Details, has the specifications for installation and maintenance of the silt barriers selected for the site. In areas where the limits of construction need to be emphasized to operators, construction fence for added visibility will be installed. Orange construction fence will be VISI Perimeter Fence by Conwed Plastic Fencing, or approved equal. The four-foot construction fencing is to be installed using six-foot posts buried at least two feet into the ground spaced six to eight feet apart.

4.2 Vegetated Stabilization

All areas that are disturbed during construction will be stabilized with vegetated material within 30 days of disturbance. Construction will be managed in such a manner that erosion is prevented and that no abutter's property will be subjected to any siltation, unless otherwise permitted. All areas to be planted with grass for long-term cover will follow the specifications on Sheet E-1 using the seeding mixture below:

Mixture C	Pounds per Acre	Pounds per 1,000 sf
Tall Fescue	20	0.45
Creeping Red Fescue	20	0.45
Birdsfoot Trefoil	8	0.20
Total	48	1.10

4.3 Stabilized Construction Entrance/Exit

A temporary gravel construction entrance/exit provides an area where mud can be dislodged from tires before the vehicle leaves the construction site to reduce the amount of mud and sediment transported onto paved municipal and state roads. The stone size for the gravel pad should be between 1- and 2-inch coarse aggregate and the pad itself constructed to a minimum length of 50' for the full width of the access road. The aggregate should be placed at least six inches thick. Plan and profile view details are shown on Sheet E1 - Sediment and Erosion Control Detail Plan.

4.2 Drainage Swales / Stormwater Conveyance Channels

Drainage swales will be stabilized with vegetation for long term cover as outlined below using seed mixture C. As a general rule, velocities in the swale should not exceed 3.0 feet per second for a vegetated swale although velocities as high as 4.5 FPS are allowed under certain soil conditions.

4.5 Level Spreaders

Level spreaders enable any run-off directed towards them to be spread evenly into sheet flow prior to discharge into wetlands or treatment by a filter strip, thus allowing for better filter strip efficiency and a lesser potential for erosion.

4.6 Vegetated Buffers

Vegetated buffers are areas of land with natural or planted vegetation designed to receive sheet run-off from upgradient development. These natural areas, preferably wooded, are effective in removing sediment and sediment-laden pollutants from such run-off, although their effectiveness is severely diminished when forced to deal with concentrated flow and must therefore be equipped with a level-spreading device. Vegetated buffers should not have a slope exceeding fifteen percent and have a minimum length of seventy-five feet.

4.6 Filter Strips

Filter strips are areas of land with natural or planted vegetation designed to receive sheet run-off from upgradient development. These natural areas, preferably wooded, are effective in removing

sediment and sediment-laden pollutants from such run-off, although their effectiveness is severely diminished when forced to deal with concentrated flow and must therefore be equipped with a level-spreading device. Filter strips should not have a slope exceeding fifteen percent and have a minimum length of seventy-five feet.

4.4 Environmental Dust Control

Dust will be controlled on the site using multiple Best Management Practices. Mulching and temporary seeding will be the first line of protection to be utilized where problems occur. If dust problems are not solved by these applications, the use of water and calcium chloride can be applied. Calcium chloride will be applied at a rate that will keep the surface moist but not cause pollution.

4.5 Construction Sequence

1. Cut and remove trees in construction areas as directed or required.
2. Construct and/or install temporary and permanent sediment erosion and detention control facilities, as required. Erosion, sediment, and facilities shall be installed and stabilized prior to any earth moving operation, and prior to directing run-off to them.
3. Clear, cut, grub, and dispose of debris in approved facilities.
4. Excavate and stockpile topsoil / loam. All disturbed areas shall be stabilized immediately after grading.
5. Construct the paved area, underground detention pond with associated drainage structures, and building.
6. Begin permanent and temporary seeding and mulching. All cut and fill slopes and disturbed areas shall be seeded and mulched as required or directed.
7. Daily, or as required, construct temporary berms, drainage ditches, sediment traps, etc. to prevent erosion on the site and prevent any siltation of abutting waters or property.
8. Inspect and maintain all erosion and sediment control measures during construction.
9. Complete permanent seeding and landscaping.
10. Remove temporary erosion control measures after seeding areas have established themselves and site improvements are complete. Smooth and re-vegetate all disturbed areas.
11. All swales and drainage structures will be constructed and stabilized prior to having run-off being directed to them.

4.6 Temporary Erosion Control Measures

1. The smallest practical area of land shall be exposed at any one time.

2. Erosion and sediment control measures shall be installed as shown on the plans and at locations as required, or directed by the engineer.
3. All disturbed areas shall be returned to original grades and elevations. Disturbed areas shall be loamed with a minimum of 4" of loam and seeded with not less than 1.10 pound of seed per 1,000 square feet (48 pounds per acre) of area.
4. Silt barriers shall be inspected periodically and after every rainstorm during the life of the project. All damaged areas shall be repaired and sediment deposits shall periodically be removed and properly disposed of.
5. After all disturbed areas have been stabilized, the temporary erosion control measures are to be removed and the area disturbed by the removal smoothed and revegetated.
6. Areas must be seeded and mulched within 5 days of final grading, permanently stabilized within 15 days of final grading, or temporarily stabilized within 30 days of initial disturbance of soil.

4.7 Inspection and Maintenance Schedule

Silt barriers shall be inspected during and after storm events to ensure that the fence still has integrity and is not allowing sediment to pass.

5.0 CONCLUSION

This proposed site development on Portsmouth Avenue (NH Route 108) in Exeter, NH will have no adverse effect on the abutting property owners by way of stormwater run-off or siltation. Appropriate steps will be taken to eliminate erosion and sedimentation; these will be accomplished through the construction of a drainage system consisting of porous pavement and a stone infiltration trench. The Best Management Practices developed by the State of New Hampshire have been utilized in the design of this system and these applications will be enforced throughout the construction process.

An Alteration of Terrain Permit (RSA 485: A-17) is required for this project due to the area of disturbance being more than 50,000 square feet within a shoreland protection area.

Respectfully Submitted,

BEALS ASSOCIATES, *PLLC*.

Christian O. Smith

Christian O Smith, PE
Principal

Appendix I

Existing Conditions Analysis

WQV (1-Inch) 24-Hour Summary

2-Year 24-Hour Summary

10-Year 24-Hour Complete

25-Year 24-Hour Summary

50-Year 24-Hour Summary



North Subcat



Southwest Subcat



Analysis Point - Southwest



Existing Culvert



South Subcat



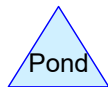
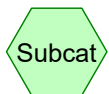
Analysis Point - South



Southeast Subcat



Analysis Point - Southeast



Routing Diagram for NH-1471 Existing

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.023	61	>75% Grass cover, Good, HSG B (3.0)
1.669	74	>75% Grass cover, Good, HSG C (1.1, 1.2, 3.0)
0.011	48	Brush, Good, HSG B (3.0)
0.177	65	Brush, Good, HSG C (1.1, 3.0)
0.580	98	Paved parking, HSG C (1.1, 1.2, 3.0)
1.258	55	Woods, Good, HSG B (1.2, 2.0, 3.0)
2.486	70	Woods, Good, HSG C (1.1, 1.2, 2.0, 3.0)
6.204	70	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.292	HSG B	1.2, 2.0, 3.0
4.913	HSG C	1.1, 1.2, 2.0, 3.0
0.000	HSG D	
0.000	Other	
6.204		TOTAL AREA

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Type III 24-hr 1-INCH Rainfall=1.00"

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Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1.1: North Subcat Runoff Area=98,624 sf 14.64% Impervious Runoff Depth=0.12"
Flow Length=451' Tc=11.1 min CN=WQ Runoff=0.23 cfs 0.023 af

Subcatchment 1.2: Southwest Subcat Runoff Area=121,015 sf 7.86% Impervious Runoff Depth=0.08"
Flow Length=726' Tc=24.3 min CN=WQ Runoff=0.12 cfs 0.017 af

Subcatchment 2.0: South Subcat Runoff Area=30,220 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=179' Tc=15.6 min CN=WQ Runoff=0.00 cfs 0.000 af

Subcatchment 3.0: Southeast Subcat Runoff Area=20,396 sf 6.41% Impervious Runoff Depth=0.05"
Flow Length=153' Tc=17.0 min CN=WQ Runoff=0.02 cfs 0.002 af

Reach #100: Analysis Point - Southwest Inflow=0.34 cfs 0.040 af
Outflow=0.34 cfs 0.040 af

Reach #200: Analysis Point - South Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach #300: Analysis Point - Southeast Inflow=0.02 cfs 0.002 af
Outflow=0.02 cfs 0.002 af

Reach 101R: Existing Culvert Avg. Flow Depth=0.11' Max Vel=2.78 fps Inflow=0.23 cfs 0.023 af
36.0" Round Pipe n=0.013 L=366.0' S=0.0191 '/' Capacity=92.24 cfs Outflow=0.23 cfs 0.023 af

Total Runoff Area = 6.204 ac Runoff Volume = 0.042 af Average Runoff Depth = 0.08"
90.65% Pervious = 5.624 ac 9.35% Impervious = 0.580 ac

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Type III 24-hr 2-YR Rainfall=3.70"

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Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1.1: North Subcat Runoff Area=98,624 sf 14.64% Impervious Runoff Depth=1.49"
Flow Length=451' Tc=11.1 min CN=WQ Runoff=2.86 cfs 0.281 af

Subcatchment 1.2: Southwest Subcat Runoff Area=121,015 sf 7.86% Impervious Runoff Depth=1.39"
Flow Length=726' Tc=24.3 min CN=WQ Runoff=2.58 cfs 0.322 af

Subcatchment 2.0: South Subcat Runoff Area=30,220 sf 0.00% Impervious Runoff Depth=0.43"
Flow Length=179' Tc=15.6 min CN=WQ Runoff=0.14 cfs 0.025 af

Subcatchment 3.0: Southeast Subcat Runoff Area=20,396 sf 6.41% Impervious Runoff Depth=0.64"
Flow Length=153' Tc=17.0 min CN=WQ Runoff=0.16 cfs 0.025 af

Reach #100: Analysis Point - Southwest Inflow=4.99 cfs 0.603 af
Outflow=4.99 cfs 0.603 af

Reach #200: Analysis Point - South Inflow=0.14 cfs 0.025 af
Outflow=0.14 cfs 0.025 af

Reach #300: Analysis Point - Southeast Inflow=0.16 cfs 0.025 af
Outflow=0.16 cfs 0.025 af

Reach 101R: Existing Culvert Avg. Flow Depth=0.37' Max Vel=5.93 fps Inflow=2.86 cfs 0.281 af
36.0" Round Pipe n=0.013 L=366.0' S=0.0191 '/' Capacity=92.24 cfs Outflow=2.92 cfs 0.281 af

Total Runoff Area = 6.204 ac Runoff Volume = 0.652 af Average Runoff Depth = 1.26"
90.65% Pervious = 5.624 ac 9.35% Impervious = 0.580 ac

NH-1471 Existing

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Type III 24-hr 10-YR Rainfall=5.65"

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Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1.1: North Subcat Runoff Area=98,624 sf 14.64% Impervious Runoff Depth=2.97"
Flow Length=451' Tc=11.1 min CN=WQ Runoff=5.95 cfs 0.560 af

Subcatchment 1.2: Southwest Subcat Runoff Area=121,015 sf 7.86% Impervious Runoff Depth=2.85"
Flow Length=726' Tc=24.3 min CN=WQ Runoff=5.58 cfs 0.661 af

Subcatchment 2.0: South Subcat Runoff Area=30,220 sf 0.00% Impervious Runoff Depth=1.34"
Flow Length=179' Tc=15.6 min CN=WQ Runoff=0.67 cfs 0.077 af

Subcatchment 3.0: Southeast Subcat Runoff Area=20,396 sf 6.41% Impervious Runoff Depth=1.63"
Flow Length=153' Tc=17.0 min CN=WQ Runoff=0.54 cfs 0.064 af

Reach #100: Analysis Point - Southwest Inflow=10.59 cfs 1.221 af
Outflow=10.59 cfs 1.221 af

Reach #200: Analysis Point - South Inflow=0.67 cfs 0.077 af
Outflow=0.67 cfs 0.077 af

Reach #300: Analysis Point - Southeast Inflow=0.54 cfs 0.064 af
Outflow=0.54 cfs 0.064 af

Reach 101R: Existing Culvert Avg. Flow Depth=0.52' Max Vel=7.37 fps Inflow=5.95 cfs 0.560 af
36.0" Round Pipe n=0.013 L=366.0' S=0.0191 '/' Capacity=92.24 cfs Outflow=6.05 cfs 0.560 af

Total Runoff Area = 6.204 ac Runoff Volume = 1.362 af Average Runoff Depth = 2.63"
90.65% Pervious = 5.624 ac 9.35% Impervious = 0.580 ac

NH-1471 Existing

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Type III 24-hr 10-YR Rainfall=5.65"

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Summary for Subcatchment 1.1: North Subcat

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

Runoff = 5.95 cfs @ 12.17 hrs, Volume= 0.560 af, Depth= 2.97"
 Routed to Reach 101R : Existing Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
7,697	65	Brush, Good, HSG C
62,761	70	Woods, Good, HSG C
13,731	74	>75% Grass cover, Good, HSG C
14,435	98	Paved parking, HSG C
98,624		Weighted Average
84,189		85.36% Pervious Area
14,435		14.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.0360	0.18		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 2.92"
3.4	202	0.0198	0.98		Shallow Concentrated Flow, SCF thru grass Short Grass Pasture Kv= 7.0 fps
3.0	199	0.0498	1.12		Shallow Concentrated Flow, SCF thru woods Woodland Kv= 5.0 fps
11.1	451	Total			

Summary for Subcatchment 1.2: Southwest Subcat

Runoff = 5.58 cfs @ 12.35 hrs, Volume= 0.661 af, Depth= 2.85"
 Routed to Reach #100 : Analysis Point - Southwest

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
7,950	55	Woods, Good, HSG B
44,576	70	Woods, Good, HSG C
58,973	74	>75% Grass cover, Good, HSG C
9,516	98	Paved parking, HSG C
121,015		Weighted Average
111,499		92.14% Pervious Area
9,516		7.86% Impervious Area

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Type III 24-hr 10-YR Rainfall=5.65"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.1060	0.07		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 2.92"
8.9	378	0.0103	0.71		Shallow Concentrated Flow, SCF thru grass Short Grass Pasture Kv= 7.0 fps
3.9	298	0.0637	1.26		Shallow Concentrated Flow, SCF thru woods Woodland Kv= 5.0 fps
24.3	726	Total			

Summary for Subcatchment 2.0: South Subcat

Runoff = 0.67 cfs @ 12.26 hrs, Volume= 0.077 af, Depth= 1.34"
Routed to Reach #200 : Analysis Point - South

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
29,826	55	Woods, Good, HSG B
394	70	Woods, Good, HSG C
30,220		Weighted Average
30,220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	50	0.0640	0.06		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 2.92"
1.5	129	0.0868	1.47		Shallow Concentrated Flow, SCF thru woods Woodland Kv= 5.0 fps
15.6	179	Total			

Summary for Subcatchment 3.0: Southeast Subcat

Runoff = 0.54 cfs @ 12.27 hrs, Volume= 0.064 af, Depth= 1.63"
Routed to Reach #300 : Analysis Point - Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
475	48	Brush, Good, HSG B
17,025	55	Woods, Good, HSG B
983	61	>75% Grass cover, Good, HSG B
29	65	Brush, Good, HSG C
567	70	Woods, Good, HSG C
9	74	>75% Grass cover, Good, HSG C
1,308	98	Paved parking, HSG C
20,396		Weighted Average
19,088		93.59% Pervious Area
1,308		6.41% Impervious Area

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Type III 24-hr 10-YR Rainfall=5.65"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0490	0.05		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 2.92"
1.3	103	0.0728	1.35		Shallow Concentrated Flow, SCF thru woods Woodland Kv= 5.0 fps
17.0	153	Total			

Summary for Reach #100: Analysis Point - Southwest

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.042 ac, 10.90% Impervious, Inflow Depth = 2.91" for 10-YR event
 Inflow = 10.59 cfs @ 12.23 hrs, Volume= 1.221 af
 Outflow = 10.59 cfs @ 12.23 hrs, Volume= 1.221 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Summary for Reach #200: Analysis Point - South

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.694 ac, 0.00% Impervious, Inflow Depth = 1.34" for 10-YR event
 Inflow = 0.67 cfs @ 12.26 hrs, Volume= 0.077 af
 Outflow = 0.67 cfs @ 12.26 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Summary for Reach #300: Analysis Point - Southeast

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.468 ac, 6.41% Impervious, Inflow Depth = 1.63" for 10-YR event
 Inflow = 0.54 cfs @ 12.27 hrs, Volume= 0.064 af
 Outflow = 0.54 cfs @ 12.27 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Summary for Reach 101R: Existing Culvert

[52] Hint: Inlet/Outlet conditions not evaluated

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 2.264 ac, 14.64% Impervious, Inflow Depth = 2.97" for 10-YR event
 Inflow = 5.95 cfs @ 12.17 hrs, Volume= 0.560 af
 Outflow = 6.05 cfs @ 12.19 hrs, Volume= 0.560 af, Atten= 0%, Lag= 1.0 min

Routed to Reach #100 : Analysis Point - Southwest

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Type III 24-hr 10-YR Rainfall=5.65"

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Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Max. Velocity= 7.37 fps, Min. Travel Time= 0.8 min

Avg. Velocity = 2.35 fps, Avg. Travel Time= 2.6 min

Peak Storage= 300 cf @ 12.19 hrs

Average Depth at Peak Storage= 0.52' , Surface Width= 2.27'

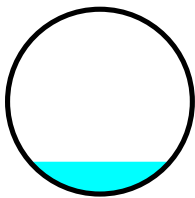
Bank-Full Depth= 3.00' Flow Area= 7.1 sf, Capacity= 92.24 cfs

36.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

Length= 366.0' Slope= 0.0191 '/'

Inlet Invert= 14.10', Outlet Invert= 7.10'



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Type III 24-hr 25-YR Rainfall=7.19"

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Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1.1: North Subcat Runoff Area=98,624 sf 14.64% Impervious Runoff Depth=4.26"
Flow Length=451' Tc=11.1 min CN=WQ Runoff=8.60 cfs 0.804 af

Subcatchment 1.2: Southwest Subcat Runoff Area=121,015 sf 7.86% Impervious Runoff Depth=4.14"
Flow Length=726' Tc=24.3 min CN=WQ Runoff=8.15 cfs 0.958 af

Subcatchment 2.0: South Subcat Runoff Area=30,220 sf 0.00% Impervious Runoff Depth=2.27"
Flow Length=179' Tc=15.6 min CN=WQ Runoff=1.27 cfs 0.131 af

Subcatchment 3.0: Southeast Subcat Runoff Area=20,396 sf 6.41% Impervious Runoff Depth=2.61"
Flow Length=153' Tc=17.0 min CN=WQ Runoff=0.92 cfs 0.102 af

Reach #100: Analysis Point - Southwest Inflow=15.41 cfs 1.761 af
Outflow=15.41 cfs 1.761 af

Reach #200: Analysis Point - South Inflow=1.27 cfs 0.131 af
Outflow=1.27 cfs 0.131 af

Reach #300: Analysis Point - Southeast Inflow=0.92 cfs 0.102 af
Outflow=0.92 cfs 0.102 af

Reach 101R: Existing Culvert Avg. Flow Depth=0.62' Max Vel=8.20 fps Inflow=8.60 cfs 0.804 af
36.0" Round Pipe n=0.013 L=366.0' S=0.0191 '/' Capacity=92.24 cfs Outflow=8.74 cfs 0.804 af

Total Runoff Area = 6.204 ac Runoff Volume = 1.994 af Average Runoff Depth = 3.86"
90.65% Pervious = 5.624 ac 9.35% Impervious = 0.580 ac

NH-1471 Existing

Type III 24-hr 50-YR Rainfall=8.63"

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Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1.1: North Subcat Runoff Area=98,624 sf 14.64% Impervious Runoff Depth=5.53"
Flow Length=451' Tc=11.1 min CN=WQ Runoff=11.16 cfs 1.042 af

Subcatchment 1.2: Southwest Subcat Runoff Area=121,015 sf 7.86% Impervious Runoff Depth=5.39"
Flow Length=726' Tc=24.3 min CN=WQ Runoff=10.65 cfs 1.249 af

Subcatchment 2.0: South Subcat Runoff Area=30,220 sf 0.00% Impervious Runoff Depth=3.25"
Flow Length=179' Tc=15.6 min CN=WQ Runoff=1.88 cfs 0.188 af

Subcatchment 3.0: Southeast Subcat Runoff Area=20,396 sf 6.41% Impervious Runoff Depth=3.62"
Flow Length=153' Tc=17.0 min CN=WQ Runoff=1.34 cfs 0.141 af

Reach #100: Analysis Point - Southwest Inflow=20.08 cfs 2.291 af
Outflow=20.08 cfs 2.291 af

Reach #200: Analysis Point - South Inflow=1.88 cfs 0.188 af
Outflow=1.88 cfs 0.188 af

Reach #300: Analysis Point - Southeast Inflow=1.34 cfs 0.141 af
Outflow=1.34 cfs 0.141 af

Reach 101R: Existing Culvert Avg. Flow Depth=0.71' Max Vel=8.84 fps Inflow=11.16 cfs 1.042 af
36.0" Round Pipe n=0.013 L=366.0' S=0.0191 '/ Capacity=92.24 cfs Outflow=11.33 cfs 1.042 af

Total Runoff Area = 6.204 ac Runoff Volume = 2.620 af Average Runoff Depth = 5.07"
90.65% Pervious = 5.624 ac 9.35% Impervious = 0.580 ac

Appendix II

Proposed Conditions Analysis

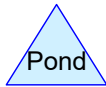
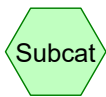
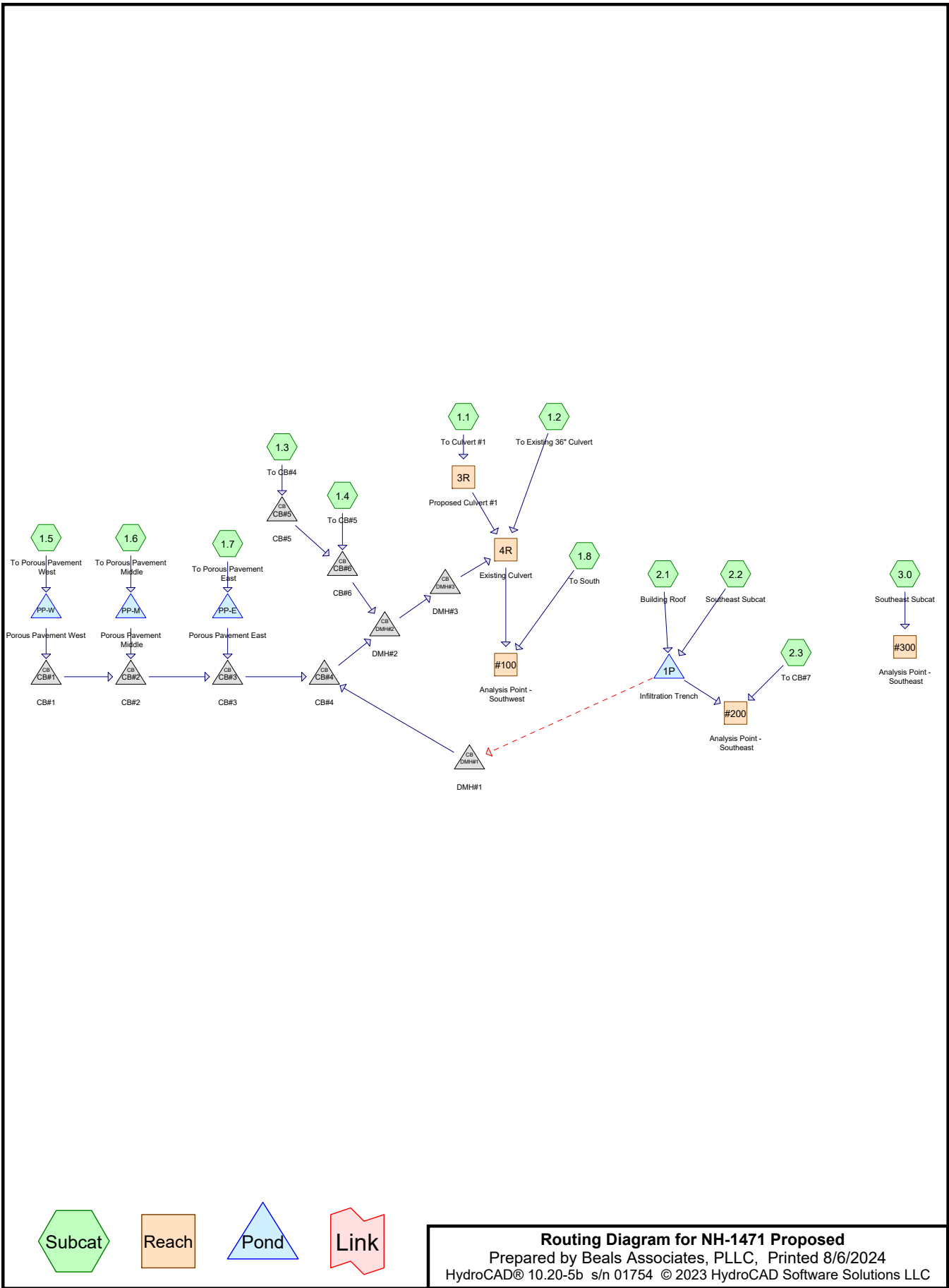
WQV (1-Inch) 24-Hour Summary

2-Year 24-Hour Summary

10-Year 24-Hour Complete

25-Year 24-Hour Summary

50-Year 24-Hour Summary



Routing Diagram for NH-1471 Proposed
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.224	61	>75% Grass cover, Good, HSG B (2.2, 3.0)
0.845	74	>75% Grass cover, Good, HSG C (1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.2, 3.0)
0.011	48	Brush, Good, HSG B (3.0)
0.140	65	Brush, Good, HSG C (1.1, 1.2, 2.2, 3.0)
0.012	98	Paved parking, HSG B (2.2)
1.682	98	Paved parking, HSG C (1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 2.2, 3.0)
0.232	98	Roofs, HSG B (2.1)
0.227	98	Roofs, HSG C (2.1)
0.813	55	Woods, Good, HSG B (1.8, 2.2, 2.3, 3.0)
2.017	70	Woods, Good, HSG C (1.2, 1.8, 2.2, 2.3, 3.0)
6.204	78	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.292	HSG B	1.8, 2.1, 2.2, 2.3, 3.0
4.913	HSG C	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 3.0
0.000	HSG D	
0.000	Other	
6.204		TOTAL AREA

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Type III 24-hr 1-inch Rainfall=1.00"

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Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1.1: To Culvert #1	Runoff Area=5,470 sf 21.55% Impervious Runoff Depth=0.18" Tc=6.0 min CN=WQ Runoff=0.02 cfs 0.002 af
Subcatchment 1.2: To Existing 36" Culvert	Runoff Area=93,154 sf 17.06% Impervious Runoff Depth=0.14" Flow Length=397' Tc=8.4 min CN=WQ Runoff=0.28 cfs 0.025 af
Subcatchment 1.3: To CB#4	Runoff Area=5,291 sf 47.65% Impervious Runoff Depth=0.39" Tc=6.0 min CN=WQ Runoff=0.05 cfs 0.004 af
Subcatchment 1.4: To CB#5	Runoff Area=8,883 sf 59.48% Impervious Runoff Depth=0.48" Flow Length=368' Tc=9.3 min CN=WQ Runoff=0.09 cfs 0.008 af
Subcatchment 1.5: To Porous Pavement	Runoff Area=13,941 sf 88.16% Impervious Runoff Depth=0.70" Flow Length=95' Tc=64.0 min CN=WQ Runoff=0.10 cfs 0.019 af
Subcatchment 1.6: To Porous Pavement	Runoff Area=16,031 sf 98.18% Impervious Runoff Depth=0.78" Flow Length=60' Slope=0.0010 '/ Tc=60.9 min CN=WQ Runoff=0.13 cfs 0.024 af
Subcatchment 1.7: To Porous Pavement	Runoff Area=17,464 sf 98.48% Impervious Runoff Depth=0.78" Flow Length=96' Tc=64.9 min CN=WQ Runoff=0.13 cfs 0.026 af
Subcatchment 1.8: To South	Runoff Area=39,217 sf 0.00% Impervious Runoff Depth=0.01" Flow Length=343' Tc=16.5 min CN=WQ Runoff=0.00 cfs 0.001 af
Subcatchment 2.1: Building Roof	Runoff Area=20,000 sf 100.00% Impervious Runoff Depth=0.79" Tc=6.0 min CN=WQ Runoff=0.38 cfs 0.030 af
Subcatchment 2.2: Southeast Subcat	Runoff Area=18,142 sf 13.15% Impervious Runoff Depth=0.11" Flow Length=186' Tc=9.9 min CN=WQ Runoff=0.04 cfs 0.004 af
Subcatchment 2.3: To CB#7	Runoff Area=12,270 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=170' Tc=11.4 min CN=WQ Runoff=0.00 cfs 0.000 af
Subcatchment 3.0: Southeast Subcat	Runoff Area=20,396 sf 6.41% Impervious Runoff Depth=0.05" Flow Length=153' Tc=17.0 min CN=WQ Runoff=0.02 cfs 0.002 af
Reach #100: Analysis Point - Southwest	Inflow=0.42 cfs 0.040 af Outflow=0.42 cfs 0.040 af
Reach #200: Analysis Point - Southeast	Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Reach #300: Analysis Point - Southeast	Inflow=0.02 cfs 0.002 af Outflow=0.02 cfs 0.002 af
Reach 3R: Proposed Culvert #1	Avg. Flow Depth=0.06' Max Vel=1.07 fps Inflow=0.02 cfs 0.002 af 12.0" Round Pipe n=0.012 L=56.0' S=0.0054 '/ Capacity=2.83 cfs Outflow=0.02 cfs 0.002 af

NH-1471 Proposed

Type III 24-hr 1-inch Rainfall=1.00"

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Reach 4R: Existing Culvert Avg. Flow Depth=0.15' Max Vel=3.26 fps Inflow=0.44 cfs 0.039 af
 36.0" Round Pipe n=0.013 L=366.0' S=0.0191 '/' Capacity=92.24 cfs Outflow=0.42 cfs 0.039 af

Pond 1P: Infiltration Trench Peak Elev=26.00' Storage=0 cf Inflow=0.42 cfs 0.034 af
 Discarded=0.42 cfs 0.034 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.42 cfs 0.034 af

Pond CB#1: CB#1 Peak Elev=23.80' Inflow=0.00 cfs 0.000 af
 12.0" Round Culvert n=0.013 L=86.0' S=0.0050 '/' Outflow=0.00 cfs 0.000 af

Pond CB#2: CB#2 Peak Elev=23.27' Inflow=0.00 cfs 0.000 af
 15.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/' Outflow=0.00 cfs 0.000 af

Pond CB#3: CB#3 Peak Elev=22.54' Inflow=0.00 cfs 0.000 af
 15.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/' Outflow=0.00 cfs 0.000 af

Pond CB#4: CB#4 Peak Elev=21.43' Inflow=0.00 cfs 0.000 af
 12.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/' Outflow=0.00 cfs 0.000 af

Pond CB#5: CB#5 Peak Elev=22.41' Inflow=0.05 cfs 0.004 af
 12.0" Round Culvert n=0.013 L=65.0' S=0.0100 '/' Outflow=0.05 cfs 0.004 af

Pond CB#6: CB#6 Peak Elev=21.73' Inflow=0.14 cfs 0.012 af
 12.0" Round Culvert n=0.013 L=75.0' S=0.0100 '/' Outflow=0.14 cfs 0.012 af

Pond DMH#1: DMH#1 Peak Elev=24.50' Inflow=0.00 cfs 0.000 af
 15.0" Round Culvert n=0.013 L=53.0' S=0.0640 '/' Outflow=0.00 cfs 0.000 af

Pond DMH#2: DMH#2 Peak Elev=19.56' Inflow=0.14 cfs 0.012 af
 18.0" Round Culvert n=0.013 L=65.0' S=0.0051 '/' Outflow=0.14 cfs 0.012 af

Pond DMH#3: DMH#3 Peak Elev=19.24' Inflow=0.14 cfs 0.012 af
 18.0" Round Culvert n=0.013 L=10.0' S=0.0050 '/' Outflow=0.14 cfs 0.012 af

Pond PP-E: Porous Pavement East Peak Elev=23.53' Storage=507 cf Inflow=0.13 cfs 0.026 af
 Discarded=0.02 cfs 0.026 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.026 af

Pond PP-M: Porous Pavement Middle Peak Elev=23.52' Storage=461 cf Inflow=0.13 cfs 0.024 af
 Discarded=0.02 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.024 af

Pond PP-W: Porous Pavement West Peak Elev=23.55' Storage=394 cf Inflow=0.10 cfs 0.019 af
 Discarded=0.01 cfs 0.019 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.019 af

Total Runoff Area = 6.204 ac Runoff Volume = 0.144 af Average Runoff Depth = 0.28"
65.29% Pervious = 4.051 ac 34.71% Impervious = 2.153 ac

NH-1471 Proposed

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Type III 24-hr 2-YR Rainfall=3.70"

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Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1.1: To Culvert #1	Runoff Area=5,470 sf 21.55% Impervious Runoff Depth=1.70" Tc=6.0 min CN=WQ Runoff=0.22 cfs 0.018 af
Subcatchment 1.2: To Existing 36" Culvert	Runoff Area=93,154 sf 17.06% Impervious Runoff Depth=1.55" Flow Length=397' Tc=8.4 min CN=WQ Runoff=3.09 cfs 0.276 af
Subcatchment 1.3: To CB#4	Runoff Area=5,291 sf 47.65% Impervious Runoff Depth=2.37" Tc=6.0 min CN=WQ Runoff=0.29 cfs 0.024 af
Subcatchment 1.4: To CB#5	Runoff Area=8,883 sf 59.48% Impervious Runoff Depth=2.62" Flow Length=368' Tc=9.3 min CN=WQ Runoff=0.48 cfs 0.045 af
Subcatchment 1.5: To Porous Pavement	Runoff Area=13,941 sf 88.16% Impervious Runoff Depth=3.22" Flow Length=95' Tc=64.0 min CN=WQ Runoff=0.42 cfs 0.086 af
Subcatchment 1.6: To Porous Pavement	Runoff Area=16,031 sf 98.18% Impervious Runoff Depth=3.43" Flow Length=60' Slope=0.0010 '/ Tc=60.9 min CN=WQ Runoff=0.52 cfs 0.105 af
Subcatchment 1.7: To Porous Pavement	Runoff Area=17,464 sf 98.48% Impervious Runoff Depth=3.43" Flow Length=96' Tc=64.9 min CN=WQ Runoff=0.55 cfs 0.115 af
Subcatchment 1.8: To South	Runoff Area=39,217 sf 0.00% Impervious Runoff Depth=1.19" Flow Length=343' Tc=16.5 min CN=WQ Runoff=0.82 cfs 0.089 af
Subcatchment 2.1: Building Roof	Runoff Area=20,000 sf 100.00% Impervious Runoff Depth=3.47" Tc=6.0 min CN=WQ Runoff=1.54 cfs 0.133 af
Subcatchment 2.2: Southeast Subcat	Runoff Area=18,142 sf 13.15% Impervious Runoff Depth=1.03" Flow Length=186' Tc=9.9 min CN=WQ Runoff=0.32 cfs 0.036 af
Subcatchment 2.3: To CB#7	Runoff Area=12,270 sf 0.00% Impervious Runoff Depth=0.44" Flow Length=170' Tc=11.4 min CN=WQ Runoff=0.06 cfs 0.010 af
Subcatchment 3.0: Southeast Subcat	Runoff Area=20,396 sf 6.41% Impervious Runoff Depth=0.64" Flow Length=153' Tc=17.0 min CN=WQ Runoff=0.16 cfs 0.025 af
Reach #100: Analysis Point - Southwest	Inflow=4.54 cfs 0.567 af Outflow=4.54 cfs 0.567 af
Reach #200: Analysis Point - Southeast	Inflow=0.06 cfs 0.010 af Outflow=0.06 cfs 0.010 af
Reach #300: Analysis Point - Southeast	Inflow=0.16 cfs 0.025 af Outflow=0.16 cfs 0.025 af
Reach 3R: Proposed Culvert #1	Avg. Flow Depth=0.19' Max Vel=2.11 fps Inflow=0.22 cfs 0.018 af 12.0" Round Pipe n=0.012 L=56.0' S=0.0054 '/ Capacity=2.83 cfs Outflow=0.21 cfs 0.018 af

NH-1471 Proposed

Type III 24-hr 2-YR Rainfall=3.70"

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Reach 4R: Existing Culvert Avg. Flow Depth=0.42' Max Vel=6.39 fps Inflow=4.06 cfs 0.478 af
 36.0" Round Pipe n=0.013 L=366.0' S=0.0191 '/ Capacity=92.24 cfs Outflow=3.92 cfs 0.478 af

Pond 1P: Infiltration Trench Peak Elev=27.74' Storage=1,311 cf Inflow=1.84 cfs 0.168 af
 Discarded=0.51 cfs 0.169 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.51 cfs 0.169 af

Pond CB#1: CB#1 Peak Elev=24.16' Inflow=0.38 cfs 0.032 af
 12.0" Round Culvert n=0.013 L=86.0' S=0.0050 '/ Outflow=0.38 cfs 0.032 af

Pond CB#2: CB#2 Peak Elev=23.70' Inflow=0.65 cfs 0.071 af
 15.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/ Outflow=0.65 cfs 0.071 af

Pond CB#3: CB#3 Peak Elev=23.06' Inflow=0.92 cfs 0.116 af
 15.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/ Outflow=0.92 cfs 0.116 af

Pond CB#4: CB#4 Peak Elev=22.00' Inflow=0.92 cfs 0.116 af
 12.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/ Outflow=0.92 cfs 0.116 af

Pond CB#5: CB#5 Peak Elev=22.57' Inflow=0.29 cfs 0.024 af
 12.0" Round Culvert n=0.013 L=65.0' S=0.0100 '/ Outflow=0.29 cfs 0.024 af

Pond CB#6: CB#6 Peak Elev=21.99' Inflow=0.76 cfs 0.069 af
 12.0" Round Culvert n=0.013 L=75.0' S=0.0100 '/ Outflow=0.76 cfs 0.069 af

Pond DMH#1: DMH#1 Peak Elev=24.50' Inflow=0.00 cfs 0.000 af
 15.0" Round Culvert n=0.013 L=53.0' S=0.0640 '/ Outflow=0.00 cfs 0.000 af

Pond DMH#2: DMH#2 Peak Elev=19.88' Inflow=0.98 cfs 0.184 af
 18.0" Round Culvert n=0.013 L=65.0' S=0.0051 '/ Outflow=0.98 cfs 0.184 af

Pond DMH#3: DMH#3 Peak Elev=19.58' Inflow=0.98 cfs 0.184 af
 18.0" Round Culvert n=0.013 L=10.0' S=0.0050 '/ Outflow=0.98 cfs 0.184 af

Pond PP-E: Porous Pavement East Peak Elev=23.77' Storage=2,123 cf Inflow=0.55 cfs 0.115 af
 Discarded=0.02 cfs 0.070 af Primary=0.29 cfs 0.044 af Outflow=0.31 cfs 0.115 af

Pond PP-M: Porous Pavement Middle Peak Elev=23.78' Storage=2,047 cf Inflow=0.52 cfs 0.105 af
 Discarded=0.02 cfs 0.066 af Primary=0.27 cfs 0.039 af Outflow=0.29 cfs 0.105 af

Pond PP-W: Porous Pavement West Peak Elev=23.88' Storage=1,712 cf Inflow=0.42 cfs 0.086 af
 Discarded=0.02 cfs 0.054 af Primary=0.38 cfs 0.032 af Outflow=0.39 cfs 0.086 af

Total Runoff Area = 6.204 ac Runoff Volume = 0.960 af Average Runoff Depth = 1.86"
65.29% Pervious = 4.051 ac 34.71% Impervious = 2.153 ac

NH-1471 Proposed

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Type III 24-hr 10-YR Rainfall=5.65"

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Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1.1: To Culvert #1	Runoff Area=5,470 sf 21.55% Impervious Runoff Depth=3.24" Tc=6.0 min CN=WQ Runoff=0.42 cfs 0.034 af
Subcatchment 1.2: To Existing 36" Culvert	Runoff Area=93,154 sf 17.06% Impervious Runoff Depth=3.05" Flow Length=397' Tc=8.4 min CN=WQ Runoff=6.36 cfs 0.543 af
Subcatchment 1.3: To CB#4	Runoff Area=5,291 sf 47.65% Impervious Runoff Depth=4.09" Tc=6.0 min CN=WQ Runoff=0.50 cfs 0.041 af
Subcatchment 1.4: To CB#5	Runoff Area=8,883 sf 59.48% Impervious Runoff Depth=4.39" Flow Length=368' Tc=9.3 min CN=WQ Runoff=0.80 cfs 0.075 af
Subcatchment 1.5: To Porous Pavement	Runoff Area=13,941 sf 88.16% Impervious Runoff Depth=5.11" Flow Length=95' Tc=64.0 min CN=WQ Runoff=0.65 cfs 0.136 af
Subcatchment 1.6: To Porous Pavement	Runoff Area=16,031 sf 98.18% Impervious Runoff Depth=5.37" Flow Length=60' Slope=0.0010 '/ Tc=60.9 min CN=WQ Runoff=0.81 cfs 0.165 af
Subcatchment 1.7: To Porous Pavement	Runoff Area=17,464 sf 98.48% Impervious Runoff Depth=5.37" Flow Length=96' Tc=64.9 min CN=WQ Runoff=0.85 cfs 0.180 af
Subcatchment 1.8: To South	Runoff Area=39,217 sf 0.00% Impervious Runoff Depth=2.60" Flow Length=343' Tc=16.5 min CN=WQ Runoff=1.95 cfs 0.195 af
Subcatchment 2.1: Building Roof	Runoff Area=20,000 sf 100.00% Impervious Runoff Depth=5.41" Tc=6.0 min CN=WQ Runoff=2.37 cfs 0.207 af
Subcatchment 2.2: Southeast Subcat	Runoff Area=18,142 sf 13.15% Impervious Runoff Depth=2.23" Flow Length=186' Tc=9.9 min CN=WQ Runoff=0.79 cfs 0.078 af
Subcatchment 2.3: To CB#7	Runoff Area=12,270 sf 0.00% Impervious Runoff Depth=1.36" Flow Length=170' Tc=11.4 min CN=WQ Runoff=0.31 cfs 0.032 af
Subcatchment 3.0: Southeast Subcat	Runoff Area=20,396 sf 6.41% Impervious Runoff Depth=1.63" Flow Length=153' Tc=17.0 min CN=WQ Runoff=0.54 cfs 0.064 af
Reach #100: Analysis Point - Southwest	Inflow=9.20 cfs 1.190 af Outflow=9.20 cfs 1.190 af
Reach #200: Analysis Point - Southeast	Inflow=0.31 cfs 0.032 af Outflow=0.31 cfs 0.032 af
Reach #300: Analysis Point - Southeast	Inflow=0.54 cfs 0.064 af Outflow=0.54 cfs 0.064 af
Reach 3R: Proposed Culvert #1	Avg. Flow Depth=0.26' Max Vel=2.58 fps Inflow=0.42 cfs 0.034 af 12.0" Round Pipe n=0.012 L=56.0' S=0.0054 '/ Capacity=2.83 cfs Outflow=0.42 cfs 0.034 af

NH-1471 Proposed

Type III 24-hr 10-YR Rainfall=5.65"

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Reach 4R: Existing Culvert Avg. Flow Depth=0.59' Max Vel=7.88 fps Inflow=8.08 cfs 0.995 af
 36.0" Round Pipe n=0.013 L=366.0' S=0.0191 '/' Capacity=92.24 cfs Outflow=7.83 cfs 0.995 af

Pond 1P: Infiltration Trench Peak Elev=29.27' Storage=2,655 cf Inflow=3.13 cfs 0.285 af
 Discarded=0.51 cfs 0.261 af Primary=0.00 cfs 0.000 af Secondary=0.83 cfs 0.024 af Outflow=1.34 cfs 0.285 af

Pond CB#1: CB#1 Peak Elev=24.46' Inflow=1.16 cfs 0.080 af
 12.0" Round Culvert n=0.013 L=86.0' S=0.0050 '/' Outflow=1.16 cfs 0.080 af

Pond CB#2: CB#2 Peak Elev=24.03' Inflow=1.82 cfs 0.174 af
 15.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/' Outflow=1.82 cfs 0.174 af

Pond CB#3: CB#3 Peak Elev=23.43' Inflow=2.41 cfs 0.278 af
 15.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/' Outflow=2.41 cfs 0.278 af

Pond CB#4: CB#4 Peak Elev=22.50' Inflow=2.41 cfs 0.302 af
 12.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/' Outflow=2.41 cfs 0.302 af

Pond CB#5: CB#5 Peak Elev=22.67' Inflow=0.50 cfs 0.041 af
 12.0" Round Culvert n=0.013 L=65.0' S=0.0100 '/' Outflow=0.50 cfs 0.041 af

Pond CB#6: CB#6 Peak Elev=22.15' Inflow=1.30 cfs 0.116 af
 12.0" Round Culvert n=0.013 L=75.0' S=0.0100 '/' Outflow=1.30 cfs 0.116 af

Pond DMH#1: DMH#1 Peak Elev=24.93' Inflow=0.83 cfs 0.024 af
 15.0" Round Culvert n=0.013 L=53.0' S=0.0640 '/' Outflow=0.83 cfs 0.024 af

Pond DMH#2: DMH#2 Peak Elev=20.23' Inflow=2.53 cfs 0.418 af
 18.0" Round Culvert n=0.013 L=65.0' S=0.0051 '/' Outflow=2.53 cfs 0.418 af

Pond DMH#3: DMH#3 Peak Elev=19.95' Inflow=2.53 cfs 0.418 af
 18.0" Round Culvert n=0.013 L=10.0' S=0.0050 '/' Outflow=2.53 cfs 0.418 af

Pond PP-E: Porous Pavement East Peak Elev=23.82' Storage=2,463 cf Inflow=0.85 cfs 0.180 af
 Discarded=0.02 cfs 0.076 af Primary=0.72 cfs 0.104 af Outflow=0.74 cfs 0.180 af

Pond PP-M: Porous Pavement Middle Peak Elev=23.87' Storage=2,630 cf Inflow=0.81 cfs 0.165 af
 Discarded=0.02 cfs 0.071 af Primary=1.06 cfs 0.094 af Outflow=1.08 cfs 0.165 af

Pond PP-W: Porous Pavement West Peak Elev=24.03' Storage=2,310 cf Inflow=0.65 cfs 0.136 af
 Discarded=0.02 cfs 0.057 af Primary=1.16 cfs 0.080 af Outflow=1.18 cfs 0.136 af

Total Runoff Area = 6.204 ac Runoff Volume = 1.748 af Average Runoff Depth = 3.38"
65.29% Pervious = 4.051 ac 34.71% Impervious = 2.153 ac

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Type III 24-hr 10-YR Rainfall=5.65"

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Summary for Subcatchment 1.1: To Culvert #1

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

Runoff = 0.42 cfs @ 12.10 hrs, Volume= 0.034 af, Depth= 3.24"
Routed to Reach 3R : Proposed Culvert #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
1,384	65	Brush, Good, HSG C
2,907	74	>75% Grass cover, Good, HSG C
1,179	98	Paved parking, HSG C
5,470		Weighted Average
4,291		78.45% Pervious Area
1,179		21.55% Impervious Area

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

Summary for Subcatchment 1.2: To Existing 36" Culvert

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

Runoff = 6.36 cfs @ 12.12 hrs, Volume= 0.543 af, Depth= 3.05"
Routed to Reach 4R : Existing Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
3,820	65	Brush, Good, HSG C
62,762	70	Woods, Good, HSG C
10,684	74	>75% Grass cover, Good, HSG C
15,888	98	Paved parking, HSG C
93,154		Weighted Average
77,266		82.94% Pervious Area
15,888		17.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	50	0.1120	0.28		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 2.92"
2.4	148	0.0224	1.05		Shallow Concentrated Flow, SCF thru grass Short Grass Pasture Kv= 7.0 fps
3.0	199	0.0498	1.12		Shallow Concentrated Flow, SCF thru woods Woodland Kv= 5.0 fps
8.4	397	Total			

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Type III 24-hr 10-YR Rainfall=5.65"

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Summary for Subcatchment 1.3: To CB#4

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

Runoff = 0.50 cfs @ 12.10 hrs, Volume= 0.041 af, Depth= 4.09"
 Routed to Pond CB#5 : CB#5

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
2,770	74	>75% Grass cover, Good, HSG C
2,521	98	Paved parking, HSG C
5,291		Weighted Average
2,770		52.35% Pervious Area
2,521		47.65% Impervious Area

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

Summary for Subcatchment 1.4: To CB#5

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

Runoff = 0.80 cfs @ 12.13 hrs, Volume= 0.075 af, Depth= 4.39"
 Routed to Pond CB#6 : CB#6

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
3,599	74	>75% Grass cover, Good, HSG C
5,284	98	Paved parking, HSG C
8,883		Weighted Average
3,599		40.52% Pervious Area
5,284		59.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	50	0.0150	0.13		Sheet Flow, Sheet Flow - Grass Grass: Short n= 0.150 P2= 2.92"
2.6	313	0.0100	2.03		Shallow Concentrated Flow, SCF - Pavement Paved Kv= 20.3 fps
0.1	5	0.0200	0.99		Shallow Concentrated Flow, SCF - Grass Short Grass Pasture Kv= 7.0 fps
9.3	368	Total			

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Type III 24-hr 10-YR Rainfall=5.65"

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Summary for Subcatchment 1.5: To Porous Pavement West

[47] Hint: Peak is 283% of capacity of segment #3

Runoff = 0.65 cfs @ 12.83 hrs, Volume= 0.136 af, Depth= 5.11"
 Routed to Pond PP-W : Porous Pavement West

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
1,650	74	>75% Grass cover, Good, HSG C
12,291	98	Paved parking, HSG C
13,941		Weighted Average
1,650		11.84% Pervious Area
12,291		88.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	35	0.0490	0.19		Sheet Flow, Sheet Flow - Grass Grass: Short n= 0.150 P2= 2.92"
60.0					Direct Entry, Flow through selects
0.9	60	0.0010	1.17	0.23	Pipe Channel, 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.010 PVC, smooth interior
64.0	95	Total			

Summary for Subcatchment 1.6: To Porous Pavement Middle

[47] Hint: Peak is 350% of capacity of segment #2

Runoff = 0.81 cfs @ 12.78 hrs, Volume= 0.165 af, Depth= 5.37"
 Routed to Pond PP-M : Porous Pavement Middle

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
291	74	>75% Grass cover, Good, HSG C
15,740	98	Paved parking, HSG C
16,031		Weighted Average
291		1.82% Pervious Area
15,740		98.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					Direct Entry, Flow through selects
0.9	60	0.0010	1.17	0.23	Pipe Channel, 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.010 PVC, smooth interior
60.9	60	Total			

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Type III 24-hr 10-YR Rainfall=5.65"

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Summary for Subcatchment 1.7: To Porous Pavement East

[47] Hint: Peak is 368% of capacity of segment #3

Runoff = 0.85 cfs @ 12.84 hrs, Volume= 0.180 af, Depth= 5.37"
 Routed to Pond PP-E : Porous Pavement East

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
266	74	>75% Grass cover, Good, HSG C
17,198	98	Paved parking, HSG C
17,464		Weighted Average
266		1.52% Pervious Area
17,198		98.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	31	0.0200	0.13		Sheet Flow, Sheet Flow - Grass Grass: Short n= 0.150 P2= 2.92"
60.0					Direct Entry, Flow through selects
0.9	65	0.0010	1.17	0.23	Pipe Channel, 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.010 PVC, smooth interior
64.9	96	Total			

Summary for Subcatchment 1.8: To South

Runoff = 1.95 cfs @ 12.24 hrs, Volume= 0.195 af, Depth= 2.60"
 Routed to Reach #100 : Analysis Point - Southwest

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
1,964	55	Woods, Good, HSG B
23,348	70	Woods, Good, HSG C
13,905	74	>75% Grass cover, Good, HSG C
39,217		Weighted Average
39,217		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	50	0.0750	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.92"
3.3	293	0.0869	1.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
16.5	343	Total			

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Type III 24-hr 10-YR Rainfall=5.65"

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Summary for Subcatchment 2.1: Building Roof

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

Runoff = 2.37 cfs @ 12.09 hrs, Volume= 0.207 af, Depth= 5.41"
Routed to Pond 1P : Infiltration Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
10,099	98	Roofs, HSG B
9,901	98	Roofs, HSG C
20,000		Weighted Average
20,000		100.00% Impervious Area

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

Summary for Subcatchment 2.2: Southeast Subcat

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

Runoff = 0.79 cfs @ 12.15 hrs, Volume= 0.078 af, Depth= 2.23"
Routed to Pond 1P : Infiltration Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
4,567	55	Woods, Good, HSG B
8,760	61	>75% Grass cover, Good, HSG B
521	98	Paved parking, HSG B
882	65	Brush, Good, HSG C
810	70	Woods, Good, HSG C
738	74	>75% Grass cover, Good, HSG C
1,864	98	Paved parking, HSG C
18,142		Weighted Average
15,757		86.85% Pervious Area
2,385		13.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	50	0.0580	0.10		Sheet Flow, Sheet Flow - Woods Woods: Light underbrush n= 0.400 P2= 2.92"
1.5	136	0.0449	1.48		Shallow Concentrated Flow, SCF - Grass Short Grass Pasture Kv= 7.0 fps
9.9	186	Total			

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Type III 24-hr 10-YR Rainfall=5.65"

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Summary for Subcatchment 2.3: To CB#7

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

Runoff = 0.31 cfs @ 12.21 hrs, Volume= 0.032 af, Depth= 1.36"
 Routed to Reach #200 : Analysis Point - Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
11,876	55	Woods, Good, HSG B
394	70	Woods, Good, HSG C
12,270		Weighted Average
12,270		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.0440	0.09		Sheet Flow, Sheet Flow - Woods Woods: Light underbrush n= 0.400 P2= 2.92"
2.0	120	0.0401	1.00		Shallow Concentrated Flow, SCF - Woods Woodland Kv= 5.0 fps
11.4	170	Total			

Summary for Subcatchment 3.0: Southeast Subcat

Runoff = 0.54 cfs @ 12.27 hrs, Volume= 0.064 af, Depth= 1.63"
 Routed to Reach #300 : Analysis Point - Southeast

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Type III 24-hr 10-YR Rainfall=5.65"

Area (sf)	CN	Description
475	48	Brush, Good, HSG B
17,025	55	Woods, Good, HSG B
983	61	>75% Grass cover, Good, HSG B
29	65	Brush, Good, HSG C
567	70	Woods, Good, HSG C
9	74	>75% Grass cover, Good, HSG C
1,308	98	Paved parking, HSG C
20,396		Weighted Average
19,088		93.59% Pervious Area
1,308		6.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0490	0.05		Sheet Flow, Sheet Woods: Dense underbrush n= 0.800 P2= 2.92"
1.3	103	0.0728	1.35		Shallow Concentrated Flow, SCF thru woods Woodland Kv= 5.0 fps
17.0	153	Total			

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Type III 24-hr 10-YR Rainfall=5.65"

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Summary for Reach #100: Analysis Point - Southwest

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.579 ac, 35.15% Impervious, Inflow Depth = 3.12" for 10-YR event
Inflow = 9.20 cfs @ 12.15 hrs, Volume= 1.190 af
Outflow = 9.20 cfs @ 12.15 hrs, Volume= 1.190 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Summary for Reach #200: Analysis Point - Southeast

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.157 ac, 44.40% Impervious, Inflow Depth = 0.33" for 10-YR event
Inflow = 0.31 cfs @ 12.21 hrs, Volume= 0.032 af
Outflow = 0.31 cfs @ 12.21 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Summary for Reach #300: Analysis Point - Southeast

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.468 ac, 6.41% Impervious, Inflow Depth = 1.63" for 10-YR event
Inflow = 0.54 cfs @ 12.27 hrs, Volume= 0.064 af
Outflow = 0.54 cfs @ 12.27 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Summary for Reach 3R: Proposed Culvert #1

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.126 ac, 21.55% Impervious, Inflow Depth = 3.24" for 10-YR event
Inflow = 0.42 cfs @ 12.10 hrs, Volume= 0.034 af
Outflow = 0.42 cfs @ 12.10 hrs, Volume= 0.034 af, Atten= 1%, Lag= 0.3 min

Routed to Reach 4R : Existing Culvert

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Max. Velocity= 2.58 fps, Min. Travel Time= 0.4 min

Avg. Velocity = 0.81 fps, Avg. Travel Time= 1.2 min

Peak Storage= 9 cf @ 12.11 hrs

Average Depth at Peak Storage= 0.26' , Surface Width= 0.88'

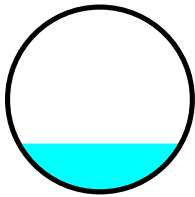
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.83 cfs

12.0" Round Pipe

n= 0.012 Concrete pipe, finished

Length= 56.0' Slope= 0.0054 '/

Inlet Invert= 26.80', Outlet Invert= 26.50'



Summary for Reach 4R: Existing Culvert

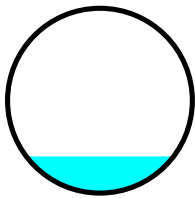
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 3.678 ac, 43.75% Impervious, Inflow Depth = 3.25" for 10-YR event
Inflow = 8.08 cfs @ 12.12 hrs, Volume= 0.995 af
Outflow = 7.83 cfs @ 12.14 hrs, Volume= 0.995 af, Atten= 3%, Lag= 0.9 min
Routed to Reach #100 : Analysis Point - Southwest

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
Max. Velocity= 7.88 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.70 fps, Avg. Travel Time= 2.3 min

Peak Storage= 361 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.59' , Surface Width= 2.39'
Bank-Full Depth= 3.00' Flow Area= 7.1 sf, Capacity= 92.24 cfs

36.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 366.0' Slope= 0.0191 '/'
Inlet Invert= 14.10', Outlet Invert= 7.10'



Summary for Pond 1P: Infiltration Trench

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=43)

Inflow Area = 0.876 ac, 58.69% Impervious, Inflow Depth = 3.90" for 10-YR event
Inflow = 3.13 cfs @ 12.10 hrs, Volume= 0.285 af
Outflow = 1.34 cfs @ 12.38 hrs, Volume= 0.285 af, Atten= 57%, Lag= 16.5 min
Discarded = 0.51 cfs @ 11.80 hrs, Volume= 0.261 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach #200 : Analysis Point - Southeast
Secondary = 0.83 cfs @ 12.38 hrs, Volume= 0.024 af
Routed to Pond DMH#1 : DMH#1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

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Type III 24-hr 10-YR Rainfall=5.65"

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Peak Elev= 29.27' @ 12.38 hrs Surf.Area= 2,200 sf Storage= 2,655 cf
 Flood Elev= 31.00' Surf.Area= 2,200 sf Storage= 5,500 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 23.7 min (792.4 - 768.8)

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	5,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet) Cum.Store (cubic-feet)
26.00	2,200	0.0	0 0
27.00	2,200	30.0	660 660
30.00	2,200	40.0	2,640 3,300
31.00	2,200	100.0	2,200 5,500

Device	Routing	Invert	Outlet Devices
#1	Discarded	26.00'	10.000 in/hr Exfiltration over Surface area
#2	Primary	30.00'	50.0' long x 3.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#3	Secondary	28.59'	12.0" Round Culvert X 2.00 L= 275.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 28.59' / 28.59' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.51 cfs @ 11.80 hrs HW=26.20' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.51 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=26.00' TW=0.00' (Dynamic Tailwater)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.81 cfs @ 12.38 hrs HW=29.26' TW=24.92' (Dynamic Tailwater)
 ↳3=Culvert (Barrel Controls 0.81 cfs @ 1.03 fps)

Summary for Pond CB#1: CB#1

[80] Warning: Exceeded Pond PP-W by 0.46' @ 13.90 hrs (4.11 cfs 1.710 af)

Inflow Area = 0.320 ac, 88.16% Impervious, Inflow Depth = 2.99" for 10-YR event
 Inflow = 1.16 cfs @ 13.90 hrs, Volume= 0.080 af
 Outflow = 1.16 cfs @ 13.90 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.16 cfs @ 13.90 hrs, Volume= 0.080 af
 Routed to Pond CB#2 : CB#2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Peak Elev= 24.46' @ 13.91 hrs
 Flood Elev= 26.90'

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Type III 24-hr 10-YR Rainfall=5.65"

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Device	Routing	Invert	Outlet Devices
#1	Primary	23.80'	12.0" Round Culvert L= 86.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.80' / 23.37' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.99 cfs @ 13.90 hrs HW=24.46' TW=24.03' (Dynamic Tailwater)↑**1=Culvert** (Outlet Controls 0.99 cfs @ 2.56 fps)**Summary for Pond CB#2: CB#2**

[80] Warning: Exceeded Pond PP-M by 0.20' @ 13.90 hrs (2.17 cfs 0.066 af)

Inflow Area = 0.688 ac, 93.52% Impervious, Inflow Depth = 3.03" for 10-YR event
 Inflow = 1.82 cfs @ 13.90 hrs, Volume= 0.174 af
 Outflow = 1.82 cfs @ 13.90 hrs, Volume= 0.174 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.82 cfs @ 13.90 hrs, Volume= 0.174 af
 Routed to Pond CB#3 : CB#3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Peak Elev= 24.03' @ 13.90 hrs

Flood Elev= 26.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	23.27'	15.0" Round Culvert L= 126.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.27' / 22.64' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.61 cfs @ 13.90 hrs HW=24.03' TW=23.38' (Dynamic Tailwater)↑**1=Culvert** (Outlet Controls 1.61 cfs @ 2.98 fps)**Summary for Pond CB#3: CB#3**

Inflow Area = 1.089 ac, 95.35% Impervious, Inflow Depth = 3.06" for 10-YR event
 Inflow = 2.41 cfs @ 13.10 hrs, Volume= 0.278 af
 Outflow = 2.41 cfs @ 13.10 hrs, Volume= 0.278 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.41 cfs @ 13.10 hrs, Volume= 0.278 af
 Routed to Pond CB#4 : CB#4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Peak Elev= 23.43' @ 13.10 hrs

Flood Elev= 27.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	22.54'	15.0" Round Culvert L= 126.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.54' / 21.91' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

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Primary OutFlow Max=2.40 cfs @ 13.10 hrs HW=23.43' TW=22.50' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 2.40 cfs @ 3.59 fps)

Summary for Pond CB#4: CB#4

Inflow Area = 1.089 ac, 95.35% Impervious, Inflow Depth = 3.33" for 10-YR event
 Inflow = 2.41 cfs @ 13.10 hrs, Volume= 0.302 af
 Outflow = 2.41 cfs @ 13.10 hrs, Volume= 0.302 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.41 cfs @ 13.10 hrs, Volume= 0.302 af
 Routed to Pond DMH#2 : DMH#2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Peak Elev= 22.50' @ 13.10 hrs

Flood Elev= 26.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	21.43'	12.0" Round Culvert L= 126.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.43' / 20.80' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.40 cfs @ 13.10 hrs HW=22.50' TW=20.23' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 2.40 cfs @ 3.57 fps)

Summary for Pond CB#5: CB#5

Inflow Area = 0.121 ac, 47.65% Impervious, Inflow Depth = 4.09" for 10-YR event
 Inflow = 0.50 cfs @ 12.10 hrs, Volume= 0.041 af
 Outflow = 0.50 cfs @ 12.10 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.50 cfs @ 12.10 hrs, Volume= 0.041 af
 Routed to Pond CB#6 : CB#6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Peak Elev= 22.67' @ 12.11 hrs

Flood Elev= 26.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	22.30'	12.0" Round Culvert L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 22.30' / 21.65' S= 0.0100 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.44 cfs @ 12.10 hrs HW=22.66' TW=22.15' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 0.44 cfs @ 2.52 fps)

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Summary for Pond CB#6: CB#6

Inflow Area = 0.325 ac, 55.07% Impervious, Inflow Depth = 4.28" for 10-YR event
 Inflow = 1.30 cfs @ 12.11 hrs, Volume= 0.116 af
 Outflow = 1.30 cfs @ 12.11 hrs, Volume= 0.116 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.30 cfs @ 12.11 hrs, Volume= 0.116 af
 Routed to Pond DMH#2 : DMH#2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Peak Elev= 22.15' @ 12.11 hrs
 Flood Elev= 26.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	21.55'	12.0" Round Culvert L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 21.55' / 20.80' S= 0.0100 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.25 cfs @ 12.11 hrs HW=22.14' TW=19.97' (Dynamic Tailwater)
 ↑**1=Culvert** (Barrel Controls 1.25 cfs @ 3.74 fps)

Summary for Pond DMH#1: DMH#1

Inflow = 0.83 cfs @ 12.38 hrs, Volume= 0.024 af
 Outflow = 0.83 cfs @ 12.38 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.83 cfs @ 12.38 hrs, Volume= 0.024 af
 Routed to Pond CB#4 : CB#4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Peak Elev= 24.93' @ 12.38 hrs
 Flood Elev= 30.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	24.50'	15.0" Round Culvert L= 53.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.50' / 21.11' S= 0.0640 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.81 cfs @ 12.38 hrs HW=24.92' TW=21.96' (Dynamic Tailwater)
 ↑**1=Culvert** (Inlet Controls 0.81 cfs @ 2.21 fps)

Summary for Pond DMH#2: DMH#2

Inflow Area = 1.414 ac, 86.08% Impervious, Inflow Depth = 3.55" for 10-YR event
 Inflow = 2.53 cfs @ 13.10 hrs, Volume= 0.418 af
 Outflow = 2.53 cfs @ 13.10 hrs, Volume= 0.418 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.53 cfs @ 13.10 hrs, Volume= 0.418 af
 Routed to Pond DMH#3 : DMH#3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

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Peak Elev= 20.23' @ 13.10 hrs

Flood Elev= 29.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.37'	18.0" Round Culvert L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.37' / 19.04' S= 0.0051 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.81 cfs @ 13.10 hrs HW=20.23' TW=19.95' (Dynamic Tailwater)

↑**1=Culvert** (Outlet Controls 1.81 cfs @ 2.51 fps)

Summary for Pond DMH#3: DMH#3

Inflow Area = 1.414 ac, 86.08% Impervious, Inflow Depth = 3.55" for 10-YR event
Inflow = 2.53 cfs @ 13.10 hrs, Volume= 0.418 af
Outflow = 2.53 cfs @ 13.10 hrs, Volume= 0.418 af, Atten= 0%, Lag= 0.0 min
Primary = 2.53 cfs @ 13.10 hrs, Volume= 0.418 af
Routed to Reach 4R : Existing Culvert

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Peak Elev= 19.95' @ 13.10 hrs

Flood Elev= 23.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.04'	18.0" Round Culvert L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.04' / 18.99' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.52 cfs @ 13.10 hrs HW=19.95' TW=14.45' (Dynamic Tailwater)

↑**1=Culvert** (Barrel Controls 2.52 cfs @ 3.24 fps)

Summary for Pond PP-E: Porous Pavement East

Inflow Area = 0.401 ac, 98.48% Impervious, Inflow Depth = 5.37" for 10-YR event
Inflow = 0.85 cfs @ 12.84 hrs, Volume= 0.180 af
Outflow = 0.74 cfs @ 13.11 hrs, Volume= 0.180 af, Atten= 13%, Lag= 16.2 min
Discarded = 0.02 cfs @ 13.11 hrs, Volume= 0.076 af
Primary = 0.72 cfs @ 13.11 hrs, Volume= 0.104 af
Routed to Pond CB#3 : CB#3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs

Peak Elev= 23.82' @ 13.11 hrs Surf.Area= 16,636 sf Storage= 2,463 cf

Flood Elev= 27.00' Surf.Area= 16,636 sf Storage= 20,296 cf

Plug-Flow detention time= 322.0 min calculated for 0.179 af (100% of inflow)

Center-of-Mass det. time= 323.5 min (1,125.0 - 801.4)

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Volume	Invert	Avail.Storage	Storage Description
#1	23.45'	21,514 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.45	16,636	0.0	0	0
24.45	16,636	40.0	6,654	6,654
24.70	16,636	40.0	1,664	8,318
26.70	16,636	30.0	9,982	18,300
27.03	16,636	40.0	2,196	20,496
27.37	16,636	18.0	1,018	21,514

Device	Routing	Invert	Outlet Devices
#1	Discarded	23.45'	0.048 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 22.33'
#2	Primary	23.68'	6.0" Round Culvert X 15.00 L= 60.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 23.68' / 23.38' S= 0.0050 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.02 cfs @ 13.11 hrs HW=23.82' (Free Discharge)

↑1=Exfiltration (Controls 0.02 cfs)

Primary OutFlow Max=0.72 cfs @ 13.11 hrs HW=23.82' TW=23.41' (Dynamic Tailwater)

↑2=Culvert (Barrel Controls 0.72 cfs @ 1.59 fps)

Summary for Pond PP-M: Porous Pavement Middle

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=18)

Inflow Area = 0.368 ac, 98.18% Impervious, Inflow Depth = 5.37" for 10-YR event
 Inflow = 0.81 cfs @ 12.78 hrs, Volume= 0.165 af
 Outflow = 1.08 cfs @ 13.30 hrs, Volume= 0.165 af, Atten= 0%, Lag= 31.0 min
 Discarded = 0.02 cfs @ 13.23 hrs, Volume= 0.071 af
 Primary = 1.06 cfs @ 13.30 hrs, Volume= 0.094 af
 Routed to Pond CB#2 : CB#2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Peak Elev= 23.87' @ 13.23 hrs Surf.Area= 15,521 sf Storage= 2,630 cf
 Flood Elev= 27.00' Surf.Area= 15,521 sf Storage= 18,936 cf

Plug-Flow detention time= 334.8 min calculated for 0.164 af (100% of inflow)
 Center-of-Mass det. time= 336.4 min (1,134.2 - 797.8)

Volume	Invert	Avail.Storage	Storage Description
#1	23.45'	20,072 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.45	15,521	0.0	0	0
24.45	15,521	40.0	6,208	6,208
24.70	15,521	40.0	1,552	7,761
26.70	15,521	30.0	9,313	17,073
27.03	15,521	40.0	2,049	19,122
27.37	15,521	18.0	950	20,072

Device	Routing	Invert	Outlet Devices
#1	Discarded	23.45'	0.048 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 22.33'
#2	Primary	23.68'	6.0" Round Culvert X 12.00 L= 60.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 23.68' / 23.38' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.02 cfs @ 13.23 hrs HW=23.87' (Free Discharge)
 ↳1=Exfiltration (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 13.30 hrs HW=23.87' TW=23.98' (Dynamic Tailwater)
 ↳2=Culvert (Controls 0.00 cfs)

Summary for Pond PP-W: Porous Pavement West

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=55)

Inflow Area = 0.320 ac, 88.16% Impervious, Inflow Depth = 5.11" for 10-YR event
 Inflow = 0.65 cfs @ 12.83 hrs, Volume= 0.136 af
 Outflow = 1.18 cfs @ 13.90 hrs, Volume= 0.136 af, Atten= 0%, Lag= 64.3 min
 Discarded = 0.02 cfs @ 13.77 hrs, Volume= 0.057 af
 Primary = 1.16 cfs @ 13.90 hrs, Volume= 0.080 af
 Routed to Pond CB#1 : CB#1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.10 hrs
 Peak Elev= 24.03' @ 13.77 hrs Surf.Area= 9,874 sf Storage= 2,310 cf
 Flood Elev= 27.00' Surf.Area= 9,874 sf Storage= 12,046 cf

Plug-Flow detention time= 418.8 min calculated for 0.136 af (100% of inflow)
 Center-of-Mass det. time= 420.9 min (1,226.5 - 805.6)

Volume	Invert	Avail.Storage	Storage Description
#1	23.45'	12,769 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.45	9,874	0.0	0	0
24.45	9,874	40.0	3,950	3,950
24.70	9,874	40.0	987	4,937
26.70	9,874	30.0	5,924	10,861
27.03	9,874	40.0	1,303	12,165
27.37	9,874	18.0	604	12,769

Device	Routing	Invert	Outlet Devices
#1	Discarded	23.45'	0.048 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 22.33'
#2	Primary	23.68'	6.0" Round Culvert X 8.00 L= 60.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 23.68' / 23.38' S= 0.0050 '/ Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.02 cfs @ 13.77 hrs HW=24.03' (Free Discharge)

↑1=Exfiltration (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 13.90 hrs HW=24.00' TW=24.46' (Dynamic Tailwater)

↑2=Culvert (Controls 0.00 cfs)

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Type III 24-hr 25-YR Rainfall=7.19"

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Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1.1: To Culvert #1	Runoff Area=5,470 sf 21.55% Impervious Runoff Depth=4.56" Tc=6.0 min CN=WQ Runoff=0.60 cfs 0.048 af
Subcatchment 1.2: To Existing 36" Culvert	Runoff Area=93,154 sf 17.06% Impervious Runoff Depth=4.35" Flow Length=397' Tc=8.4 min CN=WQ Runoff=9.16 cfs 0.775 af
Subcatchment 1.3: To CB#4	Runoff Area=5,291 sf 47.65% Impervious Runoff Depth=5.51" Tc=6.0 min CN=WQ Runoff=0.67 cfs 0.056 af
Subcatchment 1.4: To CB#5	Runoff Area=8,883 sf 59.48% Impervious Runoff Depth=5.84" Flow Length=368' Tc=9.3 min CN=WQ Runoff=1.07 cfs 0.099 af
Subcatchment 1.5: To Porous Pavement	Runoff Area=13,941 sf 88.16% Impervious Runoff Depth=6.63" Flow Length=95' Tc=64.0 min CN=WQ Runoff=0.84 cfs 0.177 af
Subcatchment 1.6: To Porous Pavement	Runoff Area=16,031 sf 98.18% Impervious Runoff Depth=6.90" Flow Length=60' Slope=0.0010 '/ Tc=60.9 min CN=WQ Runoff=1.03 cfs 0.212 af
Subcatchment 1.7: To Porous Pavement	Runoff Area=17,464 sf 98.48% Impervious Runoff Depth=6.91" Flow Length=96' Tc=64.9 min CN=WQ Runoff=1.08 cfs 0.231 af
Subcatchment 1.8: To South	Runoff Area=39,217 sf 0.00% Impervious Runoff Depth=3.85" Flow Length=343' Tc=16.5 min CN=WQ Runoff=2.91 cfs 0.289 af
Subcatchment 2.1: Building Roof	Runoff Area=20,000 sf 100.00% Impervious Runoff Depth=6.95" Tc=6.0 min CN=WQ Runoff=3.02 cfs 0.266 af
Subcatchment 2.2: Southeast Subcat	Runoff Area=18,142 sf 13.15% Impervious Runoff Depth=3.35" Flow Length=186' Tc=9.9 min CN=WQ Runoff=1.26 cfs 0.116 af
Subcatchment 2.3: To CB#7	Runoff Area=12,270 sf 0.00% Impervious Runoff Depth=2.29" Flow Length=170' Tc=11.4 min CN=WQ Runoff=0.57 cfs 0.054 af
Subcatchment 3.0: Southeast Subcat	Runoff Area=20,396 sf 6.41% Impervious Runoff Depth=2.61" Flow Length=153' Tc=17.0 min CN=WQ Runoff=0.92 cfs 0.102 af
Reach #100: Analysis Point - Southwest	Inflow=14.79 cfs 1.746 af Outflow=14.79 cfs 1.746 af
Reach #200: Analysis Point - Southeast	Inflow=0.57 cfs 0.054 af Outflow=0.57 cfs 0.054 af
Reach #300: Analysis Point - Southeast	Inflow=0.92 cfs 0.102 af Outflow=0.92 cfs 0.102 af
Reach 3R: Proposed Culvert #1	Avg. Flow Depth=0.31' Max Vel=2.85 fps Inflow=0.60 cfs 0.048 af 12.0" Round Pipe n=0.012 L=56.0' S=0.0054 '/ Capacity=2.83 cfs Outflow=0.59 cfs 0.048 af

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Type III 24-hr 25-YR Rainfall=7.19"

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Reach 4R: Existing Culvert Avg. Flow Depth=0.73' Max Vel=8.98 fps Inflow=12.13 cfs 1.457 af
 36.0" Round Pipe n=0.013 L=366.0' S=0.0191 '/' Capacity=92.24 cfs Outflow=12.03 cfs 1.457 af

Pond 1P: Infiltration Trench Peak Elev=29.81' Storage=3,129 cf Inflow=4.21 cfs 0.382 af
 Discarded=0.51 cfs 0.314 af Primary=0.00 cfs 0.000 af Secondary=2.32 cfs 0.069 af Outflow=2.83 cfs 0.383 af

Pond CB#1: CB#1 Peak Elev=24.77' Inflow=2.09 cfs 0.119 af
 12.0" Round Culvert n=0.013 L=86.0' S=0.0050 '/' Outflow=2.09 cfs 0.119 af

Pond CB#2: CB#2 Peak Elev=24.19' Inflow=2.19 cfs 0.258 af
 15.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/' Outflow=2.19 cfs 0.258 af

Pond CB#3: CB#3 Peak Elev=23.60' Inflow=3.23 cfs 0.411 af
 15.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/' Outflow=3.23 cfs 0.411 af

Pond CB#4: CB#4 Peak Elev=23.28' Inflow=3.28 cfs 0.480 af
 12.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/' Outflow=3.28 cfs 0.480 af

Pond CB#5: CB#5 Peak Elev=22.74' Inflow=0.67 cfs 0.056 af
 12.0" Round Culvert n=0.013 L=65.0' S=0.0100 '/' Outflow=0.67 cfs 0.056 af

Pond CB#6: CB#6 Peak Elev=22.27' Inflow=1.73 cfs 0.155 af
 12.0" Round Culvert n=0.013 L=75.0' S=0.0100 '/' Outflow=1.73 cfs 0.155 af

Pond DMH#1: DMH#1 Peak Elev=25.28' Inflow=2.32 cfs 0.069 af
 15.0" Round Culvert n=0.013 L=53.0' S=0.0640 '/' Outflow=2.32 cfs 0.069 af

Pond DMH#2: DMH#2 Peak Elev=20.54' Inflow=3.75 cfs 0.635 af
 18.0" Round Culvert n=0.013 L=65.0' S=0.0051 '/' Outflow=3.75 cfs 0.635 af

Pond DMH#3: DMH#3 Peak Elev=20.18' Inflow=3.75 cfs 0.635 af
 18.0" Round Culvert n=0.013 L=10.0' S=0.0050 '/' Outflow=3.75 cfs 0.635 af

Pond PP-E: Porous Pavement East Peak Elev=23.85' Storage=2,654 cf Inflow=1.08 cfs 0.231 af
 Discarded=0.03 cfs 0.078 af Primary=1.04 cfs 0.153 af Outflow=1.07 cfs 0.231 af

Pond PP-M: Porous Pavement Middle Peak Elev=23.97' Storage=3,218 cf Inflow=1.03 cfs 0.212 af
 Discarded=0.03 cfs 0.073 af Primary=1.95 cfs 0.139 af Outflow=1.97 cfs 0.212 af

Pond PP-W: Porous Pavement West Peak Elev=24.11' Storage=2,603 cf Inflow=0.84 cfs 0.177 af
 Discarded=0.02 cfs 0.058 af Primary=2.09 cfs 0.119 af Outflow=2.11 cfs 0.177 af

Total Runoff Area = 6.204 ac Runoff Volume = 2.423 af Average Runoff Depth = 4.69"
65.29% Pervious = 4.051 ac 34.71% Impervious = 2.153 ac

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Type III 24-hr 50-YR Rainfall=8.63"

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Time span=0.00-72.00 hrs, dt=0.10 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1.1: To Culvert #1	Runoff Area=5,470 sf 21.55% Impervious Tc=6.0 min CN=WQ	Runoff Depth=5.84" Runoff=0.77 cfs 0.061 af
Subcatchment 1.2: To Existing 36" Culvert	Runoff Area=93,154 sf 17.06% Impervious Flow Length=397' Tc=8.4 min CN=WQ	Runoff Depth=5.62" Runoff=11.87 cfs 1.001 af
Subcatchment 1.3: To CB#4	Runoff Area=5,291 sf 47.65% Impervious Tc=6.0 min CN=WQ	Runoff Depth=6.87" Runoff=0.84 cfs 0.070 af
Subcatchment 1.4: To CB#5	Runoff Area=8,883 sf 59.48% Impervious Flow Length=368' Tc=9.3 min CN=WQ	Runoff Depth=7.22" Runoff=1.32 cfs 0.123 af
Subcatchment 1.5: To Porous Pavement	Runoff Area=13,941 sf 88.16% Impervious Flow Length=95' Tc=64.0 min CN=WQ	Runoff Depth=8.05" Runoff=1.02 cfs 0.215 af
Subcatchment 1.6: To Porous Pavement	Runoff Area=16,031 sf 98.18% Impervious Flow Length=60' Slope=0.0010 '/ Tc=60.9 min CN=WQ	Runoff Depth=8.34" Runoff=1.24 cfs 0.256 af
Subcatchment 1.7: To Porous Pavement	Runoff Area=17,464 sf 98.48% Impervious Flow Length=96' Tc=64.9 min CN=WQ	Runoff Depth=8.35" Runoff=1.30 cfs 0.279 af
Subcatchment 1.8: To South	Runoff Area=39,217 sf 0.00% Impervious Flow Length=343' Tc=16.5 min CN=WQ	Runoff Depth=5.09" Runoff=3.85 cfs 0.382 af
Subcatchment 2.1: Building Roof	Runoff Area=20,000 sf 100.00% Impervious Tc=6.0 min CN=WQ	Runoff Depth=8.39" Runoff=3.62 cfs 0.321 af
Subcatchment 2.2: Southeast Subcat	Runoff Area=18,142 sf 13.15% Impervious Flow Length=186' Tc=9.9 min CN=WQ	Runoff Depth=4.47" Runoff=1.71 cfs 0.155 af
Subcatchment 2.3: To CB#7	Runoff Area=12,270 sf 0.00% Impervious Flow Length=170' Tc=11.4 min CN=WQ	Runoff Depth=3.28" Runoff=0.83 cfs 0.077 af
Subcatchment 3.0: Southeast Subcat	Runoff Area=20,396 sf 6.41% Impervious Flow Length=153' Tc=17.0 min CN=WQ	Runoff Depth=3.62" Runoff=1.34 cfs 0.141 af
Reach #100: Analysis Point - Southwest		Inflow=20.10 cfs 2.280 af Outflow=20.10 cfs 2.280 af
Reach #200: Analysis Point - Southeast		Inflow=1.86 cfs 0.086 af Outflow=1.86 cfs 0.086 af
Reach #300: Analysis Point - Southeast		Inflow=1.34 cfs 0.141 af Outflow=1.34 cfs 0.141 af
Reach 3R: Proposed Culvert #1	Avg. Flow Depth=0.35' Max Vel=3.05 fps 12.0" Round Pipe n=0.012 L=56.0' S=0.0054 '/ Capacity=2.83 cfs	Inflow=0.77 cfs 0.061 af Outflow=0.76 cfs 0.061 af

NH-1471 Proposed

Type III 24-hr 50-YR Rainfall=8.63"

Prepared by Beals Associates, PLLC

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Reach 4R: Existing Culvert Avg. Flow Depth=0.86' Max Vel=9.78 fps Inflow=17.16 cfs 1.898 af
 36.0" Round Pipe n=0.013 L=366.0' S=0.0191 '/ Capacity=92.24 cfs Outflow=16.58 cfs 1.898 af

Pond 1P: Infiltration Trench Peak Elev=30.08' Storage=3,476 cf Inflow=5.26 cfs 0.476 af
 Discarded=0.51 cfs 0.361 af Primary=1.03 cfs 0.009 af Secondary=2.72 cfs 0.107 af Outflow=4.23 cfs 0.477 af

Pond CB#1: CB#1 Peak Elev=24.99' Inflow=2.65 cfs 0.156 af
 12.0" Round Culvert n=0.013 L=86.0' S=0.0050 '/ Outflow=2.65 cfs 0.156 af

Pond CB#2: CB#2 Peak Elev=25.41' Inflow=5.70 cfs 0.337 af
 15.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/ Outflow=5.70 cfs 0.337 af

Pond CB#3: CB#3 Peak Elev=25.79' Inflow=7.06 cfs 0.537 af
 15.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/ Outflow=7.06 cfs 0.537 af

Pond CB#4: CB#4 Peak Elev=28.59' Inflow=7.07 cfs 0.644 af
 12.0" Round Culvert n=0.013 L=126.0' S=0.0050 '/ Outflow=7.07 cfs 0.644 af

Pond CB#5: CB#5 Peak Elev=22.80' Inflow=0.84 cfs 0.070 af
 12.0" Round Culvert n=0.013 L=65.0' S=0.0100 '/ Outflow=0.84 cfs 0.070 af

Pond CB#6: CB#6 Peak Elev=22.38' Inflow=2.14 cfs 0.192 af
 12.0" Round Culvert n=0.013 L=75.0' S=0.0100 '/ Outflow=2.14 cfs 0.192 af

Pond DMH#1: DMH#1 Peak Elev=28.58' Inflow=2.72 cfs 0.107 af
 15.0" Round Culvert n=0.013 L=53.0' S=0.0640 '/ Outflow=2.72 cfs 0.107 af

Pond DMH#2: DMH#2 Peak Elev=21.12' Inflow=7.24 cfs 0.836 af
 18.0" Round Culvert n=0.013 L=65.0' S=0.0051 '/ Outflow=7.24 cfs 0.836 af

Pond DMH#3: DMH#3 Peak Elev=20.82' Inflow=7.24 cfs 0.836 af
 18.0" Round Culvert n=0.013 L=10.0' S=0.0050 '/ Outflow=7.24 cfs 0.836 af

Pond PP-E: Porous Pavement East Peak Elev=23.97' Storage=3,453 cf Inflow=1.30 cfs 0.279 af
 Discarded=0.03 cfs 0.080 af Primary=2.51 cfs 0.199 af Outflow=2.54 cfs 0.279 af

Pond PP-M: Porous Pavement Middle Peak Elev=24.14' Storage=4,260 cf Inflow=1.24 cfs 0.256 af
 Discarded=0.03 cfs 0.075 af Primary=3.57 cfs 0.181 af Outflow=3.60 cfs 0.256 af

Pond PP-W: Porous Pavement West Peak Elev=24.18' Storage=2,864 cf Inflow=1.02 cfs 0.215 af
 Discarded=0.02 cfs 0.058 af Primary=2.65 cfs 0.156 af Outflow=2.66 cfs 0.215 af

Total Runoff Area = 6.204 ac Runoff Volume = 3.080 af Average Runoff Depth = 5.96"
65.29% Pervious = 4.051 ac 34.71% Impervious = 2.153 ac

Appendix III

Charts, Graphs, and Calculations

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Metadata for Point	
Smoothing	Yes
State	New Hampshire
Location	New Hampshire, United States
Latitude	42.988 degrees North
Longitude	70.933 degrees West
Elevation	0 feet
Date/Time	Mon Nov 06 2023 13:52:49 GMT-0500 (Eastern Standard Time)

Coastal Region (Add 15%)

2-Year = 3.70 in
 10-Year = 5.65 in
 25-Year = 7.19 in
 50-Year = 8.63 in

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	0.66	0.82	1.04	1yr	0.71	0.99	1.22	1.57	2.05	2.68	2.91	1yr	2.38	2.80	3.21	3.92	4.55	1yr
2yr	0.32	0.50	0.62	0.82	1.02	1.30	2yr	0.88	1.18	1.52	1.94	2.50	3.22	3.57	2yr	2.85	3.44	3.95	4.69	5.34	2yr
5yr	0.37	0.58	0.73	0.98	1.25	1.62	5yr	1.08	1.47	1.90	2.45	3.16	4.10	4.60	5yr	3.63	4.42	5.06	5.98	6.75	5yr
10yr	0.41	0.65	0.83	1.12	1.46	1.90	10yr	1.26	1.73	2.25	2.92	3.78	4.91	5.56	10yr	4.35	5.35	6.10	7.19	8.07	10yr
25yr	0.48	0.77	0.98	1.35	1.79	2.36	25yr	1.55	2.15	2.80	3.67	4.79	6.25	7.16	25yr	5.53	6.88	7.82	9.18	10.22	25yr
50yr	0.54	0.87	1.11	1.56	2.10	2.79	50yr	1.81	2.54	3.33	4.38	5.74	7.50	8.67	50yr	6.64	8.34	9.44	11.06	12.23	50yr
100yr	0.60	0.98	1.26	1.80	2.45	3.30	100yr	2.12	3.00	3.96	5.24	6.88	9.00	10.51	100yr	7.97	10.10	11.40	13.32	14.63	100yr
200yr	0.69	1.12	1.45	2.08	2.87	3.90	200yr	2.48	3.55	4.70	6.24	8.23	10.82	12.73	200yr	9.57	12.24	13.77	16.05	17.52	200yr
500yr	0.82	1.34	1.75	2.54	3.55	4.86	500yr	3.06	4.43	5.88	7.86	10.44	13.78	16.41	500yr	12.20	15.78	17.68	20.55	22.25	500yr

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.60	0.74	0.89	1yr	0.64	0.87	0.94	1.26	1.56	2.28	2.54	1yr	2.02	2.44	2.89	3.39	4.00	1yr
2yr	0.32	0.49	0.60	0.81	1.00	1.19	2yr	0.87	1.16	1.37	1.82	2.33	3.11	3.51	2yr	2.75	3.37	3.86	4.58	5.14	2yr
5yr	0.36	0.55	0.68	0.93	1.19	1.42	5yr	1.03	1.39	1.62	2.12	2.74	3.84	4.29	5yr	3.40	4.13	4.74	5.63	6.35	5yr
10yr	0.39	0.61	0.75	1.05	1.35	1.62	10yr	1.17	1.59	1.82	2.40	3.07	4.43	5.00	10yr	3.92	4.81	5.52	6.53	7.32	10yr
25yr	0.45	0.69	0.86	1.23	1.61	1.94	25yr	1.39	1.90	2.12	2.78	3.58	4.90	6.10	25yr	4.34	5.87	6.74	7.92	8.87	25yr
50yr	0.50	0.76	0.95	1.37	1.84	2.23	50yr	1.59	2.18	2.36	3.12	4.01	5.55	7.09	50yr	4.91	6.81	7.83	9.19	10.24	50yr
100yr	0.56	0.85	1.07	1.54	2.12	2.56	100yr	1.83	2.51	2.65	3.48	4.47	6.25	8.21	100yr	5.53	7.90	9.10	10.62	11.78	100yr
200yr	0.63	0.95	1.20	1.74	2.43	2.94	200yr	2.10	2.87	2.95	3.87	4.98	7.02	9.63	200yr	6.21	9.26	10.58	12.27	13.58	200yr
500yr	0.74	1.10	1.42	2.06	2.93	3.55	500yr	2.53	3.47	3.42	4.46	5.78	8.15	11.73	500yr	7.21	11.28	12.90	14.79	16.36	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	0.76	1.06	1.26	1.72	2.18	2.98	3.10	1yr	2.63	2.98	3.58	4.31	5.01	1yr
2yr	0.33	0.51	0.63	0.86	1.06	1.26	2yr	0.91	1.23	1.48	1.95	2.49	3.41	3.66	2yr	3.01	3.52	4.05	4.84	5.64	2yr
5yr	0.40	0.62	0.77	1.05	1.34	1.62	5yr	1.16	1.58	1.87	2.49	3.18	4.37	4.91	5yr	3.87	4.72	5.40	6.35	7.17	5yr
10yr	0.47	0.73	0.90	1.26	1.63	1.97	10yr	1.40	1.93	2.26	3.03	3.83	5.43	6.14	10yr	4.81	5.90	6.75	7.89	8.81	10yr
25yr	0.58	0.89	1.11	1.58	2.08	2.56	25yr	1.79	2.50	2.93	3.94	4.91	7.68	8.28	25yr	6.79	7.96	9.04	10.52	11.55	25yr
50yr	0.68	1.04	1.30	1.86	2.51	3.11	50yr	2.16	3.04	3.56	4.81	5.96	9.62	10.39	50yr	8.52	9.99	11.32	13.10	14.21	50yr
100yr	0.81	1.22	1.52	2.20	3.02	3.78	100yr	2.61	3.70	4.33	5.88	7.24	12.07	13.04	100yr	10.68	12.54	14.15	16.36	17.50	100yr
200yr	0.94	1.42	1.80	2.61	3.64	4.61	200yr	3.14	4.51	5.29	7.19	8.78	15.18	16.24	200yr	13.43	15.62	17.73	20.42	21.56	200yr
500yr	1.17	1.75	2.25	3.26	4.64	5.97	500yr	4.00	5.83	6.86	9.42	11.35	20.58	21.94	500yr	18.21	21.09	23.84	27.40	28.47	500yr



Pollutant Removal Efficiencies for Best Management Practices for Use in Pollutant Loading Analysis

Best Management Practice (BMP) removal efficiencies for pollutant loading analysis for total suspended solids (TSS), total nitrogen (TN), and total phosphorus (TP) are presented in the table below. These removal efficiencies were developed by reviewing various literature sources and using best professional judgment based on literature values and general expectation of how values for different BMPs should relate to one another. The intent is to update this information and add BMPs and removal efficiencies for other parameters as more information/data becomes available in the future.

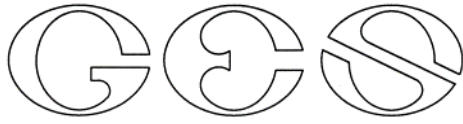
NHDES will consider other BMP removal efficiencies if sufficient documentation is provided.

Please note that all BMPs must be designed in accordance with the specifications in the Alteration of Terrain (AoT) Program Administrative Rules (Env-Wq 1500). If BMPs are not designed in accordance with the AoT Rules, NHDES may require lower removal efficiencies to be used in the analysis.

BMP in Series: When BMPs are placed in series, the BMP with the highest removal efficiency shall be the efficiency used in the model for computing annual loadings. Adding efficiencies together is generally not allowed because removals typically decrease rapidly with decreasing influent concentration and, in the case of primary BMPs (i.e., stormwater ponds, infiltration and filtering practices), pre-treatment is usually part of the design and is therefore, most likely already accounted for in the efficiencies cited for these BMPs.

Pollutant Removal Efficiencies for Best Management Practices for Use in Pollutant Loading Analysis				Values Accepted for Loading Analyses		
BMP Type	BMP	Notes	Lit. Ref.	TSS	TN	TP
Stormwater Ponds	Wet Pond		B, F	70%	35%	45%
	Wet Extended Detention Pond		A, B	80%	55%	68%
	Micropool Extended Detention Pond	TBA				
	Multiple Pond System	TBA				
	Pocket Pond	TBA				
Stormwater Wetlands	Shallow Wetland		A, B, F, I	80%	55%	45%
	Extended Detention Wetland		A, B, F, I	80%	55%	45%
	Pond/Wetland System	TBA				
	Gravel Wetland		H	95%	85%	64%
Infiltration Practices	Infiltration Trench (≥ 75 ft from surface water)		B, D, I	90%	55%	60%
	Infiltration Trench (< 75 ft from surface water)		B, D, I	90%	10%	60%
	Infiltration Basin (≥ 75 ft from surface water)		A, F, B, D, I	90%	60%	65%
	Infiltration Basin (< 75 ft from surface water)		A, F, B, D, I	90%	10%	65%
	Dry Wells			90%	55%	60%
	Drip Edges			90%	55%	60%
Filtering Practices	Aboveground or Underground Sand Filter that infiltrates WQV (≥ 75 ft from surface water)		A, F, B, D, I	90%	60%	65%
	Aboveground or Underground Sand Filter that infiltrates WQV (< 75 ft from surface water)		A, F, B, D, I	90%	10%	65%
	Aboveground or Underground Sand Filter with underdrain		A, I, F, G, H	85%	10%	45%
	Tree Box Filter	TBA				
	Bioretention System		I, G, H	90%	65%	65%
	Permeable Pavement that infiltrates WQV (≥ 75 ft from surface water)		A, F, B, D, I	90%	60%	65%
	Permeable Pavement that infiltrates WQV (< 75 ft from surface water)		A, F, B, D, I	90%	10%	65%
	Permeable Pavement with underdrain		Use TN and TP values for sand filter w/ underdrain and outlet pipe	90%	10%	45%

Pollutant Removal Efficiencies for Best Management Practices for Use in Pollutant Loading Analysis				Values Accepted for Loading Analyses		
BMP Type	BMP	Notes	Lit. Ref.	TSS	TN	TP
Treatment Swales	Flow Through Treatment Swale	TBA				
Vegetated Buffers	Vegetated Buffers		A, B, I	73%	40%	45%
Pre-Treatment Practices	Sediment Forebay	TBA				
	Vegetated Filter Strip		A, B, I	73%	40%	45%
	Vegetated Swale		A, B, C, F, H, I	65%	20%	25%
	Flow-Through Device - Hydrodynamic Separator		A, B, G, H	35%	10%	5%
	Flow-Through Device - ADS Underground Multichamber Water Quality Unit (WQU)		G, H	72%	10%	9%
	Other Flow-Through Devices	TBA				
	Off-line Deep Sump Catch Basin		J, K, L, M	15%	5%	5%



GOVE ENVIRONMENTAL SERVICES, INC

SITE-SPECIFIC SOIL SURVEY REPORT

For

127 Portsmouth Avenue, Exeter, NH

By

GES, Inc.

Project # 2023094

Date: 1-4-2024

1. MAPPING STANDARDS

Site-Specific Soil Mapping Standards for New Hampshire and Vermont. SSSNNE Special Publication No. 3, Version 7.0, July, 2021.

This map product is within the technical standards of the National Cooperative Soil Survey. It is a special purpose product, intended for infiltration requirements by the NH DES Alteration of Terrain Bureau. The soil map was produced by a professional soil scientist and is not a product of the USDA Natural Resources Conservation Service. This report accompanies the soil map.

The site-specific soil map (SSSM) was produced 1-4-2024; prepared by JP Gove, CSS #004, GES, Inc.

Soils were identified with the New Hampshire State-wide Numerical Soils Legend, USDA NRCS, Durham, NH. Issue # 10, January 2011.

Hydrologic Soil Group was determined using SSSNNE Special Publication No. 5, Ksat Values for New Hampshire Soils, September 2009.

High Intensity Soil Map symbols, based upon SSSNNE Special Publication 1, December 2017, were added to the Soil Legend.

Scale of soil map: Approximately 1" = 40'.

Contours Interval: 2 feet

2. LANDFORMS & EXISTING CONDITIONS:

The site is located on a mostly disturbed area. What remains for natural soil is a hill of glacial outwash and valleys of marine sediments. The disturbed areas are cut faces at the sides of the hill, or graded flat in the valley.

3. DATE SOIL MAP PRODUCED

Date(s) of on-site field work: 1-4-2024
Date(s) of test pits: 1-4-2024
Test pits recorded by: James P. Gove, CSS #004

4. GEOGRAPHIC LOCATION AND SIZE OF SITE

City or town where soil mapping was conducted: Exeter
Location: Tax Map 52, Lot 112-2
Size of area: Approximately 5 acres
Was the map for the entire lot? no
If no, where was the mapping conducted on the parcel: Total lot area is 6.24 acres. Area soil mapped is limited to south of GTE Road.

5. PURPOSE OF THE SOIL MAP

Was the map prepared to meet the requirement of Alteration of Terrain? Yes
If no, what was the purpose of the map? n/a
Who was the map prepared for? Beals Associates, PLLC

6. SOIL IDENTIFICATION LEGEND

Map Unit Symbol	Map Unit Name	HISS Symbol	Hydrologic Soil Group
33	Scitico silt loam	553	C
24	Agawam fine sandy loam	211	B
500/dfcc	Udorthents loamy	363	C
600/ffcc	Endoaquents loamy	563	C

SLOPE PHASE:

0-8%	B	8-15%	C	15-25%	D
25%-50%	E	50%+	F		

7. NARRATIVE MAP UNIT DESCRIPTIONS

SITE-SPECIFIC MAP UNIT: 33

CORRELATED SOIL SERIES: Scitico silt loam

LANDSCAPE SETTING: Valleys

CHARACTERISTIC SURFACE FEATURES: Forested, no surface stones.

DRAINAGE CLASS: Poorly Drained

PARENT MATERIAL: Marine silts

NATURE OF DISSIMILAR INCLUSIONS: Poorly drained Shaker fine sandy loam at borders of wetlands.

ESTIMATED PERCENTAGE OF DISSIMILAR INCLUSIONS: 5%

SOIL PROFILE DESCRIPTIONS- horizon designation, depth, soil texture, Munsell color notation, Munsell color of redox features, soil structure, soil consistence, estimated coarse fragments, estimated seasonal high water table (ESHWT), observed water table (OBSWT), kind of water table (perched, apparent, or both), depth to lithic or paralithic contact:

Ap, 0-6 inches, silt loam, 10YR3/2, 5YR5/6 redox, granular, friable, no coarse fragments, ESHWT at 0 inches, perched.

Cg, 6-20 inches, silty clay loam, 2.5Y5/2, 5YR6/6 redox, blocky, firm, no coarse fragments, OBSWT at 10 inches, perched, no lithic contact.

SITE-SPECIFIC MAP UNIT: 24

CORRELATED SOIL SERIES: Agawam fine sandy loam

LANDSCAPE SETTING: Top of hill

CHARACTERISTIC SURFACE FEATURES: Forested, no surface stones.

DRAINAGE CLASS: Well Drained

PARENT MATERIAL: Glacial Outwash

NATURE OF DISSIMILAR INCLUSIONS: Moderately well drained Eldridge fine sandy loam at the transition from the hill side to the wetland boundary.

ESTIMATED PERCENTAGE OF DISSIMILAR INCLUSIONS: 5%

SOIL PROFILE DESCRIPTIONS- horizon designation, depth, soil texture, Munsell color notation, Munsell color of redox features, soil structure, soil consistence, estimated coarse fragments, estimated seasonal high water table (ESHWT), observed water table (OBSWT), kind of water table (perched, apparent, or both), depth to lithic or paralithic contact:

Ap, 0-6 inches, fine sandy loam, 10YR3/3, granular, friable, no coarse fragments.

Bw, 6-24 inches, fine sandy loam, 10YR5/6, granular, friable, no coarse fragments.

C, 24-45 inches, loamy sand, 2.5Y5/4, no redox, massive, friable, no coarse fragments, no ESHWT, no OBSWT, no lithic contact.

SITE-SPECIFIC MAP UNIT: 500/dfccc

CORRELATED SOIL SERIES: Udorthents, loamy

LANDSCAPE SETTING: Flat graded areas and cut faces.

CHARACTERISTIC SURFACE FEATURES: Grass, no surface stones.

DRAINAGE CLASS: Moderately Well Drained

PARENT MATERIAL: Mixed Fill over Marine silts

NATURE OF DISSIMILAR INCLUSIONS: Moderately well drained Boxford silt loam at borders of graded areas.

ESTIMATED PERCENTAGE OF DISSIMILAR INCLUSIONS: 5%

SOIL PROFILE DESCRIPTIONS- horizon designation, depth, soil texture, Munsell color notation, Munsell color of redox features, soil structure, soil consistence, estimated coarse fragments, estimated seasonal high water table (ESHWT), observed water table (OBSWT), kind of water table (perched, apparent, or both), depth to lithic or paralithic contact:

Fill, 0-20 inches, sandy loam to loamy sand, 10YR4/4, massive, friable, 10% gravel coarse fragments.

Cg, 20-40 inches, silty clay loam, 2.5Y5/2, 5YR5/6 redox, blocky, firm, no coarse fragments, ESHWT at 20 inches, OBSWT at 30 inches, perched, no lithic contact.

SITE-SPECIFIC MAP UNIT: 600/ffccc

CORRELATED SOIL SERIES: Endoaquents, loamy

LANDSCAPE SETTING: Ditches and swales.

CHARACTERISTIC SURFACE FEATURES: Grass or shrub-shrub, no surface stones.

DRAINAGE CLASS: Poorly Drained

PARENT MATERIAL: Marine silts – graded or dredged.

NATURE OF DISSIMILAR INCLUSIONS: Poorly drained Scitico silt loam at borders of graded areas.

ESTIMATED PERCENTAGE OF DISSIMILAR INCLUSIONS: 5%

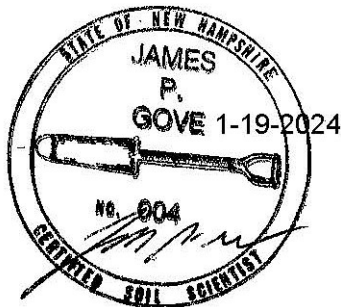
SOIL PROFILE DESCRIPTIONS- horizon designation, depth, soil texture, Munsell color notation, Munsell color of redox features, soil structure, soil consistence, estimated coarse fragments, estimated seasonal high water table (ESHWT), observed water table (OSWT), kind of water table (perched, apparent, or both), depth to lithic or paralithic contact:

C, 0-10 inches, silt loam, 2.5Y5/3, 5YR5/6 redox, massive, friable, no coarse fragments, ESHWT at 0 inches, perched.

Cg, 10-30 inches, silty clay loam, 2.5Y5/2, 5YR5/6 redox, blocky, firm, no coarse fragments, OSWT at 10 inches, perched, no lithic contact.

8. RESPONSIBLE SOIL SCIENTIST

Name: James Gove



Certified Soil Scientist Number: 004

9. OTHER DISTINGUISHING FEATURES OF SITE

Is the site in a natural condition? No

If no, what is the nature of the disturbance?
forested areas.

Cut faces and flat graded areas. Only natural is remaining



GOVE ENVIRONMENTAL SERVICES, INC.

TEST PIT DATA

Project Foss Motors, Exeter, NH
Client Foss Motors
GES Project No. 2023094
MM/DD/YY Staff 06-17-2024 James Gove, CSS#004

Test Pit No.	01	Soils Series:	Udorthents
ESHWT::	18"	Landscape:	Graded area
Termination @	64"	Slope:	B
Refusal:	No	Parent Material:	Fill over marine
Obs. Water:	None	Hydrologic Soil Group:	C

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
^A 0-4"	10YR3/2	loamy sand	massive-friable-none
^B 4-18"	10YR4/4	loamy sand	massive-friable-none
C1 18-44"	2.5Y4/2	silt loam	massive-firm-5YR5/6
C2 44-64"	2.5Y5/2	silty clay loam	massive -firm- 5YR5/6

Test Pit No.	02	Soils Series:	Udorthents
ESHWT::	16"	Landscape:	Graded area
Termination @	61"	Slope:	B
Refusal:	No	Parent Material:	Fill over marine
Obs. Water:	None	Hydrologic Soil Group:	C

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
^A 0-8"	10YR3/2	loamy sand	massive-friable-none
^B 8-16"	10YR4/4	loamy sand	massive-friable-none
C1 16-42"	10YR4/4	silt loam	massive-friable-5YR5/6
C2 47-61"	2.5Y5/2	silty clay loam	massive-firm-5YR5/6

Test Pit No. **03**
 ESHWT:: 20"
 Termination @ 69"
 Refusal: No
 Obs. Water: None

Soils Series: Udorthents
 Landscape: Graded area
 Slope: B
 Parent Material: Fill over marine
 Hydrologic Soil Group: C

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
^A 0-8"	10YR3/2	loamy sand	massive-friable-none
^B 8-20"	10YR4/6	loamy sand	massive-friable-none
C 20-69"	2.5Y5/42	silt loam	massive-firm-5YR5/6

Test Pit No. **04**
 ESHWT:: 32"
 Termination @ 70"
 Refusal: No
 Obs. Water: None

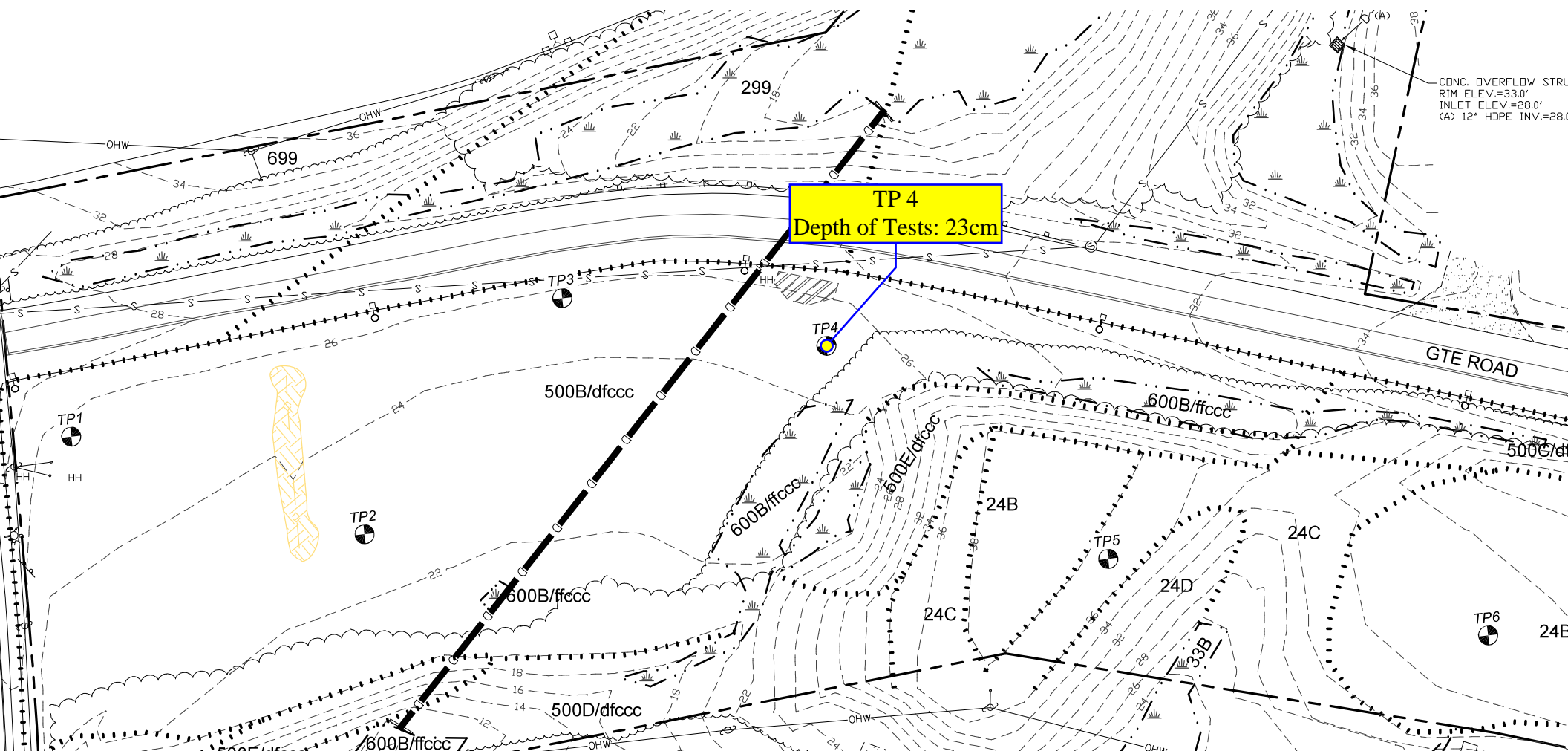
Soils Series: Udorthents
 Landscape: Graded area
 Slope: B
 Parent Material: Fill over marine
 Hydrologic Soil Group: C

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
^A 0-8"	10YR3/2	loamy sand	massive-friable-none
^B 8-32"	10YR4/6	loamy sand	massive-friable-none
C1 32-50"	2.5Y5/4	loamy sand	massive-friable-5YR5/6
C2 50-70"	2.5Y5/3	silt loam	massive-firm - 5YR5/6

Test Pit No. **Hillside**
 ESHWT:: 86"
 Termination @ 126"
 Refusal: No
 Obs. Water: None

Soils Series: Windsor
 Landscape: Hillside cut face
 Slope: B
 Parent Material: Sand over marine
 Hydrologic Soil Group: B

Horizon	Color (Munsell)	Texture	Structure-Consistence-Redox
A 0-6"	10YR3/3	loamy sand	granular-friable-none
B 6-30"	10YR5/6	loamy sand	granular-friable-none
C1 30-86"	10YR4/6	sand	massive- friable – none
C2 86-126"	2.5Y5/4	silt loam	massive-firm-5YR5/6



Infiltration
Test Location

AMOOZEMETER DATA SHEET

Date: 6/17/24
 Location: TP 4-1
 Foss Motors Exeter
 Map Unit Component (or "Series"):
 Pedon Number:
 Horizon:

Permeameter #:
 Air Temp (F) initial: 74°F
 final: 76°F

"water" source & modifications:
 Soil Moisture Content (%):

below surface

Set-Up Calculation	
Hole Depth (cm):	23 cm
Distance from bottom of bubble tube to soil surface (cm):	+ 10 ?
Desired Water Depth in Hole (cm):	- 15 ?
= CHT Tube setting (cm):	18 cm

Actual water level in hole (cm):
 initial: 15.0 cm
 final: 14.8 cm

TP 4-1
 10 min
 —
 —
 —

Outflow Chamber(s) used: small ("1 on") both ("2 on") X
 associated Conversion Factor: (= 20.0 cm²) (= 105.0 cm²)
 ↓

TP 4-1									
Time Elapsed (min)	Water Level Change (cm)	Chamber Volume (cm ³)	min/hr	Q	H (cm)	A	Ksat (cm/hr)	Ksat (in/hr)	
10	0.4	105	0.1666667	252	15	0.001056	0.266112	0.104769	
20	0.3	105	0.1666667	189	15	0.001056	0.199584	0.078576	
30	0.4	105	0.1666667	252	15	0.001056	0.266112	0.104769	
							Mean Ksat	0.243936	0.096038
							Std Deviation	0.03841	0.015122

4-32"
 3-20"
 2-16"
 1-18"

AMOOZEMETER DATA SHEET

Date : 6/17/24
 Location : TP 4-2
 Foxs Motors Exeter
 Map Unit Component (or "Series") :
 Pedon Number :
 Horizon :

Permeameter # :
 Air Temp (F) initial : 78°F
 final : 79°F

"water" source & modifications :
 Soil Moisture Content (%) :

Set-Up Calculation	
Hole Depth (cm) :	23 cm
Distance from bottom of bubble tube to soil surface (cm) :	+ 10 ?
Desired Water Depth in Hole (cm) :	- 15 ?
= CHT Tube setting (cm) :	18

Actual water level in hole (cm)
 initial : 15.0 cm
 final : 14.9 cm

Outflow Chamber(s) used : small ("1 on") both ("2 on") X
 associated Conversion Factor : (= 20.0 cm²) (= 105.0 cm²)
 ↓



TP 4-2

Time Elapsed (min)	Water Level Change (cm)	Chamber Volume (cm ³)	min/hr	Q	H (cm)	A	Ksat (cm/hr)	Ksat (in/hr)	
10	1	105	0.1666667	630	15	0.001056	0.66528	0.261921	
20	0.8	105	0.1666667	504	15	0.001056	0.532224	0.209537	
30	0.8	105	0.1666667	504	15	0.001056	0.532224	0.209537	
							Mean Ksat	0.576576	0.226998
							Std Deviation	0.07682	0.030244

AMOOZEMETER DATA SHEET

Date : 6/17/24
 Location : TP4-3
 Foss Motor Exeter
 Map Unit Component (or "Series") :
 Pedon Number :
 Horizon :

Permeameter # :
 Air Temp (F) initial : 80°F
 final : 80°F

"water" source & modifications :
 Soil Moisture Content (%) :

Set-Up Calculation	
Hole Depth (cm) :	23
Distance from bottom of bubble tube to soil surface (cm) :	+ 10 ?
Desired Water Depth in Hole (cm) :	- 15 ?
= CHT Tube setting (cm) :	18 cm

Actual water level in hole (cm)

initial : 15

final : 15

Outflow Chamber(s) used : small ("1 on")
 associated Conversion Factor : (= 20.0 cm²)

both ("2 on") X
 (= 105.0 cm²)



TP 4-3									
Time Elapsed (min)	Water Level Change (cm)	Chamber Volume (cm ³)	min/hr	Q	H (cm)	A	Ksat (cm/hr)	Ksat (in/hr)	
5	1	105	0.0833333	1260	15	0.001056	1.33056	0.523843	
10	0.9	105	0.0833333	1134	15	0.001056	1.197504	0.471458	
15	0.9	105	0.0833333	1134	15	0.001056	1.197504	0.471458	
							Mean Ksat	1.241856	0.48892
							Std Deviation	0.07682	0.030244



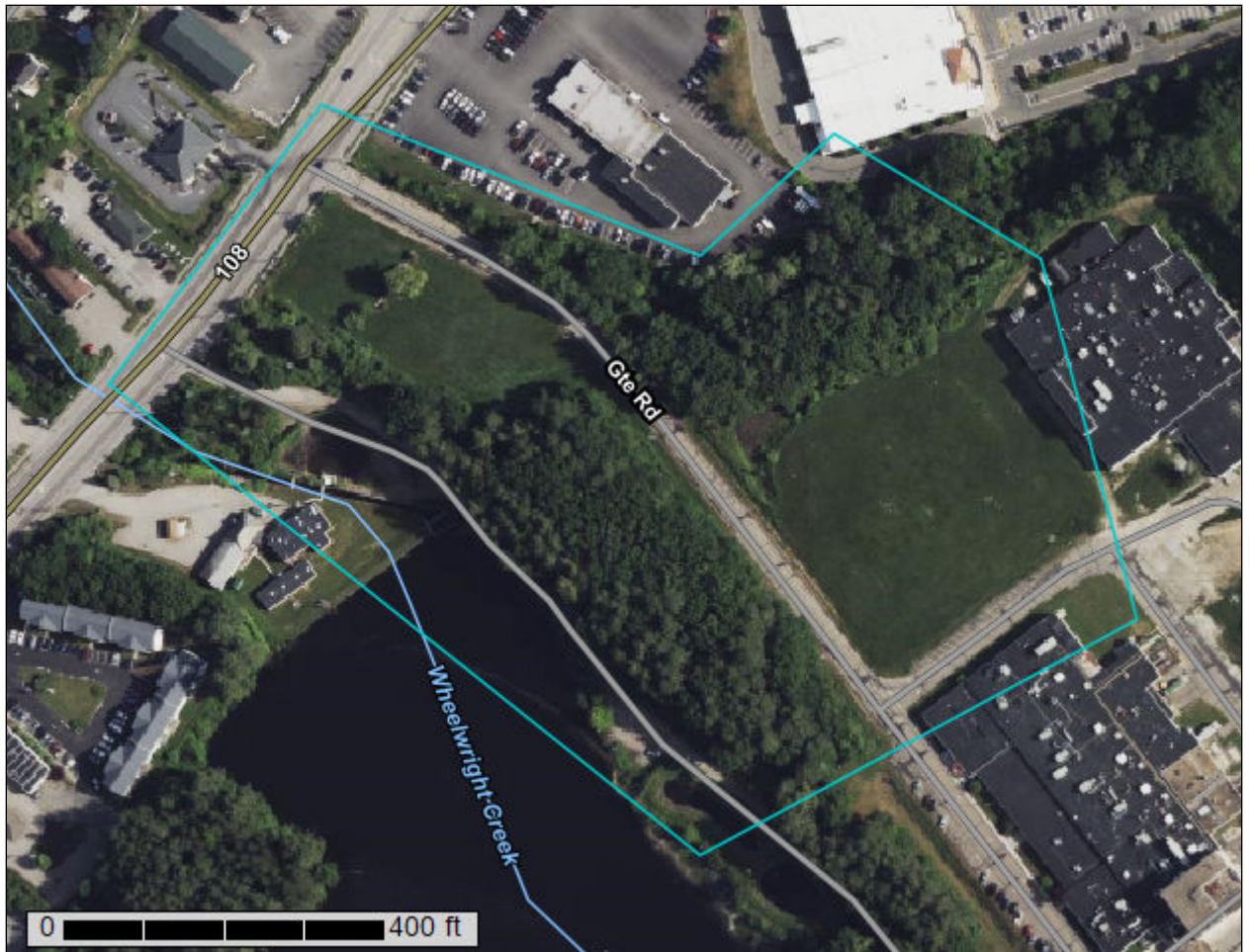
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Rockingham County, New Hampshire



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

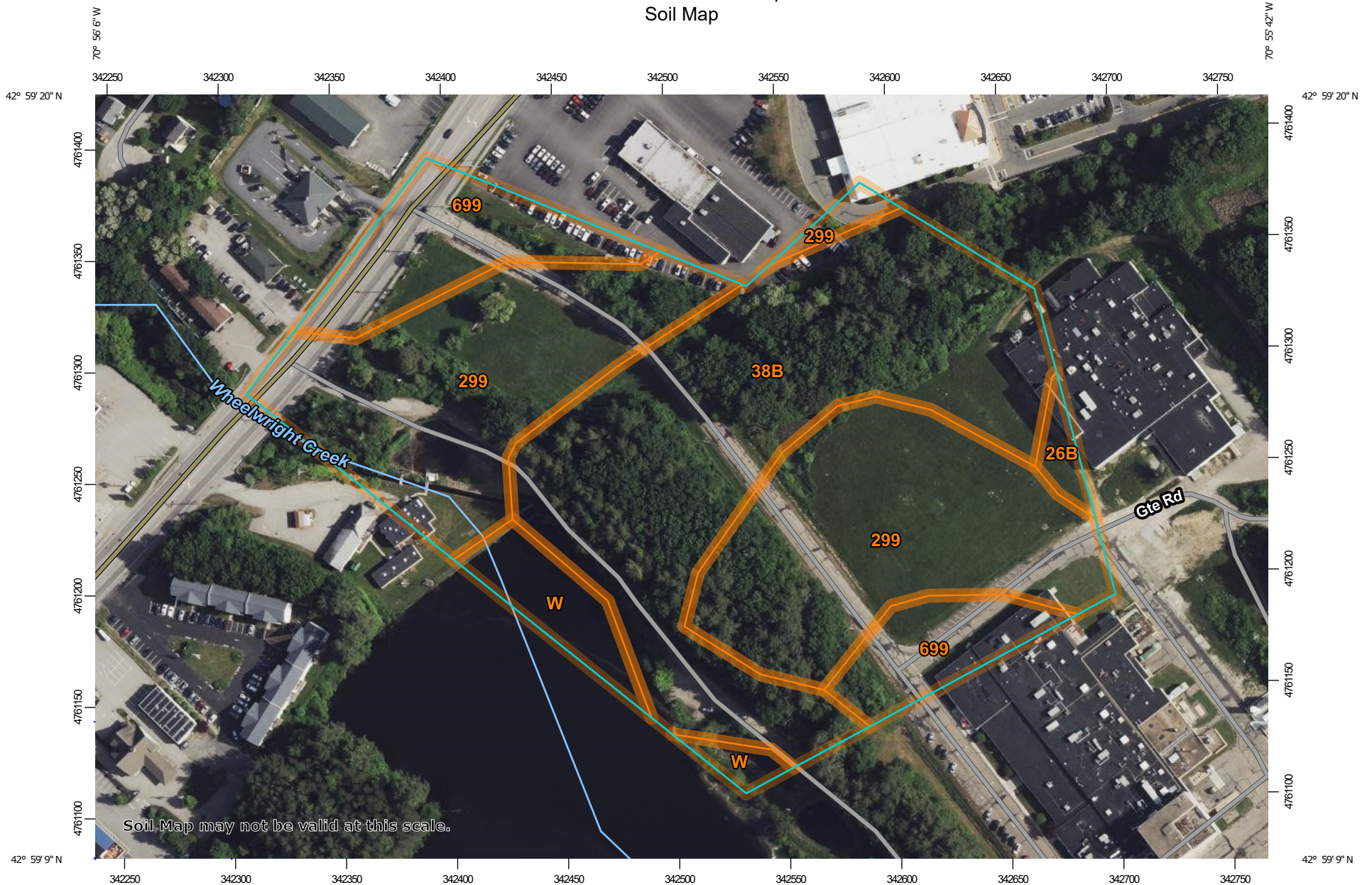
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

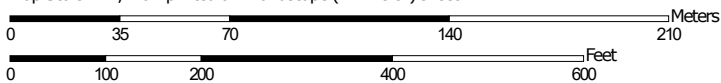
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:2,410 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
 Survey Area Data: Version 26, Aug 22, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
26B	Windsor loamy sand, 3 to 8 percent slopes	0.2	1.2%
38B	Eldridge fine sandy loam, 3 to 8 percent slopes	6.2	37.8%
299	Udorthents, smoothed	7.2	43.4%
699	Urban land	2.1	12.9%
W	Water	0.8	4.7%
Totals for Area of Interest		16.5	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

Custom Soil Resource Report

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

26B—Windsor loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svkf
Elevation: 0 to 1,210 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Farmland of local importance

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or schist and/or gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Eskers
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Deerfield, loamy sand

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

38B—Eldridge fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9cnb
Elevation: 90 to 1,000 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 120 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Eldridge and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eldridge

Setting

Parent material: Outwash over glaciolacustrine

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 23 inches: loamy fine sand
H3 - 23 to 62 inches: loamy very fine sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)

Depth to water table: About 12 to 24 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F144AY027MA - Moist Sandy Outwash

Hydric soil rating: No

Minor Components

Boxford

Percent of map unit: 5 percent

Hydric soil rating: No

Well drained inclusion

Percent of map unit: 5 percent

Hydric soil rating: No

Squamscott

Percent of map unit: 5 percent

Landform: Marine terraces

Hydric soil rating: Yes

Scitico

Percent of map unit: 5 percent

Landform: Marine terraces

Hydric soil rating: Yes

299—Udorthents, smoothed

Map Unit Setting

National map unit symbol: 9cmt

Elevation: 0 to 840 feet

Mean annual precipitation: 44 to 49 inches

Mean annual air temperature: 48 degrees F

Frost-free period: 155 to 165 days

Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Properties and qualities

Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Excessively drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

699—Urban land

Map Unit Composition

Urban land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Not named

Percent of map unit: 15 percent
Hydric soil rating: No

W—Water

Map Unit Setting

National map unit symbol: 9cq3
Elevation: 200 to 2,610 feet
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

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Custom Soil Resource Report

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STORMWATER MANAGEMENT / BMP INSPECTION & MAINTENANCE PLAN

Foss Motors

127 Portsmouth Avenue, Exeter, NH

NH-1471

February 2024

Revised August 6, 2024

Proper construction, inspections, maintenance, and repairs are key elements in maintaining a successful stormwater management program on a developed property. Routine inspections ensure permit compliance and reduce the potential for deterioration of infrastructure or reduced water quality.

For the purpose of this Stormwater Management Program, a significant rainfall event is considered an event of three (3) inches or more in a 24-hour period or at least 0.5 inches in a one-hour period. During construction, inspections should be conducted every two weeks or after a 0.25" rainfall event in a 24-hour period per the EPA NPDES Phase II SWPPP, until the entire disturbed area is fully restabilized. Upon full stabilization of the project and filing of an NOI, inspections need only be conducted after a significant rainfall event as described above or as described in the maintenance guidelines below.

During construction activities Tim Foss with an address of 133 Portsmouth Avenue, Exeter, New Hampshire and a phone of 603.772.7777 or their heirs and/or assigns, shall be responsible for inspections and maintenance activities for the above project site. Foss Motors shall be responsible for *ongoing inspection and maintenance* of the porous pavement, stone infiltration trench, and related drainage infrastructure. The owner shall document the transfer of responsibility in writing to the NHDES AoT Bureau.

The owner is responsible to ensure that any subsequent owner has copies of the Log Form and Annual Report records and fully understands the responsibilities of this plan. The grantor owner(s) will ensure this document is provided to the grantee owner(s) by duplicating the Ownership Responsibility Sheet which is found toward the back of this document, which will be maintained with the Inspection & Maintenance Logs and provided to the Town of Exeter and/or NHDES Alteration of Terrain Bureau upon request.

Documentation:

A maintenance log (i.e., report) will be kept summarizing inspections, maintenance, and any corrective actions taken. The log will include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task (see Stormwater System Operation and Maintenance Plan Inspection & Maintenance Manual Checklist attached). If a maintenance task

requires the clean-out of any sediments or debris, the location where the sediment and debris was disposed after removal shall be indicated.

Best Management Practices (BMP) Maintenance Guidelines

The following provides a list of recommendations and guidelines for managing the Stormwater facilities. The cited areas, facilities, and measures will be inspected and the identified deficiencies will be corrected. Clean-out must include the removal and legal disposal of any accumulated sediments and debris.

DURING CONSTRUCTION

1. Stabilized Construction Entrance

A temporary gravel construction entrance provides an area where mud can be dislodged from tires before the vehicle leaves the construction site to reduce the amount of mud and sediment transported onto paved municipal and state roads. The stone size for the pad should be between 1 and 2-inch coarse aggregate, and the pad itself constructed to a minimum length of 50' for the full width of the access road. The aggregate should be placed at least six inches thick. A plan view and profile are shown on Sheet E1 - Sediment and Erosion Control Detail Plan.

2. Dust Control

Dust will be controlled on the site using multiple BMPs. Mulching and temporary seeding will be the first line of protection to be utilized where problems occur. If dust problems are not solved by these applications, the use of water and calcium chloride can be applied. Calcium chloride will be applied at a rate that will keep the surface moist but not cause pollution.

3. Temporary Erosion and Sediment Control Devices / Barriers

Function – Temporary erosion and sediment control devices are utilized during construction period to divert, store and filter stormwater from non-stabilized surfaces. These devices include, but are not limited to: silt fences, hay bales, filters, sediment traps, stone check dams, mulch and erosion control blankets.

Maintenance – Temporary erosion and sediment control devices shall be inspected and maintained on a weekly basis and following a significant storm event (>0.5-inch rain event) throughout the construction period to ensure that they still have integrity and are not allowing sediment to pass. Sediment build-up in swales will be removed if it is deeper than six inches. Sediment is to be removed from sumps in the catch basin semi-annually. Refer to the Site Plan drawings for the maintenance of temporary erosion and sediment control devices.

4. Invasive Species

THE NH COMMISSIONER OF AGRICULTURE PROHIBITS THE COLLECTION, POSSESSION, IMPORTATION, TRANSPORTATION, SALE, PROPAGATION, TRANSPLANTATION, OR CULTIVATION OF PLANTS BANNED BY NH LAW RSA

430:53 AND NH CODE ADMINISTRATIVE RULES AGR 3800. THE PROJECT SHALL MEET ALL REQUIREMENTS AND THE INTENT OF. RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES.

POST CONSTRUCTION / LONG TERM MAINTENANCE:

5. Catch Basins/Manholes

Inspect catch basins 2 times per year (preferably in spring and fall) to ensure that the catch basins are working in their intended fashion and that they are free of debris. Clean structures when sediment depths reach 12” from invert of outlet. If the basin outlet is designed with a hood to trap floatable materials (i.e. Snout), check to ensure watertight seal is working. Remove floating debris and hydrocarbons at the time of the inspection.

6. Culverts

Inspect culverts 2 times per year (preferably in spring and fall) to ensure that the culverts are working in their intended fashion and that they are free of debris. Remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit and to repair any erosion damage at the culvert’s inlet and outlet. Repair/replace culvert if it becomes crushed or deteriorated.

7. Vegetated Areas

Inspect slopes and embankments early in the growing season to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

8. Roadways and Paved Surfaces

Clear accumulations of winter sand along roadways at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader.

9. Winter Maintenance

The plowing and application of de-icing materials shall be conducted by a certified Green Snow Pro contractor trained in best management practices for road salt/deicing at the expense of the owner. No snow dump shall be allowed onsite. In the event that snow storage areas are inundated in any given winter, snow will be trucked offsite and disposed of in a legal fashion.

10. Stormwater Infiltration Facilities

- Inspect all upstream pre-treatment measures for sediment and floatables accumulation. Remove and dispose of sediments or debris as needed.

- The infiltration facility will be inspected within the first three months after construction.
- After the initial three months, the infiltration facility will be inspected 2 times per year to ensure that the filter is draining within 72 hours of a rain event equivalent to 1/2" or more.
- Failure to drain in 72 hours will require part or all of the top 3 inches of the infiltration area to be removed and replaced with new like material. If the infiltration system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function.
- Vegetated infiltration ponds or swales will be mowed at least annually or otherwise maintained to control the growth of woody vegetation and to control the accumulation of sediments in order to maintain the water quality volume. Any woody vegetation or accumulated sediment must be removed.
- The facilities will be inspected after major storms and any identified deficiencies will be corrected.

11. Porous Pavement

- Check for standing water remaining on the surface of the pavement after a precipitation event within 30 minutes.
- 1-2 times per year, use a vacuum sweeper to remove sediment from porous pavement. Use of a power washer or compressed air blower at an angle of 30 degrees or less can be effective.
- As part of vacuuming, inspect adjacent vegetated areas to verify no signs of erosion and run-on to permeable pavement. Repair or replace any damaged structural parts if required.
- Check for debris accumulation, particularly in the winter.
- Loose debris such as leaves or trash can be removed using a power/leaf blower or gutter broom.
- Fall and spring cleanup should be accompanied by pavement vacuuming.
- Accumulation of sediment and organic debris on the pavement surface.
- Repairs to damaged pavement should be repaired as they are identified.

12. Invasive Species

Background

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants, seeds, packing materials, or fresh produce. Some exotic plants become invasive and cause harm by:

- Becoming weedy and overgrown;
- Killing established shade trees;
- Obstructing pipes and drainage systems;
- Forming dense beds in water;
- Lowering water levels in lakes, streams, and wetlands;
- Destroying natural communities;

- Promoting erosion on stream banks and hillsides; and
- Resisting control except by hazardous chemical.

During maintenance activities, check for the presence of invasive plants and remove in a safe manner. They should be controlled as described on the following fact sheet prepared by the University of New Hampshire Cooperative Extension entitled Methods for Disposing Non-Native Invasive Plant dated January 2010.

In the event that invasive species are noticed growing in any of the stormwater management practices, the invasive vegetation shall be removed completely to include root matter and disposed of properly. Prior to disposal, the vegetation shall be placed on and completely cover with a plastic tarp for a period of two – three weeks until plants are completely dead. If necessary or to expedite the process, spray only the invasive vegetation and roots with a systemic nonselective herbicide after placement on the tarp (to prevent chemical migration) and then cover.

Annual Report

Description: The owner is responsible to keep an **Inspection & Maintenance Activity Log** that documents inspection, maintenance, and repairs to the storm water management system, and a **Deicing Log** to track the amount and type of deicing material applied to the site. The original owner is responsible to ensure that any subsequent owner (s) have copies of the Stormwater System Operation and Maintenance Plan & Inspection and Maintenance Manual, copies of past logs and check lists. This includes any owner association for potential condominium conversion of the property. The Annual Report will be prepared and submitted to the Town of Exeter DPW upon request.

Disposal Requirements

Disposal of debris, trash, sediment, and other waste materials should be done at suitable disposal/recycling sites and in compliance with all applicable local, state, and federal waste regulations.

STORMWATER SYSTEM OPERATION AND MAINTENANCE PLAN

Inspection & Maintenance Manual Checklist

Commercial Development

Foss Motors – 127 Portsmouth Avenue

Exeter, NH

BMP / System	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
Stabilized Construction Entrance	Weekly	Inspect adjacent roadway for sediment tracking Inspect stone for sediment accumulation	Sweep adjacent roadways as soon as sediment is tracked Top dress with additional stone when necessary to prevent tracking
Sediment Control Devices / Barriers	Weekly	Inspect accumulated sediment level, rips, and tears	Repair or replace damaged lengths Remove and dispose of accumulated sediment once level reaches 1/3 of barrier height
Pavement Sweeping	Spring and Fall	Removal of sand and litter from impervious areas	N/A
Litter/Trash Removal	Routinely	Inspect dumpsters, outdoor waste receptacles area, and yard areas, as well as ponds and swale areas.	Site will be free of litter/trash.
Deicing Agents	N/A	N/A	Use salt as the primary agent for roadway safety during winter.
Landscaping	Maintained as required and mulched each Spring	N/A	Trash/debris and weed removal
Drainage Pipes, Catchbasins & Drain Manholes	Spring and Fall	Check for sediment accumulation & clogging.	More than 2" sediment depth
Infiltration Trench	Spring and Fall and after every	Inspect grass swale vegetation and sediment	Remove dead & diseased vegetation along with all

	2.5" of rain or greater in a 24-hour period	accumulation. 72-Hour drawdown time evaluation and vegetation evaluation.	debris; take corrective measures, reseed and repair grass swale if required. Mow grass swale. Restore infiltration by removing accumulated sediments and reconstruction of the infiltration basin as necessary.
Porous Pavement	Spring and Fall	Check for standing water. Check for damaged pavement.	Remove debris from porous pavement and adjacent areas. Vacuum sweep pavement. Repair damaged pavement.
Riprap Outlet Protection/Level Spreaders	Spring and Fall and after every 2.5" of rain or greater in a 24-hour period	Check for sediment buildup and displaced stones. Inspect for torn or visible fabric.	Remove excess sediment and trash/debris. Immediately repair and replace stone and/or fabric as necessary.
Annual Report	1 time per year	Submit Annual Report to Town of Exeter Inspector upon request	

Inspection Notes:

CHECKLIST FOR INSPECTION OF PERMEABLE PAVEMENT

Location:

Inspector:

Date:

Time:

Site Conditions:

Date Since Last Rain Event:

Inspection Items	Satisfactory (S) or Unsatisfactory (U)	Comments/Corrective Action
1. Salt / Deicing (Winter/Spring)		
Use salt only for ice management	S U	
Accumulated salt removed in spring	S U	
2. Debris Cleanup (1-2 times per year minimum, Spring/Fall)		
Remove sediment and organic debris using vacuum street sweeper	S U	
Clean catch basins (if available)	S U	
3. Controlling Run-On		
Adjacent vegetated areas show no signs of erosion and run-on to permeable pavement	S U	
4. Outlet / Catch Basin Inspection (if available) (1-2 times per year, after large storm events)		
No evidence of blockage	S U	
Good condition, no need for cleaning/repair	S U	
5. Poorly Drained Pavement		
Recently cleaned and vacuumed	S U	
6. Pavement Condition		
No evidence of deterioration	S U	
7. Signage / Stockpiling (As Needed)		
No evidence of damage	S U	
Proper signage posted indicating usage for traffic load	S U	
No stockpiling of materials and other unauthorized uses	S U	
Corrective Action Needed		Due Date
1.		
2.		
3.		
Inspector's Signature		Date

Anti-icing Route Data Form

Truck Station:

Date:

Air Temperature

Pavement Temperature

Relative Humidity

Dew Point

Sky

Reason for applying:

Route:

Chemical:

Application Time:

Application Amount:

Observation (first day):

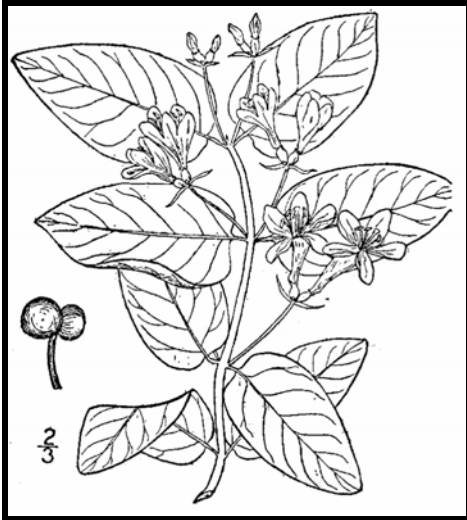
Observation (after event):

Observation (before next application):

Name:

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle

Lonicera tatarica

USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr. 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag “head first” at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.






Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database /
Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Be diligent looking for seedlings for years in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

Woody Plants	Method of Reproducing	Methods of Disposal
Norway maple <i>(Acer platanoides)</i> European barberry <i>(Berberis vulgaris)</i> Japanese barberry <i>(Berberis thunbergii)</i> autumn olive <i>(Elaeagnus umbellata)</i> burning bush <i>(Euonymus alatus)</i> Morrow's honeysuckle <i>(Lonicera morrowii)</i> Tatarian honeysuckle <i>(Lonicera tatarica)</i> showy bush honeysuckle <i>(Lonicera x bella)</i> common buckthorn <i>(Rhamnus cathartica)</i> glossy buckthorn <i>(Frangula alnus)</i>	Fruit and Seeds 	<p>Prior to fruit/seed ripening</p> <p>Seedlings and small plants</p> <ul style="list-style-type: none"> ▪ Pull or cut and leave on site with roots exposed. No special care needed. <p>Larger plants</p> <ul style="list-style-type: none"> ▪ Use as firewood. ▪ Make a brush pile. ▪ Chip. ▪ Burn. <hr/> <p>After fruit/seed is ripe</p> <p>Don't remove from site.</p> <ul style="list-style-type: none"> ▪ Burn. ▪ Make a covered brush pile. ▪ Chip once all fruit has dropped from branches. ▪ Leave resulting chips on site and monitor.
oriental bittersweet <i>(Celastrus orbiculatus)</i> multiflora rose <i>(Rosa multiflora)</i>	Fruits, Seeds, Plant Fragments 	<p>Prior to fruit/seed ripening</p> <p>Seedlings and small plants</p> <ul style="list-style-type: none"> ▪ Pull or cut and leave on site with roots exposed. No special care needed. <p>Larger plants</p> <ul style="list-style-type: none"> ▪ Make a brush pile. ▪ Burn. <hr/> <p>After fruit/seed is ripe</p> <p>Don't remove from site.</p> <ul style="list-style-type: none"> ▪ Burn. ▪ Make a covered brush pile. ▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.

Non-Woody Plants	Method of Reproducing	Methods of Disposal
<p>garlic mustard (<i>Alliaria petiolata</i>)</p> <p>spotted knapweed (<i>Centaurea maculosa</i>)</p> <ul style="list-style-type: none"> ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. <p>black swallow-wort (<i>Cynanchum nigrum</i>)</p> <ul style="list-style-type: none"> ▪ May cause skin rash. Wear gloves and long sleeves when handling. <p>pale swallow-wort (<i>Cynanchum rossicum</i>)</p> <p>giant hogweed (<i>Heracleum mantegazzianum</i>)</p> <ul style="list-style-type: none"> ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. <p>dame's rocket (<i>Hesperis matronalis</i>)</p> <p>perennial pepperweed (<i>Lepidium latifolium</i>)</p> <p>purple loosestrife (<i>Lythrum salicaria</i>)</p> <p>Japanese stilt grass (<i>Microstegium vimineum</i>)</p> <p>mile-a-minute weed (<i>Polygonum perfoliatum</i>)</p>	<p>Fruits and Seeds</p> 	<p>Prior to flowering</p> <p>Depends on scale of infestation</p> <p>Small infestation</p> <ul style="list-style-type: none"> ▪ Pull or cut plant and leave on site with roots exposed. <p>Large infestation</p> <ul style="list-style-type: none"> ▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material. <hr/> <p>During and following flowering</p> <p>Do nothing until the following year or remove flowering heads and bag and let rot.</p> <p>Small infestation</p> <ul style="list-style-type: none"> ▪ Pull or cut plant and leave on site with roots exposed. <p>Large infestation</p> <ul style="list-style-type: none"> ▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material.
<p>common reed (<i>Phragmites australis</i>)</p> <p>Japanese knotweed (<i>Polygonum cuspidatum</i>)</p> <p>Bohemian knotweed (<i>Polygonum x bohemicum</i>)</p>	<p>Fruits, Seeds, Plant Fragments</p> <p>Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.</p>	<p>Small infestation</p> <ul style="list-style-type: none"> ▪ Bag all plant material and let rot. ▪ Never pile and use resulting material as compost. ▪ Burn. <p>Large infestation</p> <ul style="list-style-type: none"> ▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile. ▪ Monitor and remove any sprouting material. ▪ Pile, let dry, and burn.

January 2010

UNH Cooperative Extension programs and policies are consistent with pertinent Federal and State laws and regulations, and prohibits discrimination in its programs, activities and employment on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sex, sexual orientation, or veteran's, marital or family status. College of Life Sciences and Agriculture, County Governments, NH Dept. of Resources and Economic Development, Division of Forests and Lands, NH Fish and Game ,and U.S. Dept. of Agriculture cooperating.

Appendix IV

Plans

SITE SPECIFIC SOIL MAPPING STANDARDS:

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP. THE SITE SPECIFIC SOIL SURVEY WAS PRODUCED JANUARY 15, 2024, AND WAS PREPARED BY JAMES P. GOVE, CSS #004, GOVE ENVIRONMENTAL SERVICES, INC.

SOIL IDENTIFICATION LEGEND:

MAP UNIT SYMBOL	MAP UNIT NAME	HISS SYMBOL	HYDROLOGIC SOIL GROUP
24	AGAWAM FINE SANDY LOAM	211	B
33	SCITICO SILT LOAM	553	C
500/dfccc	UDORRHENTS LOAMY	363	C
600/ffccc	ENDOQUENTS LOAMY	563	C

SLOPE PHASE:
0-8% = B, 8-15% = C, 15-25% = D, 25-50% = E, >50% = F

SOIL INFORMATION OUTSIDE OF THE MAPPED AREA WAS OBTAINED FROM USDA NATURAL RESOURCES CONSERVATION SERVICE (NRCS):

SDIL IDENTIFICATION LEGEND

MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC SOIL GROUP
38B	ELDRIDGE FINE SANDY LOAM	C
299	UDORRHENTS, SMOOTHED	C
699	URBAN LAND	C

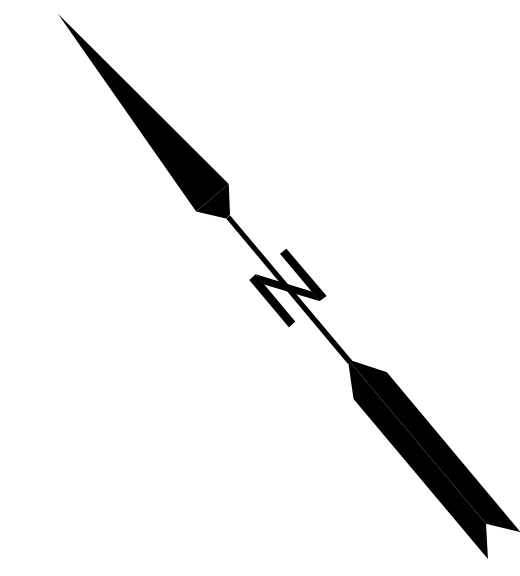
SLOPE PHASE:
A=0-3%, B=3-8%, C=8-15%, D=15-25%, E=25%+

PREPARED FOR:

FOSS MOTORS
133 PORTSMOUTH AVE.
(NH ROUTE 108)
EXETER, NEW HAMPSHIRE



70 PORTSMOUTH AVE,
THIRD FLOOR, SUITE 2
STRATHAM, N.H. 03885
PHONE: 603-583-4860
FAX: 603-583-4863



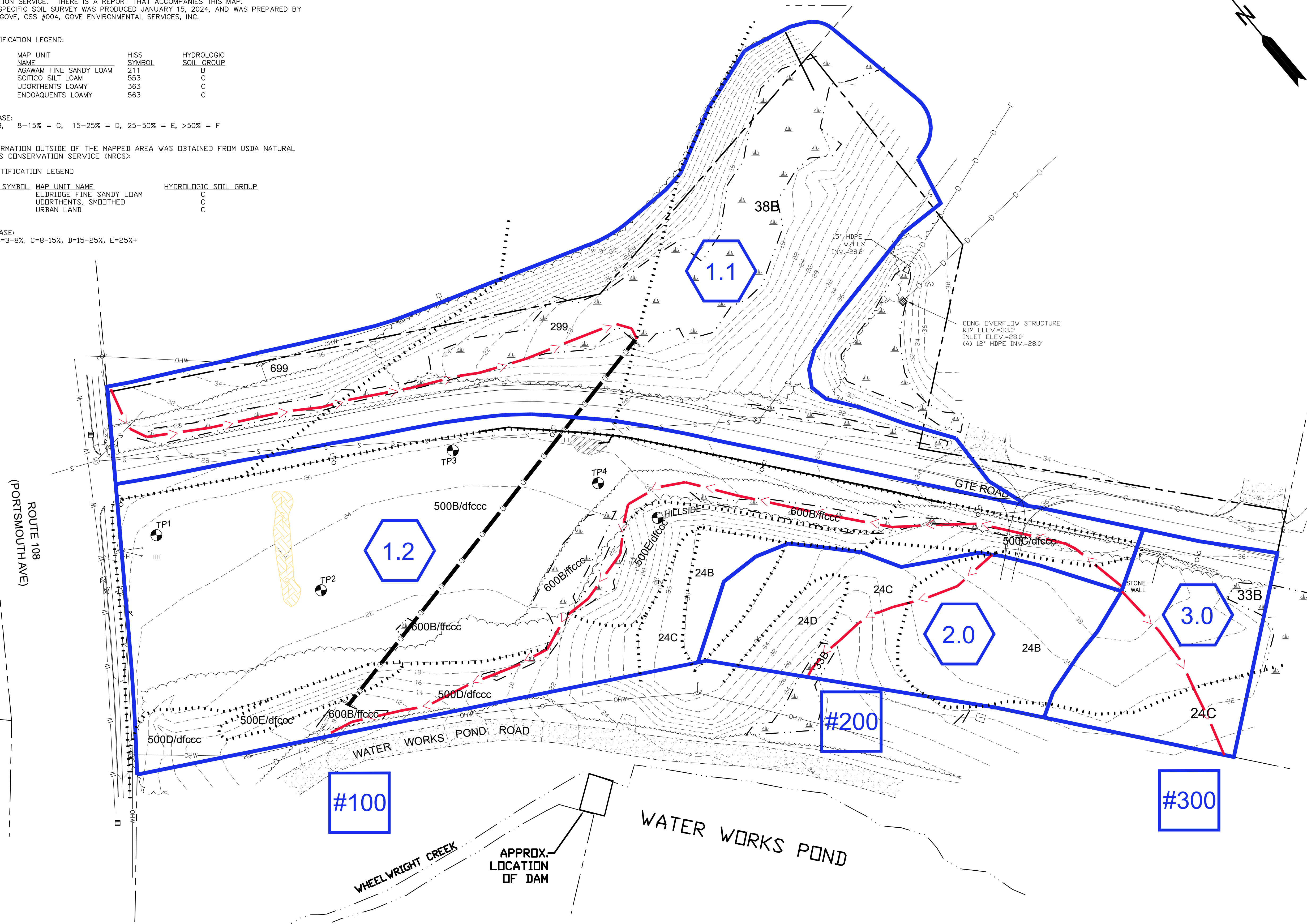
**** THIS DRAWING IS FOR DRAINAGE PURPOSES ONLY ****

WATERSHED LEGEND

- SUBCATCHMENT
- REACH
- POND
- LIMIT OF SUBCATCHMENT
- FLOW PATH

LEGEND

- UTILITY POLE
- TEST PIT W/ NO.
- SURFACE LEDGE
- STONE WALL
- TREE LINE
- EXISTING CONTOUR - 10'
- EXISTING CONTOUR - 2'
- WETLAND BOUNDARY
- SOILS BOUNDARY LINE
- ABUTTING PROPERTY LINE
- EXISTING PROPERTY LINE



REVISED PER REVIEW COMMENTS	6-27-24
REVISED PER REVIEW COMMENTS	5-15-24
REVISED PER REVIEW COMMENTS	4-9-24
REVISIONS:	DATE:

EXISTING WATERSHED PLAN

COMMERCIAL DEVELOPMENT
ROUTE 108
EXETER, NH
TAX MAP 52, LOT 112.2

DATE:	FEBRUARY 2024	SCALE:	1"=40'
PROJ. NO.:	NH-1471	SHEET NO.:	WS-1

SITE SPECIFIC SOIL MAPPING STANDARDS:

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP. THE SITE SPECIFIC SOIL SURVEY WAS PRODUCED JANUARY 15, 2024, AND WAS PREPARED BY JAMES P. GOVE, CSS #004, GOVE ENVIRONMENTAL SERVICES, INC.

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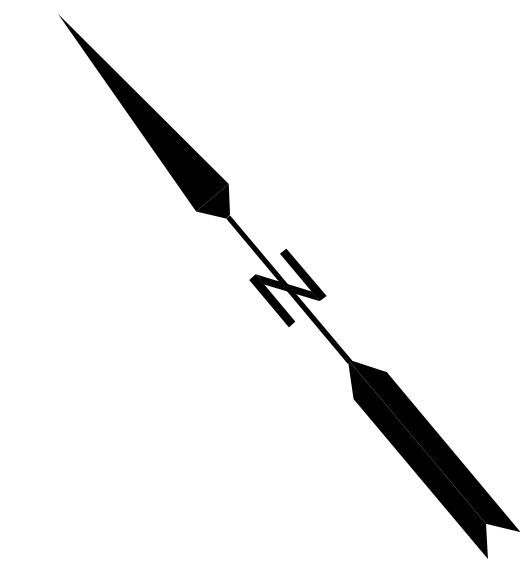
SLOPE PHASE:
A=0-3%, B=3-8%, C=8-15%, D=15-25%, E=25%+

PREPARED FOR:

FOSS MOTORS
133 PORTSMOUTH AVE.
(NH ROUTE 108)
EXETER, NEW HAMPSHIRE



70 PORTSMOUTH AVE,
THIRD FLOOR, SUITE 2
STRATHAM, N.H. 03885
PHONE: 603-583-4860
FAX: 603-583-4863



**** THIS DRAWING IS FOR DRAINAGE PURPOSES ONLY ****

WATERSHED LEGEND

- SUBCATCHMENT
- REACH
- POND
- LIMIT OF SUBCATCHMENT
- FLOW PATH

LEGEND

- UTILITY POLE
- TEST PIT W/ NO.
- SURFACE LEDGE
- STONE WALL
- TREE LINE
- EXISTING CONTOUR - 10'
- EXISTING CONTOUR - 2'
- WETLAND BOUNDARY
- SOILS BOUNDARY LINE
- ABUTTING PROPERTY LINE
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE

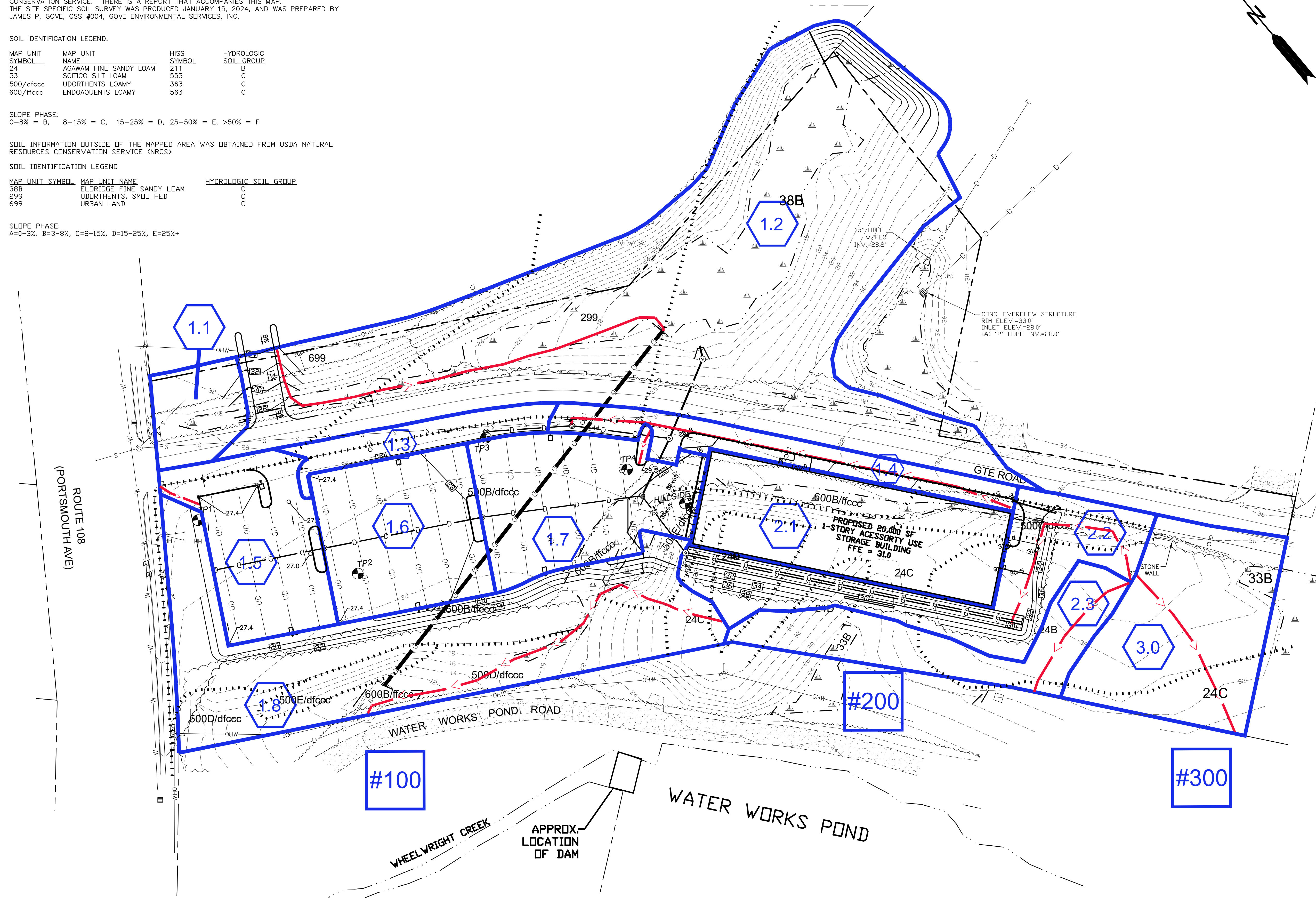


REVISED PER REVIEW COMMENTS	8-6-24
REVISED PER REVIEW COMMENTS	6-27-24
REVISED PER REVIEW COMMENTS	5-15-24
REVISED PER REVIEW COMMENTS	4-9-24
REVISIONS:	DATE:

PROPOSED WATERSHED PLAN

COMMERCIAL DEVELOPMENT
ROUTE 108
EXETER, NH
TAX MAP 52, LOT 112.2

DATE:	FEBRUARY 2024	SCALE:	1"=40'
PROJ. NO.:	NH-1471	SHEET NO.:	WS-2





TOWN OF EXETER

Planning and Building Department

10 FRONT STREET • EXETER, NH • 03833-3792 • (603) 778-0591 • FAX 772-4709

www.exeternh.gov

Date: August 12, 2024
To: Planning Board
From: Dave Sharples, Town Planner
Re: 107 Ponemah Road LLC - 50 Linden Street PB Case #24-11

The Applicant is seeking a multi-family site plan review for the conversion of the existing single-family residence and attached barn on the property located to 50 Linden Street. The Applicant is proposing to remove and replace the attached barn in conjunction with this project along with associated parking and site improvements. The subject property is located in the R-2, Single Family Residential zoning district and is identified as Tax Map Parcel #82-11.

Attached please find an application, plans and supporting documents, dated 7/9/24 for your review. There was no Technical Review Committee (TRC) meeting, however, the plans were reviewed by staff for compliance with zoning and the Board's Site Plan and Subdivision regulations.

The Applicant was granted a special exception approval by the Zoning Board of Adjustment at their October 17th, 2023 meeting for the conversion. Please note that one of the conditions of approval was that the residential units shall be connected to the municipal water and sewer services. A copy of the decision letter and minutes from the ZBA meeting are enclosed with the supporting documents.

The Applicant is not requesting any waivers in conjunction with the application.

I will be prepared with suggested conditions of approval at the meeting in the event the board decides to act on the request.

Planning Board Motions:

Multi-Family Site Plan Motion: I move that the request of 107 Ponemah Road LLC (PB Case #24-11) for Multi-Family Site Plan approval be APPROVED / APPROVED WITH THE FOLLOWING CONDITIONS / TABLED / DENIED.

Thank You.

Enclosures



CELEBRATING OVER 35 YEARS OF SERVICE TO OUR CLIENTS

LIZABETH M. MACDONALD
JOHN J. RATIGAN
ROBERT M. DEROSIER
CHRISTOPHER L. BOLDT
SHARON CUDDY SOMERS
DOUGLAS M. MANSFIELD
KATHERINE B. MILLER
CHRISTOPHER T. HILSON
HEIDI J. BARRETT-KITCHEN
ERIC A. MAHER
CHRISTOPHER D. HAWKINS
ELAINA L. HOEPPNER
WILLIAM K. WARREN
BRIANA L. MATUSZKO

RETIRED
MICHAEL J. DONAHUE
CHARLES F. TUCKER
ROBERT D. CIANDELLA
DENISE A. POULOS
NICHOLAS R. AESCHLIMAN

July 8, 2024

VIA HAND-DELIVERY

Langdon Plumer, Chair
Exeter Planning Board
10 Front Street
Exeter, NH 03833

Re: 107 Ponemah Road LLC

Dear Chair Plumer and Members of the Planning Board:

On behalf of 107 Ponemah Road LLC, enclosed please find an application for site plan approval for Tax Map 82, Lot 11 situated at 50 Linden Street, Exeter, New Hampshire. Henry Boyd of Millenium Engineering has prepared the site plan and will present this application to the Planning Board. I represented the applicant at the ZBA where we secured the necessary special exception which allows the applicant to proceed before this Board. At the time when ZBA approval was granted, a condition was imposed which required the applicant to obtain a sewer easement from the abutting property owned by the Southern District YMCA in order to facilitate a connection for the subject property to the municipal sewer. As part of the application package, we submit a letter of intent secured by the applicant, and if the site plan is approved, then the applicant and the Southern District YMCA will take the next step which is to execute and record the sewer easement. The applicant understands that the Planning Board may wish to impose a condition of approval to ensure that the sewer easement does in fact come in to existence and gets recorded.

Should there be any additional questions, then Henry Boyd can address the same. Thank you for your assistance with this matter.

Sincerely,
DONAHUE, TUCKER & CIANDELLA, PLLC

Sharon Cuddy Somers
ssomers@dtclawyers.com

Enclosures

cc: 107 Ponemah Road LLC
Henry Boyd, Millenium Engineering
4892-3949-4095, v. 1

DONAHUE, TUCKER & CIANDELLA, PLLC
16 Acadia Lane, P.O. Box 630, Exeter, NH 03833
111 Maplewood Avenue, Suite D, Portsmouth, NH 03801
Towle House, Unit 2, 164 NH Route 25, Meredith, NH 03253
83 Clinton Street, Concord, NH 03301



SITE PLAN REVIEW APPLICATION CHECKLIST

A COMPLETED APPLICATION FOR SITE PLAN REVIEW MUST CONTAIN THE FOLLOWING

1. Application for Hearing (X)
2. Abutter's List Keyed to Tax Map (X)
(including the name and business address of every engineer, architect, land surveyor, or soils scientist whose professional seal appears on any plan submitted to the Board)
3. Completed- " Checklist for Site Plan Review" (X)
4. Letter of Explanation (X)
5. Written Request for Waiver (s) from " Site Plan Review and Subdivision Regulations" (if applicable) (X)
6. Completed "Preliminary Application to Connect and /or Discharge to Town of Exeter- Sewer, Water or Storm Water Drainage System(s)"(if applicable) (X)
7. Planning Board Fees (X)
8. Seven (7) full-sized copies of Site Plan (X)
9. Fifteen (15) 11"x17" copies of the final plan to be submitted **TEN DAYS PRIOR** to the public hearing date. (X)
10. Three (3) pre-printed 1"x 2 5/8" labels for each abutter, the applicant and all consultants. (X)

NOTES: All required submittals must be presented to the Planning Department office for distribution to other Town departments. Any material submitted directly to other departments will not be considered.



TOWN OF EXETER, NH APPLICATION FOR SITE PLAN REVIEW

OFFICE USE ONLY

THIS IS AN APPLICATION FOR:

- COMMERCIAL SITE PLAN REVIEW
- INDUSTRIAL SITE PLAN REVIEW
- MULTI-FAMILY SITE PLAN REVIEW
- MINOR SITE PLAN REVIEW
- INSTITUTIONAL/NON-PROFIT SPR

_____	APPLICATION #
_____	DATE RECEIVED
_____	APPLICATION FEE
_____	PLAN REVIEW FEE
_____	ABUTTERS FEE
_____	LEGAL NOTICE FEE
_____	TOTAL FEES

_____	INSPECTION FEE
_____	INSPECTION COST
_____	REFUND (IF ANY)

1. NAME OF LEGAL OWNER OF RECORD: 107 Ponemah Road, LLC

TELEPHONE: (603) 501-9268

ADDRESS: 131 Daniel Webster Highway, #888, Nashua, NH 03060

2. NAME OF APPLICANT: same

ADDRESS: same

TELEPHONE: () _____

3. RELATIONSHIP OF APPLICANT TO PROPERTY IF OTHER THAN OWNER: _____

(Written permission from Owner is required, please attach.)

4. DESCRIPTION OF PROPERTY: Single family residence

ADDRESS: 50 Linden Street

TAX MAP: 82 PARCEL #: 11 ZONING DISTRICT: R2

AREA OF ENTIRE TRACT: 14,594 SF (.34 ac)

5. PORTION BEING DEVELOPED: 4,117 SF (.09 ac)



5. **ESTIMATED TOTAL SITE DEVELOPMENT COST \$** \$50,000 for site work/\$350,000 for building construction/renovation
6. **EXPLANATION OF PROPOSAL:** The conversion of an existing single family residence and attached barn (to be removed and replaced) into three (3) residential condominium units.
7. **ARE MUNICIPAL SERVICES AVAILABLE? (YES/NO)** _____
Yes _____ If yes, Water and Sewer Superintendent must grant written approval for connection.
If no, septic system must comply with W.S.P.C.C. requirements.
8. **LIST ALL MAPS, PLANS AND OTHER ACCOMPANYING MATERIAL SUBMITTED WITH THIS APPLICATION:**
- | <u>ITEM:</u> | <u>NUMBER OF COPIES</u> |
|-----------------------------|-------------------------------|
| A. Existing Conditions Plan | Fifteen 11 x 17 & 7 full size |
| B. Proposed Conditions Plan | Fifteen 11 x 17 & 7 full size |
| C. Tax Map | Fifteen 11 x 17 |
9. **ANY DEED RESTRICTIONS AND COVENANTS THAT APPLY OR ARE CONTEMPLATED (YES/NO)** No _____ IF YES, ATTACH COPY.
10. **NAME AND PROFESSION OF PERSON DESIGNING PLAN:**
- NAME:** Henry Boyd, LLC, Millennium Engineering, Inc.
- ADDRESS:** 13 Hampton Road, Exeter, NH 03833
- PROFESSION:** Licensed Land Surveyor **TELEPHONE:** 603-772-0689
11. **LIST ALL IMPROVEMENTS AND UTILITIES TO BE INSTALLED:**
See Proposed Conditions Plan; includes two story building, pervious paver driveway and sewer line to connect to municipal sewer.



12. HAVE ANY SPECIAL EXCEPTIONS OR VARIANCES BEEN GRANTED BY THE ZONING BOARD OF ADJUSTMENT TO THIS PROPERTY PREVIOUSLY? YES

IF YES, DESCRIBE BELOW. (Please check with the Planning Department Office to verify)

A Special Exception was granted by the Exeter Zoning Board of Adjustment on October 17, 2023 to permit the conversion of an existing single family residence and attached barn into three (3) residential condominium units.

13. WILL THE PROPOSED PROJECT INVOLVE DEMOLITION OF ANY EXISTING BUILDINGS OR APPURTENANCES? IF YES, DESCRIBE BELOW.

(Please note that any proposed demolition may require review by the Exeter Heritage Commission in accordance with Article 5, Section 5.3.5 of the Exeter Zoning Ordinance).

Yes, the existing barn will be demolished pursuant to the Plan.

14. WILL THE PROPOSED PROJECT REQUIRE A “NOTICE OF INTENT TO EXCAVATE” (State of NH Form PA-38)? IF YES, DESCRIBE BELOW.

NOTICE: I CERTIFY THAT THIS APPLICATION AND THE ACCOMPANYING PLANS AND SUPPORTING INFORMATION HAVE BEEN PREPARED IN CONFORMANCE WITH ALL APPLICABLE REGULATIONS; INCLUDING BUT NOT LIMITED TO THE “SITE PLAN REVIEW AND SUBDIVISION REGULATIONS” AND THE ZONING ORDINANCE. FURTHERMORE, IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 15.2 OF THE “SITE PLAN REVIEW AND SUBDIVISION REGULATIONS”, I AGREE TO PAY ALL COSTS ASSOCIATED WITH THE REVIEW OF THIS APPLICATION.

DATE _____ OWNER’S SIGNATURE _____

ACCORDING TO RSA 676.4.I (c), THE PLANNING BOARD MUST DETERMINE WHETHER THE APPLICATION IS COMPLETE WITHIN 30 DAYS OF SUBMISSION. THE PLANNING BOARD MUST ACT TO APPROVE, CONDITIONALLY APPROVE, OR DENY AN APPLICATION WITHIN SIXTY FIVE (65) DAYS OF ITS ACCEPTANCE BY THE BOARD AS A COMPLETE APPLICATION. A SEPARATE FORM ALLOWING AN EXTENSION OR WAIVER TO THIS REQUIREMENT MAY BE SUBMITTED BY THE APPLICANT.

Millennium Engineering, Inc.

P.O. Box 745
(603) 778-0528

Exeter, NH 03833
FAX (603) 772-0689

July 02, 2023

Town of Exeter
Planning Board
10 Front Street
Exeter, NH 03833

Re: Application for Site Plan Map 82 Lot 11, 50 Linden Street Exeter, NH.

Dear Chair:

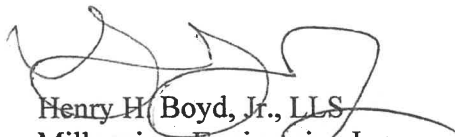
We graciously request waivers from the Site Plan Regulations for the following items:

Section 7.4.10 & 7.5.4 High Intensity Soils Survey. Whereas this site will be improved by the residential dwellings going onto the town sewer and removed from the existing septic system, we feel that this requirement is unnecessary.

Section 7.4.15 To locate and show all structures within 200' of the site. We have located and shown the closest portions of the structures on the abutting lots. We believe that anything beyond this is unnecessary.

We also ask that the requirement for Other Plan Requirement Section(s) 7.7, 7.8, 7.9, 7.10, 7.11, 7.12 & 7.13 be waived as they are either not pertinent or unnecessary.

Respectfully,



Henry H. Boyd, Jr., LLS
Millennium Engineering Inc.



SITE PLAN REQUIREMENTS

7.4 Existing Site Conditions Plan

Submission of this plan will not be applicable in all cases. The applicability of such a plan will be considered by the TRC during its review process as outlined in Section 6.5 Technical Review Committee (TRC) of these regulations. The purpose of this plan is to provide general information on the site, its existing conditions, and to provide the base data from which the site plan or subdivision will be designed. The plan shall show the following:

APPLICANT	TRC	REQUIRED EXHIBITS
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.1 Names, addresses, and telephone numbers of the owner, applicant, and person(s) or firm(s) preparing the plan.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.2 Location of the site under consideration, together with the current names and addresses of owners of record, of abutting properties and their existing land use.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.3 Title, date, north arrow, scale, and Planning Board Case Number.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.4 Tax map reference for the site under consideration, together with those of abutting properties.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.5 Zoning (including overlay) district references.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.6 A vicinity sketch or aerial photo showing the location of the land/site in relation to the surrounding public street system and other pertinent location features within a distance of 2,000-feet, or larger area if deemed necessary by the Town Planner.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.7 Natural features including watercourses and water bodies, tree lines, significant trees (20-inches or greater in diameter at breast height) and other significant vegetative cover, topographic features, and any other environmental features that are important to the site design process.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.8 Man-made features such as, but not limited to, existing roads, structures, and stone walls. The plan shall also indicate which features are to be retained and which are to be removed or altered.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.9 Existing contours at intervals not to exceed 2-feet with spot elevations provided when the grade is less than 5%. All datum provided shall reference the latest applicable US Coast and Geodetic Survey datum and should be noted on the plan.
<input type="checkbox"/>	<input type="checkbox"/>	7.4.10 A High Intensity Soil Survey (HISS) of the entire site, or appropriate portion thereof. Such soil surveys shall be prepared by a certified soil scientist in accordance with the standards established by the Rockingham County Conservation District. Any cover letters or explanatory data provided by the certified soil scientist shall also be submitted.

WAIVER



<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.11 State and Federally designated wetlands, setback information, total wetlands proposed to be filled, other pertinent information and the following wetlands note: "The landowner is responsible for complying with all applicable local, state, and federal wetlands regulations, including any permitting and setback requirements required under these regulations."
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.12 Surveyed property lines including angles and bearings, distances, monument locations, and size of the entire parcel. A professional land surveyor licensed in New Hampshire must attest to said plan.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.13 The lines of existing abutting streets and driveway locations within 200-feet of the site.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.14 The location, elevation, and layout of existing catch basins and other surface drainage features.
<input type="checkbox"/>	<input type="checkbox"/>	7.4.15 The shape, size, height, location, and use of all existing structures on the site and approximate location of structures within 200-feet of the site.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.16 The size and location of all existing public and private utilities, including off-site utilities to which connection is planned.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.17 The location of all existing easements, rights-of-way, and other encumbrances.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.18 All floodplain information, including the contours of the 100-year flood elevation, based upon the Flood Insurance Rate Map for Exeter, as prepared by the Federal Emergency Management Agency, dated May 17, 1982. <i>MAY 17, 2002</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.19 All other features which would fully explain the existing conditions of the site.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.20 Name of the site plan or subdivision.

WAIVER



7.5 Proposed Site Conditions Plan (Pertains to Site Plans Only)

The purpose of this plan is to illustrate and fully explain the proposed changes taking place within the site. The proposed site conditions plan shall depict the following:

APPLICANT	TRC	REQUIRED EXHIBITS
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.1 Proposed grades and topographic contours at intervals not to exceed 2-feet with spot elevations where grade is less than 5%. All datum provided shall reference the latest applicable US Coast and Geodetic Survey datum and should be noted on the plan.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.2 The location and layout of proposed drainage systems and structures including elevations for catch basins.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.3 The shape, size, height, and location of all proposed structures, including expansion of existing structures on the site and first floor elevation(s). Building elevation(s) and a rendering of the proposed structure(s).
WAWER <input type="checkbox"/>	<input type="checkbox"/>	7.5.4 High Intensity Soil Survey (HISS) information for the site, including the total area of wetlands proposed to be filled.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.5 State and Federally designated wetlands, setback information, total wetlands proposed to be filled, other pertinent information and the following wetlands note: "The landowner is responsible for complying with all applicable local, state, and federal wetlands regulations, including any permitting and setback requirements required under these regulations."
N/A <input type="checkbox"/>	<input type="checkbox"/>	7.5.6 Location and timing patterns of proposed traffic control devices.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.7 The location, width, curbing and paving of all existing and proposed streets, street rights-of-way, easements, alleys, driveways, sidewalks and other public ways. The plan shall indicate the direction of travel for one-way streets. See Section 9.14 – Roadways, Access Points, and Fire Lanes for further guidance.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.8 The location, size and layout of off-street parking, including loading zones. The plan shall indicate the calculations used to determine the number of parking spaces required and provided. See Section 9.13 – Parking Areas for further guidance.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.9 The size and location of all proposed public and private utilities, including but not limited to: water lines, sewage disposal facilities, gas lines, power lines, telephone lines, cable lines, fire alarm connection, and other utilities.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.10 The location, type, and size of all proposed landscaping, screening, green space, and open space areas.
N/A <input type="checkbox"/>	<input type="checkbox"/>	7.5.11 The location and type of all site lighting, including the cone(s) of illumination to a measurement of 0.5-foot-candle.
N/A <input type="checkbox"/>	<input type="checkbox"/>	7.5.12 The location, size, and exterior design of all proposed signs to be located on the site.
N/A <input type="checkbox"/>	<input type="checkbox"/>	7.5.13 The type and location of all solid waste disposal facilities and accompanying screening.

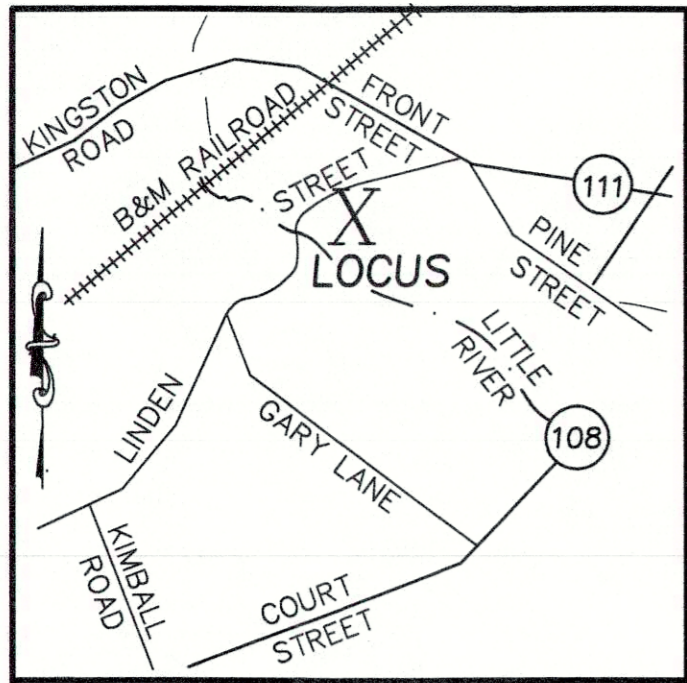


<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.14 Location of proposed on-site snow storage.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.15 Location and description of all existing and proposed easement(s) and/or right-of-way.
<input type="checkbox"/>	<input type="checkbox"/>	7.5.16 A note indicating that: "All water, sewer, road (including parking lot), and drainage work shall be constructed in accordance with Section 9.5 Grading, Drainage, and Erosion & Sediment Control and the Standard Specifications for Construction of Public Utilities in Exeter, New Hampshire". See Section 9.14 Roadways, Access Points, and Fire Lanes and Section 9.13 Parking Areas for exceptions.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.17 Signature block for Board approval

N/A

OTHER PLAN REQUIREMENTS (See Section indicated)

- 7.7 Construction plan
- 7.8 Utilities plan
- 7.9 Grading, drainage and erosion & sediment control plan
- 7.10 Landscape plan
- 7.11 Drainage Improvements and Storm Water Management Plan
- 7.12 Natural Resources Plan
- 7.13 Yield Plan



LOCUS MAP
NOT TO SCALE

NOTES:

- THIS PLAN DOES NOT SHOW ANY UNRECORDED OR UNWRITTEN EASEMENTS WHICH MAY EXIST. A REASONABLE AND DILIGENT ATTEMPT HAS BEEN MADE TO OBSERVE ANY APPARENT VISIBLE USES OF THE LAND; HOWEVER, THIS DOES NOT CONSTITUTE A GUARANTEE THAT NO SUCH EASEMENTS EXIST.
- THIS PARCEL DOES NOT LIE WITHIN A FLOOD ZONE. SEE FIRM COMMUNITY PANEL 33015C 0402 E. EFFECTIVE DATE: MAY 17, 2005.
- ELEVATIONS SHOWN ARE BASED ON NAVD 88'
- THE LANDOWNER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLANDS REGULATIONS, INCLUDING ANY PERMITTING AND SETBACK REQUIREMENTS REQUIRED UNDER THESE REGULATIONS.

TOWN OF EXETER PLANNING BOARD

CHAIRMAN _____ DATE _____

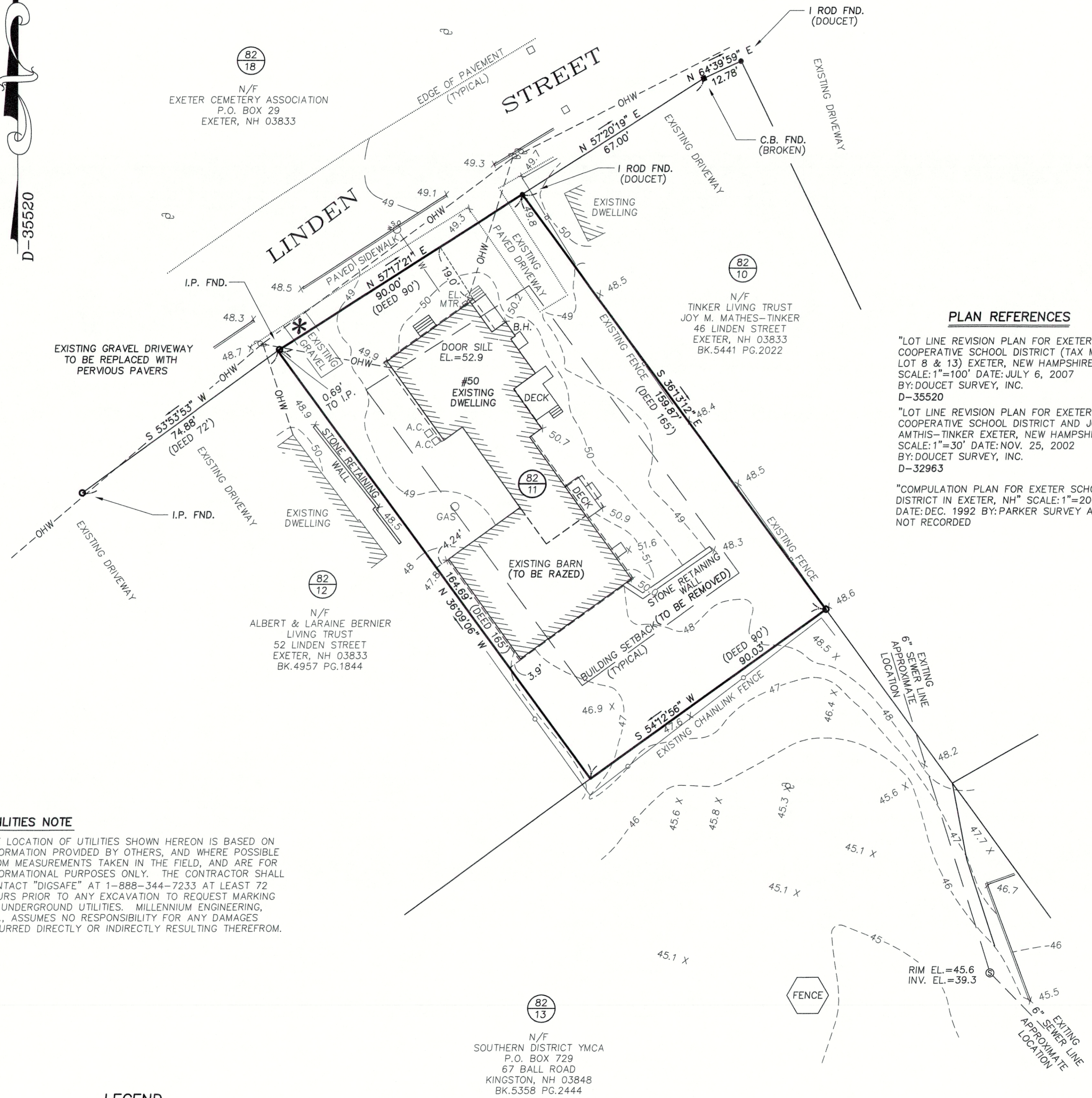
RECORD OWNERS

82/11
107 PONEMAH ROAD LLC
131 DANIEL WEBSTER HIGHWAY #888
NASHUA, NH 03060
BK.6398 PG.2561
14,594 S.F.
0.34 ACRES

EXISTING IMPERVIOUS SURFACE 4,139 S.F.
28.4% OF LOT AREA
EXISTING LOT COVERAGE AREA 4,139 S.F.
IS 28.4% OF LOT AREA
EXISTING BUILDING COVERAGE 3,188 S.F.
DOES NOT INCLUDE DECKS, STEPS OR ROOF
21.4% OF LOT AREA

ZONING DISTRICT

ZONE R2 SINGLE FAMILY
AREA 15,000 S.F.
LOT WIDTH 100'
LOT DEPTH 100'
BUILDING COVERAGE 25%
BUILDING SETBACKS
FRONT 25'
SIDE 15'
REAR 25'



PLAN REFERENCES

- "LOT LINE REVISION PLAN FOR EXETER REGION COOPERATIVE SCHOOL DISTRICT (TAX MAP 82, LOT 8 & 13) EXETER, NEW HAMPSHIRE" SCALE: 1"=100' DATE: JULY 6, 2007 BY: DOUCET SURVEY, INC. D-35520
- "LOT LINE REVISION PLAN FOR EXETER REGION COOPERATIVE SCHOOL DISTRICT AND JOY M. AMTHIS-TINKER EXETER, NEW HAMPSHIRE" SCALE: 1"=30' DATE: NOV. 25, 2002 BY: DOUCET SURVEY, INC. D-32963
- "COMPUTATION PLAN FOR EXETER SCHOOL DISTRICT IN EXETER, NH" SCALE: 1"=200' DATE: DEC. 1992 BY: PARKER SURVEY ASSOC., INC. NOT RECORDED

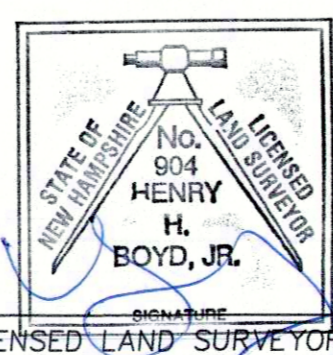
UTILITIES NOTE

THE LOCATION OF UTILITIES SHOWN HEREON IS BASED ON INFORMATION PROVIDED BY OTHERS, AND WHERE POSSIBLE FROM MEASUREMENTS TAKEN IN THE FIELD, AND ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL CONTACT "DIGSAFE" AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST MARKING OF UNDERGROUND UTILITIES. MILLENNIUM ENGINEERING, INC., ASSUMES NO RESPONSIBILITY FOR ANY DAMAGES INCURRED DIRECTLY OR INDIRECTLY RESULTING THEREFROM.

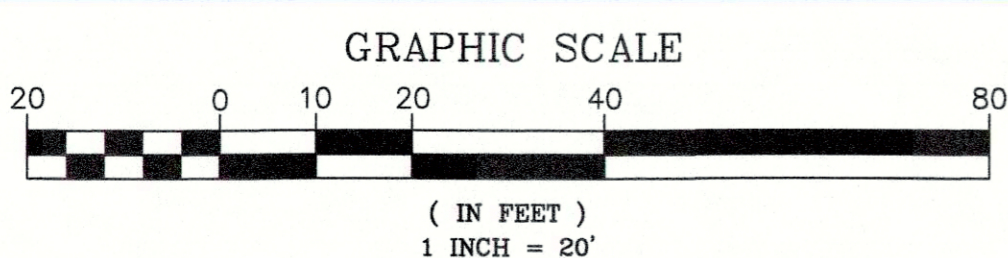
LEGEND

- C.B. CONCRETE BOUND
- I.P. IRON PIPE
- I ROD IRON ROD
- FND. FOUND
- /○ ASSESSORS MAP AND PARCEL
- OHW OVER HEAD WIRE
- UTILITY POLE
- ⊙ WATER SHUT OFF
- W WATER SERVICE
- S SEWER SERVICE
- LOCATION UNCERTAIN

I CERTIFY:
THAT THIS ACTUAL SURVEY WAS MADE ON THE GROUND IN JUNE OF 2022.
THAT THIS SURVEY CONFORMS TO THE REQUIREMENTS FOR ACCURACY FOR N.H. URBAN SURVEY.

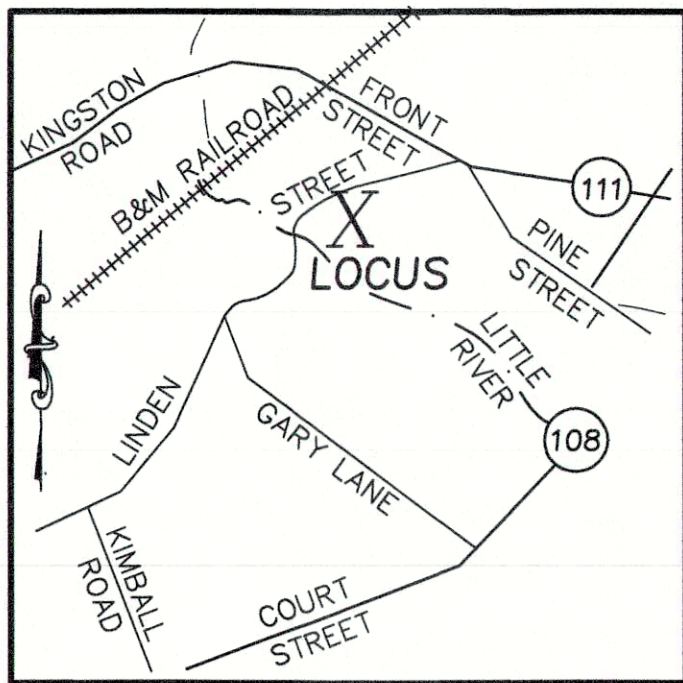


DATE 07-22-2024



PLANNING BOARD CASE NUMBER 24-XX		
EXISTING CONDITIONS		
SITE PLAN		
IN EXETER, NH		
SHOWING PROPOSED SITE IMPROVEMENTS AT 50 LINDEN STREET (ASSESSORS MAP 82 LOT 11)		
RECORD OWNERS 107 PONEMAH ROAD LLC 131 DANIEL WEBSTER HIGHWAY #888 NASHUA, NH 03060		
MILLENNIUM ENGINEERING INC. ENGINEERS AND LAND SURVEYORS P.O. BOX 745 13 HAMPTON ROAD EXETER, NH 03833 PHONE: (603) 778-0528 FAX: (603) 772-0689 WWW.MEI-NH.COM		
SCALE: 1"=20'	DRWN. BY: H.H.B.	PROJECT: E222905
DATE: MAY 02, 2024	CHKD. BY: R.S.G.	SHEET 1 OF 2

NO.	DATE	DESCRIPTION	BY



LOCUS MAP
NOT TO SCALE

NOTES:

- THIS PLAN DOES NOT SHOW ANY UNRECORDED OR UNWRITTEN EASEMENTS WHICH MAY EXIST. A REASONABLE AND DILIGENT ATTEMPT HAS BEEN MADE TO OBSERVE ANY APPARENT VISIBLE USES OF THE LAND; HOWEVER, THIS DOES NOT CONSTITUTE A GUARANTEE THAT NO SUCH EASEMENTS EXIST.
- THIS PARCEL DOES NOT LIE WITHIN A FLOOD ZONE. SEE FIRM COMMUNITY PANEL 33015C 0402 E. EFFECTIVE DATE: MAY 17, 2005.
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- THE LANDOWNER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLANDS REGULATIONS, INCLUDING ANY PERMITTING AND SETBACK REQUIREMENTS REQUIRED UNDER THESE REGULATIONS.

TOWN OF EXETER PLANNING BOARD

CHAIRMAN _____ DATE _____

RECORD OWNERS

82
11
107 PONEMAH ROAD LLC
131 DANIEL WEBSTER HIGHWAY #888
NASHUA, NH 03060
BK.6398 PG.2561
14,594 S.F.
0.34 ACRES

ZONING DISTRICT

ZONE R2 SINGLE FAMILY
AREA 15,000 S.F.
LOT WIDTH 100'
LOT DEPTH 100'
BUILDING COVERAGE 25%
BUILDING SETBACKS
FRONT 25'
SIDE 15'
REAR 25'

UTILITIES NOTE

THE LOCATION OF UTILITIES SHOWN HEREON IS BASED ON INFORMATION PROVIDED BY OTHERS, AND WHERE POSSIBLE FROM MEASUREMENTS TAKEN IN THE FIELD, AND ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL CONTACT "DIGSAFE" AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST MARKING OF UNDERGROUND UTILITIES. MILLENNIUM ENGINEERING, INC., ASSUMES NO RESPONSIBILITY FOR ANY DAMAGES INCURRED DIRECTLY OR INDIRECTLY RESULTING THEREFROM.

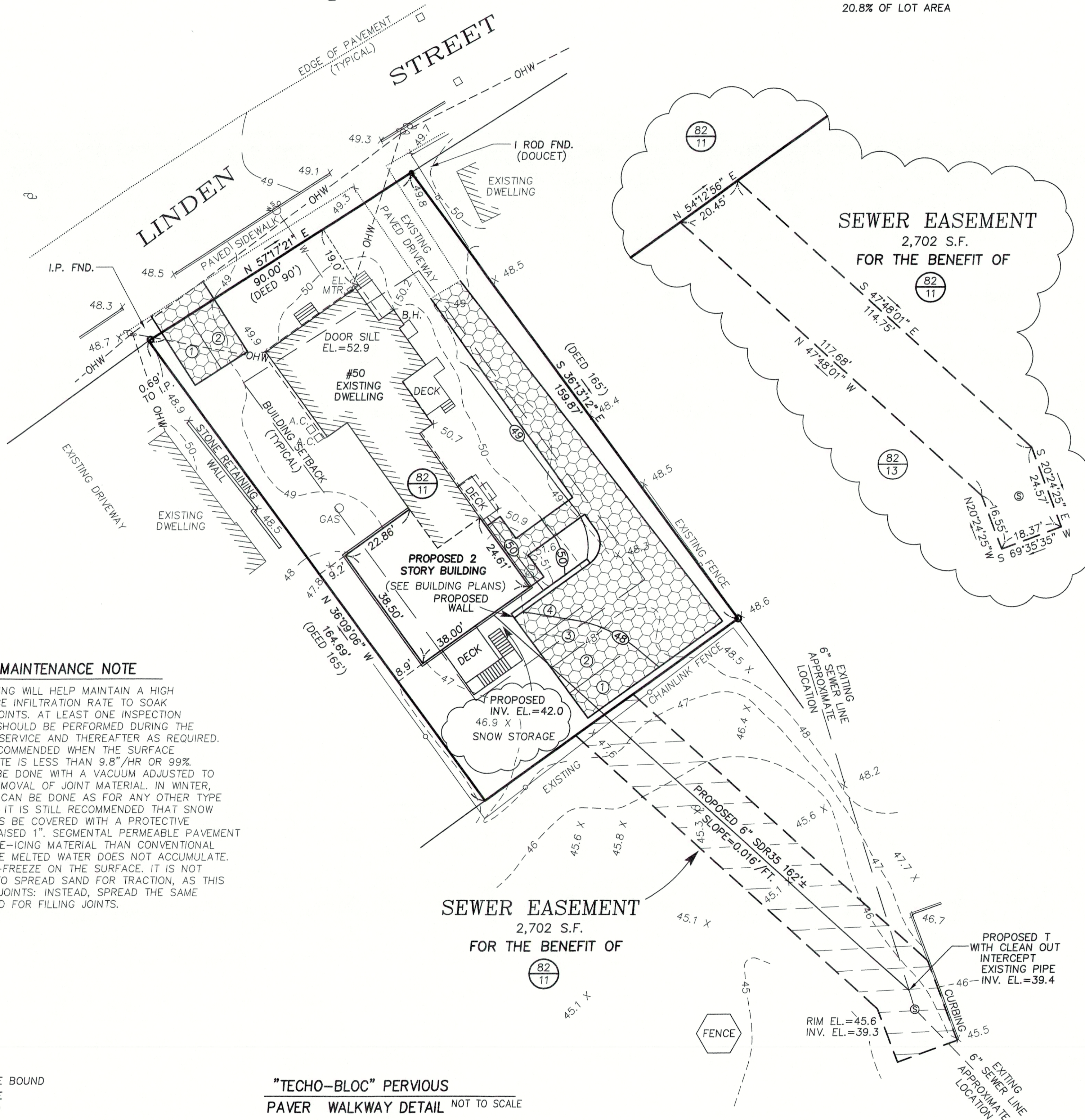
EXISTING IMPERVIOUS SURFACE 4,139 S.F.
28.4% OF LOT AREA

EXISTING LOT COVERAGE AREA 4,139 S.F.
IS 28.4% OF LOT AREA

PROPOSED IMPERVIOUS SURFACE 4,117 S.F.
28.2% OF LOT AREA

PROPOSED LOT COVERAGE AREA 7,400 S.F.
IS 50.7% OF LOT AREA

PROPOSED BUILDING COVERAGE 3,030 S.F.
DOES NOT INCLUDE DECKS, STEPS OR ROOF
20.8% OF LOT AREA



PAVER MAINTENANCE NOTE

REGULAR CLEANING WILL HELP MAINTAIN A HIGH ENOUGH SURFACE INFILTRATION RATE TO SOAK THROUGH THE JOINTS. AT LEAST ONE INSPECTION AND CLEANING SHOULD BE PERFORMED DURING THE FIRST YEAR OF SERVICE AND THEREAFTER AS REQUIRED. CLEANING IS RECOMMENDED WHEN THE SURFACE INFILTRATION RATE IS LESS THAN 9.8"/HR OR 99% CLEANING CAN BE DONE WITH A VACUUM ADJUSTED TO MINIMIZE THE REMOVAL OF JOINT MATERIAL. IN WINTER, SNOW REMOVAL CAN BE DONE AS FOR ANY OTHER TYPE OF PAVING, BUT IT IS STILL RECOMMENDED THAT SNOW REMOVAL BLADES BE COVERED WITH A PROTECTIVE COATING AND RAISED 1". SEGMENTAL PERMEABLE PAVEMENT REQUIRE LESS DE-ICING MATERIAL THAN CONVENTIONAL PAVEMENT. SINCE MELTED WATER DOES NOT ACCUMULATE, IT WILL NOT RE-FREEZE ON THE SURFACE. IT IS NOT RECOMMENDED TO SPREAD SAND FOR TRACTION, AS THIS MAY CLOG THE JOINTS; INSTEAD, SPREAD THE SAME AGGREGATE USED FOR FILLING JOINTS.

SEWER EASEMENT

2,702 S.F.
FOR THE BENEFIT OF

82
11

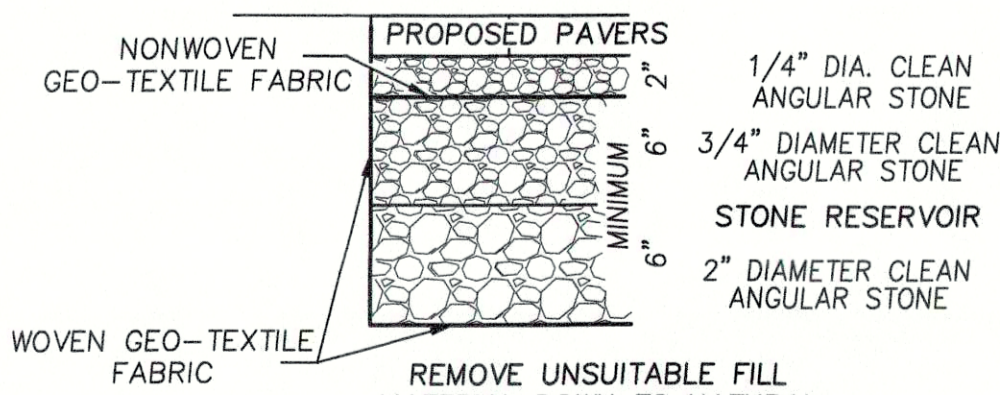
LEGEND

- C.B. CONCRETE BOUND
- I.P. IRON PIPE
- I ROD IRON ROD
- FND. FOUND
- /○ ASSESSORS MAP AND PARCEL
- OHW OVER HEAD WIRE UTILITY POLE
- ⊕ WATER SHUT OFF
- W — WATER SERVICE
- S — SEWER SERVICE LOCATION UNCERTAIN
- PROPOSED PERVIOUS PAVER
- ③ PROPOSED PARKING SPACE
- 49 — PROPOSED CONTOUR

"TECHO-BLOC" PERVIOUS

PAVER WALKWAY DETAIL NOT TO SCALE

"TECHO-BLOC" PERVIOUS PAVERS. REFER TO MANUFACTURERS SPECIFICATIONS AND INSTALLATION GUIDELINES PROVIDED HEREWITH.



* SAND SHALL BE GRADED SAND, FREE FROM ORGANIC MATERIALS, GRADED SUCH THAT 100% PASSES A 0.5" SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE.

PLANNING BOARD CASE NUMBER 24-XX

PROPOSED CONDITIONS

SITE PLAN

IN EXETER, NH

SHOWING
PROPOSED SITE IMPROVEMENTS
AT 50 LINDEN STREET
(ASSESSORS MAP 82 LOT 11)

RECORD OWNERS

107 PONEMAH ROAD LLC
131 DANIEL WEBSTER HIGHWAY #888 NASHUA, NH 03060

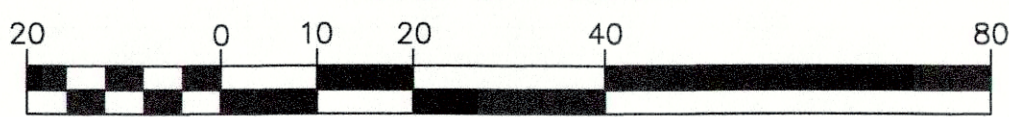
MILLENNIUM ENGINEERING INC.

ENGINEERS AND LAND SURVEYORS
P.O. BOX 745 13 HAMPTON ROAD EXETER, NH 03833
PHONE:(603)778-0528 FAX:(603)772-0689 WWW.MEI-NH.COM

SCALE: 1"=20' DRWN. BY: H.H.B. PROJECT: E222905

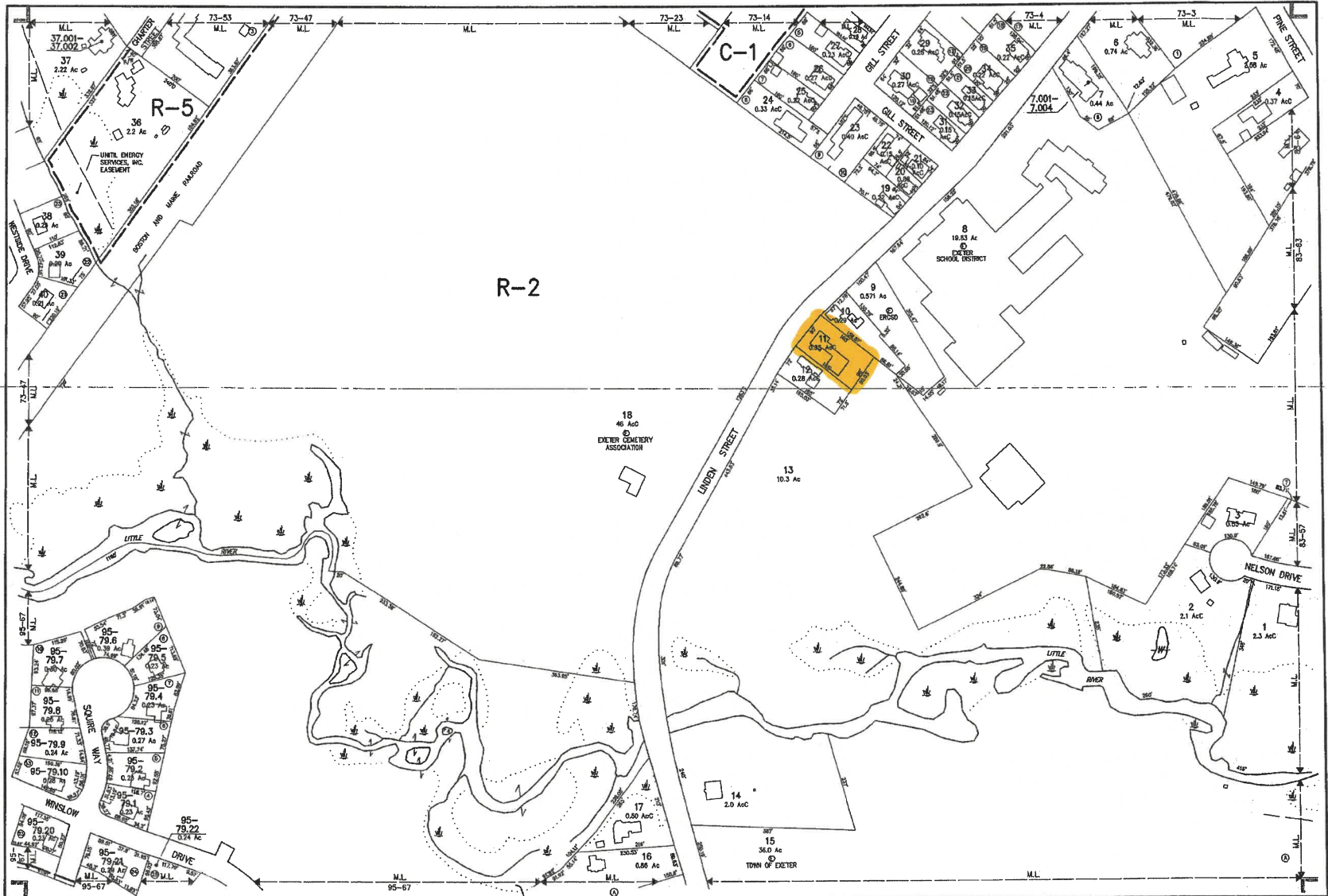
DATE: MAY 02, 2024 CHKD. BY: R.S.G. SHEET 2 OF 2


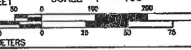

GRAPHIC SCALE



(IN FEET)
1 INCH = 20'

NO.	DATE	DESCRIPTION	BY



<p>THIS MAP IS FOR ASSESSMENT PURPOSES. IT IS NOT VALID FOR LEGAL DESCRIPTION OR CONVEYANCE.</p> <p>THE HORIZONTAL DATUM IS THE NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM.</p> <p>PHOTOGRAPHY DATE: APRIL 25, 1995</p> <p>COMPLETION DATE: MARCH 28, 1998</p>	<p>PRODUCED IN 1998 BY</p>  <p>11 PLEASANT SPRING LITTLETON, NH 03034-0040 WWW.CITYOFEXETER.COM</p>	<p>LEGEND</p> <p>AREA SURVEYED Ac</p> <p>AREA CALCULATED Ac</p> <p>RECORD DIMENSIONS 100'</p> <p>SCALED DIMENSIONS 1000'</p> <p>SEARCH LINE ← →</p> <p>WATER ← →</p>	<p>LEGEND</p> <p>EXEMPT PROPERTY (circle with dot)</p> <p>BARRENDEN LOT NO. (circle with number)</p> <p>ZONE MAP (circle with 'Z')</p> <p>RIGHT OF WAY (circle with 'R')</p> <p>COMMON DIMENSION (circle with 'C')</p> <p>BALANCE (circle with 'B')</p> <p>WETLANDS (circle with 'W')</p>	<p>SCALE 1" = 100'</p>  <p>REVISD TO: APRIL 1, 2021</p>	<p>PROPERTY MAPS</p> <p>EXETER</p> <p>NEW HAMPSHIRE</p>	<p>INDEX DIAGRAM</p>  <p>MAP NO. 82</p>
---	--	--	---	--	--	---



Stephen Yevich
Finance Director
Southern District YMCA-Camp Lincoln, Inc.
56 Linden Street
Exeter, NH 03833
December 11, 2023

Via email
Ravi Kichannagari & Gal Peretz
107 Ponemah Road LLC

Re: 50 Linden St., Exeter, NH 03833

Dear Ravi & Gal,

Please accept this letter in response to your request to locate a portion of the sewer drainpipe under land located at 56 Linden Street in Exeter, New Hampshire that is owned by the Southern District YMCA-Camp Lincoln Inc. ("SDYMCA"). Conceptually SDYMCA is in favor of granting you an easement, but our agreement would be subject to our review and acceptance of recordable plans depicting the easement area along with a draft of the recordable easement document. Due to the fact that an easement is a legal document, we would involve our legal counsel to ensure appropriate provisions are included in the easement, such as a requirement to maintain the easement, reimburse SDYMCA for any expenses associated with the easement, etc... One foreseeable expense is related to review by legal counsel of the documents to be prepared. Accordingly, we would request that 107 Ponemah Road LLC would reimburse us for the review, as well as any other expense that SDYMCA may incur in connection with granting the easement.

If you have any questions, please let me know. If you are in agreement with the above, please countersign a copy of this letter and return it to my attention.

Thank you,

Stephen C. Yevich, Finance Director - SDYMCA

Agreed to:

Ravi Kichannagari

Ravi Kichannagari

Gal Peretz

Gal Peretz

Southern District YMCA
56 Linden Street
Exeter, NH 03833

Camp Lincoln
67 Ball Road
Kingston, NH 03848

School Age Child Care
56 Linden Street
Exeter, NH 03833

BERNIER ALBERT & LARAINÉ
52 Linden St
Exeter, NH 03833

To Whom It may concern

We are the owners of 52 Linden St, Exeter, NH. This is in reference to the property at **50 Linden St, Exeter, NH** belonging to **107 Ponemah RD LLC** and represented by Gal Peretz and Ravi Kichannagari. I have been communicating with Gal Peretz over the past one year regarding their plan to add additional units at the back of the property. We have agreed to the following as the screening needed in between the properties.

- Thuja Green Giant - Arbor Vitea

The Arbor Vitea should be planted 5 to 6 ft apart to allow for proper growth of the plant. The plant should initially be a minimum of 3 to 4 Ft Tall to start with.

We acknowledge that this will help for Privacy and in insulating any noise from the adjacent properties.

Thanks

Laraine Bernier

Laraine Bernier

Dated Nov 1, 2023

LETTER OF AUTHORIZATION

I, Gal Peretz, duly authorized representative of 107 Ponemah Road, LLC, owner of property depicted on Tax Map 82, Lot 11, do hereby authorize Donahue, Tucker and Ciandella, PLLC, to execute any land use applications to the Town of Exeter and to take any action necessary for the application and permitting process, including but not limited to, attendance and presentation at public hearings, of the said property.

Dated: 09-30-2022

107 PONEMAH ROAD, LLC

Gal Peretz
Gal Peretz, duly authorized

**107 PONEMAH ROAD, LLC
TAX MAP 82, LOT 11
50 LINDEN STREET
ABUTTER LIST**

OWNER/APPLICANT:

82/11 107 Ponemah Road, LLC
131 Daniel Webster Highway #888
Nashua, NH 03060

ABUTTERS:

82/18 Exeter Cemetery Association
PO Box 29
Exeter, NH 03833

82/12 Albert & Laraine Bernier Living Trust
52 Linden Street
Exeter, NH 03833

82/13 Southern District YMCA
56 Linden Street
Exeter, NH 03833

82/10 Theresa Page
Lucas Elsasser
46 Linden Street
Exeter, NH 03833

ATTORNEY: Sharon Cuddy Somers, Esq.
Donahue, Tucker & Ciandella, PLLC
16 Acadia Lane
Exeter, NH 03833

SURVEYOR: Henry Boyd
Millennium Engineering
13 Hampton Road
Exeter, NH 03833



TOWN OF EXETER, NEW HAMPSHIRE

10 FRONT STREET • EXETER, NH • 03833-3792 • (603) 778-0591 • FAX 772-4709
www.exeternh.gov

October 18, 2023

Sharon Cuddy Somers, Esquire
Donahue, Tucker & Ciandella PLLC
16 Acadia Lane
POB 630
Exeter, New Hampshire 03833

Re: Zoning Board of Adjustment Case #23-15 – Special Exception Request
107 Ponemah Road LLC
50 Linden Street, Exeter, N. H.
Tax Map Parcel #82-11

Dear Attorney Somers:

This letter will serve as official confirmation that the Zoning Board of Adjustment, at its October 17th, 2023 meeting, voted to grant the above-captioned application for a special exception per Article 4, Section 4.2, Schedule I: Permitted Uses and Article 5, Section 5.2 to permit the conversion of an existing single-family residence and attached barn located at 50 Linden Street, into three (3) residential condominium units, as presented, subject to the following condition(s):

- the residential units shall be connected to the municipal water and sewer services;
- adequate landscaping is mutually agreed upon by the Applicant and the abutter at 52 Linden Street (Tax Map Parcel #82-12);
- the Applicant shall provide a total of seven (7) on-site parking spaces; and
- the approval of this application is contingent upon the Applicant obtaining site plan approval from the Planning Board.

Please be advised that in accordance with Article 12, Section 12.4 of the Town of Exeter Zoning Ordinance entitled “Limits of Approval” that all approvals granted by the Board of Adjustment shall only be valid for a period of three (3) years from the date such approval was granted; therefore, should substantial completion of the improvements, modifications, alterations or changes in the property not occur in this period of time, this approval will expire.

If you should have any questions, please do not hesitate to contact the Building Department office at (603) 773-6112.

Sincerely,

Robert V. Prior
Chairman
Exeter Zoning Board of Adjustment

cc: 107 Ponemah Road, LLC, property owner
Henry H. Boyd, Jr., LLS, Millennium Engineering, Inc.
Douglas Eastman, Building Inspector/Code Enforcement Officer
Janet Whitten, Town Assessor

RVP: bsm

Town of Exeter
Zoning Board of Adjustment
October 17, 2023, 7 PM
Town Offices Nowak Room
Final Minutes

1
2
3
4
5
6
7 **I. Preliminaries**

8 **Members Present:** Chair Robert Prior, Vice-Chair Esther Olson-Murphy, Joanne Petito -
9 Alternate, Martha Pennell - Alternate, and Laura Montagno - Alternate.
10 Town Code Enforcement Officer Doug Eastman was also present.

11
12 **Members Absent:** Clerk Theresa Page, Laura Davies

13
14 **Call to Order:** Chair Robert Prior called the meeting to order at 7 PM.

15
16 **I. New Business**

- 17 A. The application of 81 Front Street, LLC for a variance from Article 4, Section 4.2
18 Schedule I and Section 4.3, Schedule II to permit multi-family use in the R-2
19 zoning district where only single family and duplex structure are permitted; and a
20 lot area per dwelling unit of 9,801 square feet where 12,000 square feet is
21 required. The subject property is located at 81 Front Street, in the R2, Single
22 Family Residential zoning district. Tax Map Parcel #72-195. ZBA Case #23-14.

23
24 Mr. Prior said the Board received a letter from Attorney Sharon Somers
25 requesting a continuance of this case until the Board's November meeting, in
26 order to allow the Board time to have a site walk

27 Ms. Petito made a motion to continue the hearing of 81 Front Street based on the letter
28 from the applicant received in the office today. Ms. Olson-Murphy seconded. The motion
29 passed 5-0.

30
31 Mr. Prior asked the Board to schedule a walkthrough of the property. If
32 more than three members of the Board are together, that constitutes a legal
33 meeting, so none of us can talk amongst ourselves during the walkthrough. If any
34 members of the public attempt to engage us in conversation, we must say "I'm
35 sorry, the law prohibits us from talking to you."

36 Attorney Somers, who was present, suggested having the sitewalk on the
37 night of the scheduled hearing [November 21]. Mr. Prior suggested meeting at 5
38 PM. Ms. Montagno said she would prefer to see the property in the daylight. Mr.
39 Prior suggested November 21 at 3 PM. He said abutters and members of the
40 public are welcome to attend as well.
41
42
43

44 B. The application of Douglas W. Johnson and Linda R. Comerci for a special
45 exception per Article 4, Section 4.2, Schedule I: Permitted Uses and Article 5,
46 Section 5.2 to permit the conversion of an existing detached garage into a
47 residential unit. The subject property is located at 10 Highland Street, in the R-2,
48 Single Family Residential zoning district. Tax Map Parcel #65-142. ZBA Case
49 #23-13.

50
51 Mr. Johnson, the owner of 10 Highland Street, was present to discuss the
52 application. The property dates back to 1899 and the barn structure likely dates
53 from the 1940s. The overall plan is to renovate and convert the barn with a living
54 unit so that he and his wife can move back to Exeter from Alaska. The barn
55 structure is in poor condition. It would have a 1,100-1,200 square foot living area
56 loft over a vehicle garage. They will stay within the footprint of the existing
57 foundation.

58 Mr. Prior said the residential use was granted to the previous owners, but
59 they allowed it to expire. Mr. Johnson said the owner was granted a permit to put
60 four units in. They were talking about demolishing the barn and structure. What
61 they did was convert the farmhouse structure into a two-unit duplex. Two houses
62 in the back were subdivided off, so we have roughly ½ acre left in the front. We
63 haven't decided whether to keep the house as a two-family or make it back into a
64 single family.

65 Mr. Prior said four units were approved in March 2017, with two in the
66 back and two in the front. Mr. Johnson said no, the two in the back were
67 subdivided off. Mr. Eastman said the two subdivided homes are not relevant to
68 this case and are separate from the four units that were approved.

69 Mr. Johnson said there will be two units in the house and one in the barn.
70 Ms. Petito said they are requesting relief here just for the barn, to create one unit.

71 Mr. Prior asked if he's not planning on changing the footprint of the
72 structure. Mr. Johnson said that's correct, the barn is 40' x 26' and we are staying
73 in that foundation. The roof will be higher, likely around 28 feet. We don't want
74 the barn structure to overwhelm what's already there. We would go with a
75 minimal roof, probably queen post construction, to keep the existing pitch. There
76 will be a vaulted living area on the first floor in the west end, which would connect
77 up to a loft above the east side. The east side of the first floor would be the
78 garage.

79 Mr. Prior said there is no change in lot coverage, this is just the
80 conversion of the existing structure into a residential unit.

81 Mr. Prior asked for public comment, but there was none. Mr. Prior brought
82 the discussion to the Board.

83 Mr. Prior said the case seems straightforward, especially given the
84 approval granted in 2017.

85
86 Ms. Montagno made a motion to approve the application submitted by the applicants
87 Douglas Johnson and Linda Comerci for a special exception per Article 4, Section 4.2,

88 Schedule I: Permitted Uses and Article 5, Section 5.2 to permit the conversion of an
89 existing detached garage into a residential unit. Ms. Olson-Murphy seconded. Ms. Petito,
90 Mr. Prior, Ms. Olson-Murphy, Ms. Pennell, and Ms. Montagno voted aye. The motion
91 passed 5-0.

- 92
93 C. The application of 107 Ponemah Road, LLC for a special exception per Article 4,
94 Section 4.2, Schedule I: Permitted Uses and Article 5, Section 5.2 to permit the
95 conversion of an existing single family residence and attached barn into three (3)
96 residential condominium units. The subject property is located at 50 Linden
97 Street, in the R-2, Single Family Residential zoning district. Tax Map Parcel # 82-
98 11. ZBA Case #23-15.

99
100 Attorney Sharon Somers of Donohue Tucker and Ciandella, Henry Boyd
101 of Millennium Engineering, and applicant Gal Peretz were present to discuss the
102 application.

103 Attorney Somers said they are looking to convert the existing single-
104 family and barn into a three-family unit. The structure will be in the same footprint
105 as it is currently located.

106 Mr. Boyd discussed the site plans. The existing structure is less than four
107 feet from the westerly property line, so we are looking to make that more
108 conforming by shortening the building. There are two existing curb cuts, which
109 will both be maintained. There are some topography challenges on the site, with
110 a stone retaining wall and a walkout in the back. The driveway will be paved with
111 pervious pavers. We recut the existing paved driveway to provide parking, with
112 two spaces in the front and four spaces in the back. This will be two stories; we
113 designed a deck so that it would comply with the building setback. We will leave
114 the natural grade in the back and have pervious pavers, so there will be a slight
115 reduction in impervious surface: we will go from an open space of 71.6% to
116 71.8%. The building will be made smaller by taking the 38.5' depth and cutting
117 five feet off of it.

118 Mr. Prior asked if the entrance for one of the units will be off of the right-
119 hand side and the other two from the left-hand side on Linden Street. Mr. Boyd
120 said for the house building, with one unit, there are multiple access points. The
121 other two units will be housed within the new barn structure. Mr. Prior asked if the
122 house would only have one unit, and Mr. Boyd said that's correct.

123 Ms. Pennell asked if this property is on town sewer. Mr. Boyd said no, but
124 there is an existing sewer manhole nearby and the abutter to the east is already
125 tied in. There are discussions about an easement where there would be a new
126 sewer pipe for all three units tied into that manhole. Mr. Prior asked about town
127 water. Mr. Boyd said yes, they're on town water. Ms. Montagno asked if tying into
128 the town sewer is a given or still in discussion. Attorney Somers said because
129 this will have three units, we will need to go to the Planning Board for site review.
130 It's premature to talk about this. If the Board wishes to make a condition of

131 approval that we have town sewer, that's fine. Ms. Montagno asked if the existing
132 house is on a septic, and Attorney Somers said yes.

133 Ms. Montagno asked how many bedrooms would be in each unit in the
134 new building. Attorney Somers said two bedrooms in each unit. Mr. Prior said
135 that's a hard upper bound, because that affects parking.

136 Ms. Olson-Murphy said there are three units and six parking spaces.
137 Where's the guest parking? Mr. Boyd said he didn't think guest parking was
138 required. Ms. Montagno said that multifamily requires guest parking based on the
139 total number of units, with one additional space for guest parking for each four
140 units; that includes one space for up to four. Mr. Boyd said we don't show one in
141 the plan, but we could accommodate it. Mr. Prior asked if the house unit would
142 only have two bedrooms. Ms. Olson-Murphy said the plan shows 3-4. Mr. Boyd
143 said he doesn't know much about the inside of that building. Ms. Montagno said
144 it's two spaces required for each unit with 2+ bedrooms, regardless of whether
145 it's three or four. Mr. Prior said 7 spaces are required. Mr. Boyd said they can do
146 that.

147 Attorney Somers said the property is located on 3.5 acres. The single
148 family contains 2,430 square feet with four bedrooms. It was built in 1840 and
149 has been used as a residence since that time.

150 Attorney Somers went through the special exception criteria. A) The use
151 is a permitted special exception as set forth in Article 4.2, Schedule I; yes, it is
152 permitted. B) That the use is so designed, located and proposed to be operated
153 that the public health, safety, welfare, and convenience would be protected; yes,
154 we intend to demolish the attached barn and construct within essentially the
155 same footprint. We're going to increase the conformity of the property by pulling
156 the side of the barn back to follow the setback. There is adequate space to
157 accommodate the two dwelling units that will be in the new barn. The property is
158 on municipal water and we plan to extend municipal sewer to the property, as
159 well as enable the property to the west of ours to tie into the municipal sewers,
160 which will have public health benefits. There is adequate space on-site for the
161 vehicles for the units and for one guest parking space. C) That the proposed use
162 will be compatible with the zone district and adjoining post-1972 development
163 where it is to be located; yes, the property is zoned for residential use. It has
164 single-family use by right and this use by special exception. The proposed use of
165 this property is going to remain residential in character and therefore is
166 compatible. D) That adequate landscaping and screening are provided; this
167 would go to site review, but we've had discussions with the property owner of the
168 property on the westerly side as to the kind of screening or landscaping that they
169 might like to see. That will be ultimately worked out by mutual agreement. On the
170 easterly side, there's a fence acting as a screen between properties. Mr. Prior
171 asked if that fence is owned by the applicant's property, and Attorney Somers
172 said no, it's owned by the abutter. E) That adequate off-street parking and
173 loading is provided and ingress and egress is so designed as to cause minimum
174 interference with traffic; yes, we've addressed that. F) The use conforms with all

175 applicable regulations covering the district; yes, and we're also taking the non-
176 conformity of the setback and making it a little more conforming. G) The applicant
177 may be required to obtain Planning Board or Town Planning approval; yes, this
178 will go to site review. H) That the use shall not adversely affect abutting or nearby
179 property values; yes, it is not going to adversely affect the nearby or abutting
180 properties. I) and J) do not apply.

181 Attorney Somers went through the additional criteria for conversions. The
182 minimum lot size for each unit is going to have to be 4,500 square feet; yes, the
183 lot size is 15,246 square feet, so we meet this standard. The structure has been
184 a residence for 10 years. Relative to open space, because this is contemplated
185 to have municipal sewer, we've calculated the open space at 40% or 6,099
186 square feet of open space, and we have 11,621 square feet of open space, so
187 we exceed the minimum. We intend to have this conversion form a condominium,
188 so these will not be rental units, they will be for sale. We are not seeking an
189 expansion of the existing structure. This is going to be on municipal sewer, so
190 there's no need to get into septic facilities.

191 Mr. Prior said the application says six parking spaces. Is it acceptable that
192 the approval states there must be seven? Attorney Somers said yes.

193 Ms. Olson-Murphy asked if the new footprint is smaller than the current
194 one, and Attorney Somers said that's correct.

195 Mr. Prior asked for public comment.

196 Theresa Page of 46 Linden Street, an abutter and a member of the ZBA
197 who had recused herself from voting and discussion, gave public comment. She
198 and her husband purchased the property next to the applicant's home in 2022.
199 We expected the applicant's property to be a residential use. It's a larger home
200 that lends itself to being a multi-unit, so we're not opposed to the general idea. At
201 first it was vacant, then it had an Air BnB/short term rental for up to 12 people,
202 which was challenging. This is a small, three-house neighborhood. After that it
203 was a boarding house for a dozen workers, which had an increased number of
204 cars and traffic. The spillage over was difficult to manage. When we initially
205 moved in, we had no plans to add fencing, but it became a situation where we
206 did it at our own expense. We're located next to the Y, the Seacoast Schools,
207 and the parking lot, so it's busier than we expected. Kids walk across our
208 neighborhood, and buses come from the other side. With the increased use next
209 door, the traffic has been comical at times. Having a turnaround on the
210 applicant's property will help with some of that, but if we're adding more cars and
211 people, it's challenging. Sound and traffic are a concern. It's important that it
212 goes to Planning Board approval. This Board has the option of deferring approval
213 until the Planning Board approves it. Traffic around the entire area should be
214 considered. If it's going to be condos sold separately, she'd like it to be a
215 condition that it doesn't change what the permissible use is. She would also like
216 to see the sewer being made a requirement.

217 Mr. Prior asked if her home is currently on sewer. Ms. Page said yes. Mr.
218 Prior asked about the current use of the property. Ms. Page said it's rented to a
219 couple with a handful of dogs and it's lovely. It's single-family use now.

220 Lucas Elsasser of 46 Linden Street, Ms. Page's husband, said in the
221 application described moving from one to three units as a "slight intensification,"
222 and that's a mischaracterization. It sounds like it will be two bedrooms per
223 additional unit rather than four, which is comforting, but it's still 8-10 people on
224 the property and going from two cars to eight. The square footage in the
225 application said the lot size is 15,246 square feet but the site plan says 14,594
226 square feet, a discrepancy of 652. The impervious surface is 3,625 square feet,
227 but in the site plan is 4,139 square feet, a difference of 500+ square feet. Is there
228 a setback requirement for new construction, specifically between 50 and 52
229 Linden Street? Does the square footage include the decks or the new driveways?
230 Would it exceed that 60/40 ratio between open and impervious surface? Would
231 the pervious pavers be considered open space? There are two mature trees in
232 the area they'll have to take down. It may not affect our property values, but
233 adding decks on the back side dramatically changes the character of the property
234 and means less privacy for us. The new structure will be taller than the existing
235 barn and there will be much less green space.

236 Ms. Page said the pavers cover more area than is needed to turn around
237 and come right up to the fence on our side. We've had issues with headlights.
238 She's worried that it will encourage parking along the fence. If that could remain
239 green space, that would prevent the problem.

240 Mr. Prior asked Mr. Eastman if the previous uses of the property which
241 the abutters described were legal uses. Mr. Eastman said no, and he took action.
242 The owner acquiesced and moved the boarders out around July. He gave them a
243 deadline and they moved. Now the house is being rented as a single family
244 home, so there are no violations at this point.

245 Mr. Boyd said regarding the parking, these pervious pavers are
246 expensive, and they do work to help with groundwater recharge. The paved area
247 is large to accommodate the parking the town requires as well as prevent
248 residents from having to back all the way out into the street. He doesn't think
249 there's enough room between the edge of the paver and the abutter's fence for
250 people to park. We could eliminate some of the pavers with a product called
251 "GrassPave" to get back some green space. We can work out screening with the
252 abutter. He added that he doesn't know why the numbers in the application vary
253 from the survey.

254 Mr. Prior said the Board didn't get a site plan tax map. It's hard to see the
255 location of the abutting homes. Mr. Boyd said we show the abutters' homes on
256 the map, but it wasn't in the packet. It's not detailed but it shows the locations.
257 Attorney Somers presented the Board with the original application from 2022 that
258 includes the tax map. Mr. Prior reviewed it and said it looks like all of the houses
259 sit towards the front of their lots.

260 Attorney Somers said we did run into some zoning violations, but that is
261 now history. The property is being properly used. The Board can move forward
262 and decide if we meet the criteria. Traffic is not the purview of this Board, and it
263 will be studied extensively in the site review. We explained the amount of open
264 space and the presence of the pavers. Those kinds of things will be taken care of
265 with the Planning Board. Regarding the presence of the deck and removal of
266 trees, if this property were to remain as a single-family home and the owner
267 decided to renovate the barn into more bedrooms with a deck, they could do that
268 by right. That's not a basis for this Board to find that the criteria are not met. The
269 setback being improved upon is a plus. The exterior of the main building is not
270 being changed and will help to maintain the essential character of the building
271 and neighborhood. Ms. Petito asked about the discrepancies in the numbers
272 between the application and site plan. Attorney Somers said even with the
273 discrepancies, we exceed the minimums for open space etc.

274 Ms. Petito went through the special exception criteria. A) The use is a
275 permitted special exception as set forth in Article 4.2, Schedule I; yes. B) That
276 the use is so designed, located and proposed to be operated that the public
277 health, safety, welfare, and convenience would be protected; yes, it appears to
278 be. Ms. Montagno said there's a concern with traffic. Ms. Pennell said there's no
279 space for saving snow if they have to plow. Several parking spaces could be
280 consumed by snow piles. Mr. Prior said that's something for technical review, it's
281 not a stated concern in the ordinance. Ms. Montagno said regarding the footprint,
282 even though they're making one side less of an incursion, there's a deck that's
283 added on to the back. Does that not get counted as the footprint from a setback
284 perspective? Mr. Eastman said the deck would have to meet the setback. Ms.
285 Olson-Murphy said it does on the plan. Ms. Olson-Murphy asked if them
286 completely tearing down the building and rebuilding makes it a new structure that
287 has to conform to the setback. Mr. Prior said they are allowed to build a new
288 structure on the existing footprint, and they're using less than the footprint. C)
289 That the proposed use will be compatible with the zone district and adjoining
290 post-1972 development where it is to be located; Mr. Prior said yes, it is
291 residential. Ms. Petito said it seems to be compatible with the zoned district. D)
292 That adequate landscaping and screening are provided; we haven't heard about
293 screening or landscaping. Ms. Olson-Murphy said they've come up with some
294 ideas. Mr. Prior said the application states that it intends to provide screening on
295 the westerly side of the property as mutually agreed by the applicant and the
296 owner of 52 Linden Street. One can infer that if there is no mutual agreement,
297 this application would be invalid. We could make that a condition of approval. Ms.
298 Montagno asked why the property on the other side isn't addressed. Mr. Prior
299 said the property owner on the other side at 46 Linden already paid for a fence
300 which they are responsible for. Ms. Montagno said they expressed a concern
301 even with that fence about lights. Mr. Prior said the owner of the property has the
302 right to put lights on the property. Where we have some leverage is to make a
303 requirement that there be adequate landscaping between 50 and 52, where it's

304 closer to that structure. Ms. Petito continued with the criteria. E) That adequate
305 off-street parking and loading is provided and ingress and egress is so designed
306 as to cause minimum interference with traffic on abutting streets; yes, we heard
307 about the parking, there are four spots in the back, two in the front, and they're
308 adding one on the side. Mr. Prior said the application states six, so the approval
309 will have to state that there will be seven. We also heard from an abutter that
310 ingress, egress, and parking has been an issue in the past, but that's for
311 technical review. F) That the use conforms with all applicable regulations
312 governing the district where located; it's already non-conforming in the setbacks.
313 Mr. Prior said he thinks we're fine with that. G) The applicant may be required to
314 obtain Planning Board or Town Planning approval; yes, we did have an abutter
315 who requested that. Mr. Prior said yes, we will make any approval dependent on
316 site plan approval from the Planning Board. H) That the use shall not adversely
317 affect abutting or nearby property values; we haven't heard that it does. I) and J)
318 do not apply.

319 Ms. Petito went through the additional criteria for conversions: A) The
320 number of spaces for off-street parking shall comply with Article 5.6, offstreet
321 parking; yes, we went through that. B) The minimum lot size required for each
322 unit requires 30% of the minimum lot size per unit; yes, we went through that.
323 There was some discrepancy with the square footage but it appears it would still
324 meet that. Mr. Prior said 4,500 is required. Even at the lower numbers presented
325 it's still ok. C) The structure has been a residence for 10 years; yes, it has. D)
326 The lot must meet a minimum of 20% open space; she believes it does. E) Does
327 not apply as these will not be rental units. Each unit will be sold. F) May require
328 the site plan to have Planning Board approval; yes, all conversions of three or
329 more units must be reviewed. G) The Board may allow expansion to an existing
330 structure for the purpose of providing additional area for the units, providing all
331 other requirements are met; there is no expansion. H) Prior to any renovations or
332 building, the applicant shall provide evidence to the Building Inspector that septic
333 system is adequate for the units; this does not apply, as it will be on town sewer.
334 That can be a condition of approval.

335 Mr. Prior asked if there was any further discussion from the Board. Ms.
336 Montagno asked what the options are: either approve with conditions or defer
337 until after Planning? Mr. Prior said we can say an approval is dependent on not
338 just site plan review but on site plan approval. Ms. Olson-Murphy said we can
339 make it a condition of approval but we can't wait for them to approve it.

340
341 Ms. Petito made a motion to approve the application of 107 Ponemah Road for a
342 special exception per Article 4, Section 4.2, Schedule I: Permitted Uses and
343 Article 5, Section 5.2 to permit the conversion of an existing single family
344 residence and attached barn into three (3) residential condominium units, subject
345 to the following conditions: 1) the units must be connected to existing municipal
346 water and sewer supply systems; 2) adequate landscaping as mutually agreed
347 upon by the applicant and the residents at 52 Linden Street be put in place; 3)

348 the applicant will add one parking space in addition to what is stated in the
349 application, for a total of 7 parking spaces; and 4) that the approval of this
350 application is dependent on site plan approval by the Planning Board. Ms.
351 Pennell seconded. Ms. Petito, Mr. Prior, Ms. Olson-Murphy, and Ms. Pennell
352 voted aye. Ms. Montagno voted nay. The motion passed 4-1.

- 353
354
355
356 D. The application of Mario A. Ponte for a variance from Article 5, Section 5.6.6. to
357 permit less parking spaces than required for the residential and retail uses
358 proposed for within the existing building at 85-87 Water Street. The subject
359 property is located in the WC-Waterfront Commercial zoning district. Tax Map
360 Parcel #72-29. ZBA Case #23-16.

361
362 Applicant Mario Ponte and builder John DeStefano were present to
363 discuss the application. Mr. Ponte said this is the building that Trends is currently
364 in.

365 Ms. Petito said she wanted to disclose that she rents office space from
366 the applicant, but she doesn't think she needs to recuse herself. She is not in the
367 building under discussion

368 Mr. Ponte said we'd like to renovate the apartments on the second floor.
369 There are three apartments on the second floor, but there will be four. There is
370 one existing retail space, but we will convert it to two. There will be two more
371 apartments below the retail. We need parking relief like most of the buildings
372 downtown. He was told by the Engineer that his building owns most of the
373 alleyway, but we need additional parking spaces.

374 Mr. Prior asked Mr. Ponte to describe the existing layout. Mr. Ponte said
375 upstairs there are three apartments. There have been apartments there for 60
376 years. They're occupied, but we're not renewing their leases because we're
377 renovating. One floor below the street level, we use the space as storage for
378 Trends and the bookstore. It was apartments maybe 10 years ago.

379 Mr. Prior said there will be a net gain in the number of apartments, so a
380 net gain in the requirement for parking. The applicant said he was told 20 years
381 ago that the building was already allocated 20 parking spaces out front. Mr. Prior
382 said they're fictitious. Ms. Petito said without considering these spaces as
383 parking there would be no new development downtown. Mr. Ponte said both the
384 church converted to apartments and the loka got parking relief.

385 Mr. Prior asked if any changes to the exterior of the building are being
386 made. Mr. Ponte said yes, we're bringing it back to its original historical
387 significance, with dormered windows. It's already been approved by the HDC
388 twice.

389 Ms. Petito said she thinks the relief being sought would be for seven
390 additional spaces. Mr. Prior said they don't exist, we get that. Downtown is a mix
391 of residential and retail, and nobody has enough parking. Ms. Montagno asked if

392 the supposed spaces take into account overnight winter parking. The municipal
393 lot only has 18 dedicated spaces for overnight parking. Ms. Petito said this is
394 similar to the renovation of the Ioka building, which was recently approved. Mr.
395 Prior said solving parking is not within the ZBA's purview. Ms. Montagno said it is
396 within our purview to approve or deny a variance from the parking regulations in
397 our zoning.

398 Mr. Prior asked for public comment, but there was none.

399 Barry Pastor of Front Street said parking downtown is a problem for
400 everybody. The parking ban in place during the winter may not make a difference
401 to the businesses, but people living there need a place to park overnight. Mr.
402 Prior said he shares his skepticism that anyone would want to buy a
403 condominium unit that doesn't come with parking, but it's not the business of this
404 Board to question the business plan of anyone who comes before us.

405 Mr. Prior closed the public session and went into Board deliberations. He
406 said these parking spaces are fictitious to some extent, but where can we draw
407 the line to say this building can have them and this one can't? He doesn't believe
408 that this Board can draw such a line. It's up to the town to address the shortage
409 of parking that exists.

410 Ms. Olson-Murphy made a motion to approve the application of Mario A. Ponte for a
411 variance from Article 5, Section 5.6.6. to permit less parking spaces than required for the
412 residential and retail uses proposed for within the existing building at 85-87 Water Street.
413 Ms. Pennell seconded. Ms. Petito, Mr. Prior, Ms. Olson-Murphy, and Ms. Pennell voted
414 aye. Ms. Montagno voted nay. The motion passed 4-1.

415
416
417 **II. Other Business**

418 A. Request for Rehearing: Aaron Jefferson – 165 A Kingston Road, Tax Map Parcel
419 #115-12, ZBA Case #23-12

420 Mr. Prior said this is strictly a discussion within the Board, and doesn't get
421 public input. The criteria for rehearing is that A) there is new evidence that was
422 not available at the time of the application, which is not the case; or B) The Board
423 determines that an error has been made in its decision, which the applicant
424 believes. Our decision was unanimously to deny the application, and there were
425 four separate criteria that we determined that the application did not meet, criteria
426 1, 2, 3, and 5.

427 Ms. Petito said she wasn't present at the previous meeting, but she read
428 the minutes and didn't see any error. The concerns raised by abutters were very
429 carefully considered by the Board. The Board came to a reasoned decision. She
430 went out to look at the site, and it's right in the middle of residences, so she
431 understands the concerns.

432 Mr. Prior said given that their denial was unanimous, he doubts the
433 applicant would have much of a chance in Superior Court.

434 Mr. Prior said that Ms. Montagno, Ms. Pennell, and Mr. Prior were the
435 members present at the prior meeting who are here tonight. It was a long

436 discussion with a lot of public testimony and back-and-forth, but we did a good
437 job of rendering a decision taking into account the applicant, the abutters, and
438 the interests of the town.

439 Ms. Montagno made a motion to deny the request to rehear the variance application for
440 the property at 165-A Kingston Road. Ms. Petito seconded. Ms. Petito, Mr. Prior, Ms.
441 Olson-Murphy, Ms. Pennell, and Ms. Montagno voted aye. The motion passed 5-0.

442
443 B. Approval of Minutes: August 15, 2023
444

445 Ms. Montagno made a motion to approve the minutes of August 15, 2023 as submitted.
446 Ms. Pennell seconded. Ms. Montagno, Ms. Pennell, and Mr. Prior voted aye and the
447 motion passed 3-0.

448
449 **III. Adjournment**
450

451 Mr. Prior made a motion to adjourn. Ms. Olson-Murphy seconded. Ms. Petito, Mr. Prior,
452 Ms. Olson-Murphy, and Ms. Pennell, and Ms. Montagno voted aye. The motion passed
453 5-0. The meeting was adjourned at 9 PM.

454
455 Respectfully Submitted,
456 Joanna Bartell
457 Recording Secretary
458
459



TOWN OF EXETER

Planning and Building Department

10 FRONT STREET • EXETER, NH • 03833-3792 • (603) 778-0591 • FAX 772-4709

www.exeternh.gov

Date: August 14, 2024
To: Planning Board
From: Dave Sharples, Town Planner
Re: Patrick Houghton - 46 Main Street PB Case #24-12

The Applicant is seeking a multi-family site plan review for the proposed redevelopment of the property at 46 Main Street. The Applicant is proposing to demolish the existing service station on the site and construct two (2) new residential duplexes (total of 4 units) along with associated parking and site improvements. The subject property is located in the R-2, Single Family Residential zoning district and is identified as Tax Map Parcel #63-1.

Attached please find an application, plans and supporting documents, dated 7/9/24 for your review.

The Applicant has obtained three (3) variances from Zoning Board of Adjustment for the project; one to permit the "multi-family" use, the second one for relief from the minimum front yard setback requirement, and the third to exceed the density requirements in the R-2 zoning district. Copies of the decision letters and minutes from the November 21st, 2023 and February 20th, 2024 ZBA meetings are included with the supporting documents.

The plans were reviewed by the Technical Review Committee (TRC) and Underwood Engineers (UEI) on August 1st, 2024. Comments from Town departments were acknowledged by the Applicant at the meeting; a TRC comment letter was not provided due to the limited numbers of comments. A copy of the UEI comment letter, dated 8/5/24 is enclosed for your review. The Applicant has submitted revised plans and supporting documents, dated 8/13/24, which address the review comments received, and are enclosed for your review. Staff is still in the process of reviewing these materials, and I will update the Board with my review of the revised plans at the meeting.

The Applicant is requesting two waivers from the Board's Site Plan Review and Subdivision regulations; relief from the requirement to provide High Intensity Soils Survey information and from Section 9.3.2.7. Stormwater Management for Redevelopment standards.

I will be prepared with suggested conditions of approval at the meeting in the event the board decides to act on the request.

Waiver Motions:

High Intensity Soils Survey (HISS) waiver motion: After reviewing the criteria for granting waivers, I move that the request of Patrick Houghton (PB Case #24-12) for a waiver from Section

7.5.4 of the Site Plan Review and Subdivision Regulations to provide High Intensity Soil Survey information on the **Proposed Site Plan** be APPROVED / APPROVED WITH THE FOLLOWING CONDITIONS / TABLED / DENIED.

Stormwater Management for Redevelopment Standards waiver motion: After reviewing the criteria for granting waivers, I move that the request of Patrick Houghton (PB Case #24-12) for a waiver from Section 9.3.2.7 of the Site Plan Review and Subdivision Regulations regarding stormwater management requirements for redevelopment be APPROVED / APPROVED WITH THE FOLLOWING CONDITIONS / TABLED / DENIED.

Planning Board Motions:

Multi-Family Site Plan Motion: I move that the request of Patrick Houghton (PB Case #24-12) for Multi-Family Site Plan approval be APPROVED / APPROVED WITH THE FOLLOWING CONDITIONS / TABLED / DENIED.

Thank You.

Enclosures



TOWN OF EXETER, NH APPLICATION FOR SITE PLAN REVIEW

OFFICE USE ONLY

THIS IS AN APPLICATION FOR:

- COMMERCIAL SITE PLAN REVIEW
- INDUSTRIAL SITE PLAN REVIEW
- MULTI-FAMILY SITE PLAN REVIEW
- MINOR SITE PLAN REVIEW
- INSTITUTIONAL/NON-PROFIT SPR

_____	APPLICATION #
_____	DATE RECEIVED
_____	APPLICATION FEE
_____	PLAN REVIEW FEE
_____	ABUTTERS FEE
_____	LEGAL NOTICE FEE
_____	TOTAL FEES

_____	INSPECTION FEE
_____	INSPECTION COST
_____	REFUND (IF ANY)

1. NAME OF LEGAL OWNER OF RECORD: Jin Esther

_____ TELEPHONE: () _____

ADDRESS: 2 Twin Pond Circle, Exeter, NH 03833

2. NAME OF APPLICANT: Patrick Houghton

ADDRESS: 210 Ledgewood Rd., Manchester, NH 03104

_____ TELEPHONE: (603) 566-2000 _____

3. RELATIONSHIP OF APPLICANT TO PROPERTY IF OTHER THAN OWNER: _____

Purchase and sale permission

(Written permission from Owner is required, please attach.)

4. DESCRIPTION OF PROPERTY: Existing Auto Repair Garage

ADDRESS: 46 Main Street, Exeter, NH 03833

TAX MAP: 63 PARCEL #: 1 ZONING DISTRICT: R-2

AREA OF ENTIRE TRACT: 0.60 acre PORTION BEING DEVELOPED: 0.27 acre



5. ESTIMATED TOTAL SITE DEVELOPMENT COST \$ _____

6. EXPLANATION OF PROPOSAL: 4-Unit Residential Development

7. ARE MUNICIPAL SERVICES AVAILABLE? (YES/NO) Yes

If yes, Water and Sewer Superintendent must grant written approval for connection.
If no, septic system must comply with W.S.P.C.C. requirements.

8. LIST ALL MAPS, PLANS AND OTHER ACCOMPANYING MATERIAL SUBMITTED WITH THIS APPLICATION:

<u>ITEM:</u>	<u>NUMBER OF COPIES</u>
A. <u>Site Plans</u>	
B. <u>Architectural Elevations and Floor Plans</u>	
C. <u>Stormwater Management Plan</u>	<u>2</u>
D. <u>ZBA Case #24-1 Variance Request Letter</u>	<u>1</u>
E. <u>ZBA Case #23-17 Variance Request Letter</u>	<u>1</u>
F. <u>Waiver Request Letter</u>	<u>1</u>

9. ANY DEED RESTRICTIONS AND COVENANTS THAT APPLY OR ARE CONTEMPLATED (YES/NO) No IF YES, ATTACH COPY.

10. NAME AND PROFESSION OF PERSON DESIGNING PLAN:

NAME: Erin R. Lambert, P.E.

ADDRESS: 2 Home Avenue, Concord, NH 03301

PROFESSION: Civil Engineer TELEPHONE: (603) 369-4190 x527

11. LIST ALL IMPROVEMENTS AND UTILITIES TO BE INSTALLED:

The project proposes new municipal water, sanitary sewer, and stormwater connections as well as a new gas service line, utility pole and underground electric and telecommunication services.



12. HAVE ANY SPECIAL EXCEPTIONS OR VARIANCES BEEN GRANTED BY THE ZONING BOARD OF ADJUSTMENT TO THIS PROPERTY PREVIOUSLY?

IF YES, DESCRIBE BELOW. (Please check with the Planning Department Office to verify)

On 11/27/2023, ZBA granted variance from Article 4, Section 4.2 Schedule I Permitted Uses to allow multi-family units, and variance from Article 4, Section 4.3 Schedule II: Density & Dimensional Regulations for relief from minimum yard setback requirement.

On 2/21/2024, ZBA approved variance from Article 4, Section 4.3 II to exceed the density requirement to permit four (4) units on a 26,000 SF lot. Determination letters are attached.

13. WILL THE PROPOSED PROJECT INVOLVE DEMOLITION OF ANY EXISTING BUILDINGS OR APPURTENANCES? IF YES, DESCRIBE BELOW.

(Please note that any proposed demolition may require review by the Exeter Heritage Commission in accordance with Article 5, Section 5.3.5 of the Exeter Zoning Ordinance).

The existing service station building will be demolished, along with the existing concrete pad, pavement, fence and walkway. The storage container will be removed from the site.

14. WILL THE PROPOSED PROJECT REQUIRE A “NOTICE OF INTENT TO EXCAVATE” (State of NH Form PA-38)? IF YES, DESCRIBE BELOW.

No

NOTICE: I CERTIFY THAT THIS APPLICATION AND THE ACCOMPANYING PLANS AND SUPPORTING INFORMATION HAVE BEEN PREPARED IN CONFORMANCE WITH ALL APPLICABLE REGULATIONS; INCLUDING BUT NOT LIMITED TO THE “SITE PLAN REVIEW AND SUBDIVISION REGULATIONS” AND THE ZONING ORDINANCE. FURTHERMORE, IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 15.2 OF THE “SITE PLAN REVIEW AND SUBDIVISION REGULATIONS”, I AGREE TO PAY ALL COSTS ASSOCIATED WITH THE REVIEW OF THIS APPLICATION.

DATE _____ OWNER’S SIGNATURE _____

ACCORDING TO RSA 676.4.I (c), THE PLANNING BOARD MUST DETERMINE WHETHER THE APPLICATION IS COMPLETE WITHIN 30 DAYS OF SUBMISSION. THE PLANNING BOARD MUST ACT TO APPROVE, CONDITIONALLY APPROVE, OR DENY AN APPLICATION WITHIN SIXTY FIVE (65) DAYS OF ITS ACCEPTANCE BY THE BOARD AS A COMPLETE APPLICATION. A SEPARATE FORM ALLOWING AN EXTENSION OR WAIVER TO THIS REQUIREMENT MAY BE SUBMITTED BY THE APPLICANT.



ABUTTERS: PLEASE LIST ALL PERSONS WHOSE PROPERTY IS LOCATED IN NEW HAMPSHIRE AND ADJOINS OR IS DIRECTLY ACROSS THE STREET OR STREAM FROM THE LAND UNDER CONSIDERATION BY THE BOARD. THIS LIST SHALL BE COMPILED FROM THE EXETER TAX ASSESSOR'S RECORDS.

TAX MAP 63-2
NAME Beth. P. Griffin Rev. Trust
ADDRESS 60 Main Street, Exeter, NH 03833

TAXMAP 73-304
NAME David S. Essensa
ADDRESS 44 Main Street, Exeter, NH 03833

TAX MAP 73-305
NAME Paul Markey
ADDRESS 10 Ash Street, Exeter, NH 03833

TAX MAP 63-274
NAME 1 Cass Street LLC
ADDRESS PO Box 72, Exeter, NH 03833

TAX MAP 63-275
NAME Timothy D. Upton Rev. Trust
ADDRESS 45 Main Street, Exeter, NH 03833

TAXMAP 63-276
NAME William F. Hoyt
ADDRESS 82 Watson Road, Exeter, NH 03833

TAX MAP 63-258
NAME Kevin Blair
ADDRESS 59 Main Street, Exeter, NH 03833

TAX MAP 63-259
NAME Kevin Blair
ADDRESS 59 Main Street, Exeter, NH 03833

TAX MAP 63-260
NAME Jason Richard Goulet
ADDRESS 49 Main Street, Exeter, NH 03833

TAX MAP 72-211
NAME Phillips Exeter Academy
ADDRESS 20 Main Street, Exeter, NH 03833

TAX MAP _____
NAME _____
ADDRESS _____

TAX MAP _____
NAME _____
ADDRESS _____

TAX MAP _____
NAME _____
ADDRESS _____

TAX MAP _____
NAME _____
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TAX MAP _____
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TAX MAP _____
NAME _____
ADDRESS _____

TAX MAP _____
NAME _____
ADDRESS _____

TAX MAP _____
NAME _____
ADDRESS _____

Please attach additional sheets, if needed



SITE PLAN REQUIREMENTS

7.4 Existing Site Conditions Plan

Submission of this plan will not be applicable in all cases. The applicability of such a plan will be considered by the TRC during its review process as outlined in Section 6.5 Technical Review Committee (TRC) of these regulations. The purpose of this plan is to provide general information on the site, its existing conditions, and to provide the base data from which the site plan or subdivision will be designed. The plan shall show the following:

APPLICANT	TRC	REQUIRED EXHIBITS
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.1 Names, addresses, and telephone numbers of the owner, applicant, and person(s) or firm(s) preparing the plan.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.2 Location of the site under consideration, together with the current names and addresses of owners of record, of abutting properties and their existing land use.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.3 Title, date, north arrow, scale, and Planning Board Case Number.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.4 Tax map reference for the site under consideration, together with those of abutting properties.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.5 Zoning (including overlay) district references.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.6 A vicinity sketch or aerial photo showing the location of the land/site in relation to the surrounding public street system and other pertinent location features within a distance of 2,000-feet, or larger area if deemed necessary by the Town Planner.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.7 Natural features including watercourses and water bodies, tree lines, significant trees (20-inches or greater in diameter at breast height) and other significant vegetative cover, topographic features, and any other environmental features that are important to the site design process.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.8 Man-made features such as, but not limited to, existing roads, structures, and stone walls. The plan shall also indicate which features are to be retained and which are to be removed or altered.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.4.9 Existing contours at intervals not to exceed 2-feet with spot elevations provided when the grade is less than 5%. All datum provided shall reference the latest applicable US Coast and Geodetic Survey datum and should be noted on the plan.
<input type="checkbox"/> W	<input type="checkbox"/>	7.4.10 A High Intensity Soil Survey (HISS) of the entire site, or appropriate portion thereof. Such soil surveys shall be prepared by a certified soil scientist in accordance with the standards established by the Rockingham County Conservation District. Any cover letters or explanatory data provided by the certified soil scientist shall also be submitted.



<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>7.4.11 State and Federally designated wetlands, setback information, total wetlands proposed to be filled, other pertinent information and the following wetlands note: "The landowner is responsible for complying with all applicable local, state, and federal wetlands regulations, including any permitting and setback requirements required under these regulations."</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>7.4.12 Surveyed property lines including angles and bearings, distances, monument locations, and size of the entire parcel. A professional land surveyor licensed in New Hampshire must attest to said plan.</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>7.4.13 The lines of existing abutting streets and driveway locations within 200-feet of the site.</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>7.4.14 The location, elevation, and layout of existing catch basins and other surface drainage features.</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>7.4.15 The shape, size, height, location, and use of all existing structures on the site and approximate location of structures within 200-feet of the site.</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>7.4.16 The size and location of all existing public and private utilities, including off-site utilities to which connection is planned.</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>7.4.17 The location of all existing easements, rights-of-way, and other encumbrances.</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>7.4.18 All floodplain information, including the contours of the 100-year flood elevation, based upon the Flood Insurance Rate Map for Exeter, as prepared by the Federal Emergency Management Agency, dated May 17, 1982.</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>7.4.19 All other features which would fully explain the existing conditions of the site.</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>7.4.20 Name of the site plan or subdivision.</p>



7.5 Proposed Site Conditions Plan (Pertains to Site Plans Only)

The purpose of this plan is to illustrate and fully explain the proposed changes taking place within the site. The proposed site conditions plan shall depict the following:

APPLICANT	TRC	REQUIRED EXHIBITS
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.1 Proposed grades and topographic contours at intervals not to exceed 2-feet with spot elevations where grade is less than 5%. All datum provided shall reference the latest applicable US Coast and Geodetic Survey datum and should be noted on the plan.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.2 The location and layout of proposed drainage systems and structures including elevations for catch basins.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.3 The shape, size, height, and location of all proposed structures, including expansion of existing structures on the site and first floor elevation(s). Building elevation(s) and a rendering of the proposed structure(s).
<input type="checkbox"/>	<input type="checkbox"/>	7.5.4 High Intensity Soil Survey (HISS) information for the site, including the total area of wetlands proposed to be filled.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.5 State and Federally designated wetlands, setback information, total wetlands proposed to be filled, other pertinent information and the following wetlands note: "The landowner is responsible for complying with all applicable local, state, and federal wetlands regulations, including any permitting and setback requirements required under these regulations."
<input type="checkbox"/>	<input type="checkbox"/>	7.5.6 Location and timing patterns of proposed traffic control devices.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.7 The location, width, curbing and paving of all existing and proposed streets, street rights-of-way, easements, alleys, driveways, sidewalks and other public ways. The plan shall indicate the direction of travel for one-way streets. See Section 9.14 – Roadways, Access Points, and Fire Lanes for further guidance.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.8 The location, size and layout of off-street parking, including loading zones. The plan shall indicate the calculations used to determine the number of parking spaces required and provided. See Section 9.13 – Parking Areas for further guidance.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.9 The size and location of all proposed public and private utilities, including but not limited to: water lines, sewage disposal facilities, gas lines, power lines, telephone lines, cable lines, fire alarm connection, and other utilities.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.10 The location, type, and size of all proposed landscaping, screening, green space, and open space areas.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.11 The location and type of all site lighting, including the cone(s) of illumination to a measurement of 0.5-foot-candle.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.12 The location, size, and exterior design of all proposed signs to be located on the site.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.13 The type and location of all solid waste disposal facilities and accompanying screening.



<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.14 Location of proposed on-site snow storage.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.15 Location and description of all existing and proposed easement(s) and/or right-of-way.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.16 A note indicating that: "All water, sewer, road (including parking lot), and drainage work shall be constructed in accordance with Section 9.5 Grading, Drainage, and Erosion & Sediment Control and the Standard Specifications for Construction of Public Utilities in Exeter, New Hampshire". See Section 9.14 Roadways, Access Points, and Fire Lanes and Section 9.13 Parking Areas for exceptions.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.5.17 Signature block for Board approval

OTHER PLAN REQUIREMENTS (See Section indicated)

- 7.7 Construction plan
- 7.8 Utilities plan
- 7.9 Grading, drainage and erosion & sediment control plan
- 7.10 Landscape plan
- 7.11 Drainage Improvements and Storm Water Management Plan
- 7.12 Natural Resources Plan
- 7.13 Yield Plan

46 Main Residential Development
 46 Main Street, Exeter, NH 03833

Map	Lot	Property Owner	Mailing Address
63	1	Jin Esther	2 Twin Pond Circle Exeter, NH 03608
Abutters:			
63	2	Beth. P. Griffin Rev. Trust	60 Main Street Exeter, NH 03833
73	304	David S. Essensa	44 Main Street Exeter, NH 03833
73	305	Paul Markey	10 Ash Street Exeter, NH 03833
63	274	1 Cass Street LLC	PO Box 72 Exeter, NH 03833
63	275	Timothy D. Upton Rev. Trust	45 Main Street Exeter, NH 03833
63	276	William F. Hoyt	82 Watson Road Exeter, NH 03833
63	258	Kevin Blair	59 Main Street Exeter, NH 03833
63	259	Kevin Blair	59 Main Street Exeter, NH 03833
63	260	Jason Richard Goulet	49 Main Street Exeter, NH 03833
72	211	Phillips Exeter Academy	20 Main Street Exeter, NH 03833
Applicant		Patrick Houghton	210 Ledgewood Rd. Manchester, NH 03104
Engineer		Erin R. Lambert, PE	Wilcox & Barton, Inc. 2 Home Avenue Concord, NH 03301
Surveyor		Joseph M. Wichert	Joseph M. Wichert LLS, Inc. 802 Amherst Street Manchester, NH 03104
Landscape Architect		Romy Maurer	Terrain Planning & Design, LLC 311 Kast Hill Road Hopkinton, NH 03229
Architect		Holly Spinney	Art Form Architecture, Inc. P.O Box 535 North Hampton, NH 03862

Project Narrative

Project: 4-Unit Residential Development
Address: 46 Main Street, Exeter NH
Owner: Jin Esther
Applicant: Patrick Houghton

46 Main Street (Tax Map 63, Lot 1) encompasses 26,389-SF (0.6 acres) and falls within the R-2 single family residential district. The proposed project involves constructing four 3-story residential units in 2 buildings. Each unit will have a 2-car garage underneath and separate utilities (water, sewer, electric and natural gas). The development includes a driveway, 4 surface parking spaces, sidewalks, designated snow storage, a stormwater management system and small retaining wall in front of units 3 and 4.

The parcel currently features a fully developed site with an existing auto repair garage and a storage container. As part of this project, the existing building, pavement, concrete pad, and stone walkway will be demolished, and the storage container will be removed from the site. The area of disturbance is less than 100,000 SF therefore a New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain (AoT) permit is not required for this project.

The project received the following relief from the Exeter Zoning Board of Adjustment:

- On November 27, 2023, variances from Article 4, Section 4.2 Schedule I Permitted Uses to allow multi-family units, and from Article 4, Section 4.3 Schedule II: Density & Dimensional Regulations for relief from minimum yard setback requirement were approved.
- On February 21, 2024, a variance from Article 4, Section 4.3 II to exceed the density requirement to permit four (4) units on a 26,000 SF lot was approved.

The exterior improvements will involve utility service connections, stormwater management, and erosion control systems, highlighting a commitment to low-impact development practices through the implementation of stormwater management techniques.

Each unit will feature stairs for building access to a front porch and a new sidewalk connected to the public right-of-way. The project includes plans for a 6” white vinyl stockade fence around the property to enhance privacy.

A driveway is proposed on the northwest side to connect the property to Main Street, featuring vertical granite curbing around the pavement. The parking lot will accommodate 4 surface spaces.

The buildings will be connected to municipal water and sewer systems. A new 4” water service line with a gate valve will link to the existing system. Additionally, an 8” sewer pipe will be installed to connect with an existing sewer line. Both the water and sewer lines will tie into the municipal system located on the northeast side of the parcel, adjacent to Main Street.



Site lighting will be on the building only. Lights for parking spaces will be motion sensor activated and all fixtures will be dark-sky compliant.

Waste disposal for the property will be through a private hauler. Each garage has been designed to accommodate 2 roll-off containers: one for garbage and one for recycling.

The project aims to manage stormwater runoff from the buildings effectively by utilizing stone dripping edges to capture and treat runoff, with the objective of removing pollutants and controlling peak flows to levels lower than those of the pre-development watershed conditions. Runoff from pavements and sidewalks will be collected via drains and directed into the existing stormwater system on Main Street. See the accompanying Stormwater Management Plan for the analyzed model and tabulated data.

July 9, 2024

Town of Exeter Planning Board
10 Front Street
Exeter, NH 03833

**RE: Waiver Request for 46 Main Street Residential Development
46 Main Street, Exeter, NH**

Dear Chair and members of the Planning Board,

On behalf of Patrick Houghton and in support of the site plan application referenced above, Wilcox & Barton, Inc. hereby requests a waiver to not provide a High Intensity Soil Survey. The hydrologic soil group of the site soils has been determined based on Natural Resources Conservation Service (NRCS). This is the soil classification system which NH Department of Environmental Services relies on for stormwater designs. A test pit to will be performed on site to confirm the soil classification and depth to seasonal high ground water prior to the Technical Review Committee meeting.

If you have any questions, or require additional information, please contact me at (603) 369-4190 ext. 527.

Very truly yours,
WILCOX & BARTON, INC.



Erin R. Lambert, P.E, LEED AP
Senior Vice President

August 12, 2024

Town of Exeter Planning Board
10 Front Street
Exeter, NH 03833

**RE: Waiver Request for Major Site Plan Application
46 Main Street 4-Unit Residential Development
46 Main Street, Exeter, NH 03833**

Dear Chair and members of the Planning Board,

On behalf of Patrick Houghton and in support of the site plan application referenced above, Wilcox & Barton, Inc. hereby requests the following waiver from the Site Plan Regulations:

A waiver to Section 9.3.2.7 *Stormwater Management for Redevelopment*, which states that stormwater runoff generated from redevelopment shall not be discharged from a redevelopment site to municipal stormwater systems in volumes greater than discharged under existing conditions. The existing development does not include any stormwater controls, so runoff sheet flows through the development towards the off-site catch basins leading to the municipal stormwater system. The proposed redevelopment includes one culvert to direct overflow from the infiltration gallery to the closed municipal drainage system. The proposed overflow discharges less flow to the municipal stormwater system than what sheet flows to the system today. This is depicted through the drainage analysis as Point of Interest #1. As a result, we hereby request a waiver to allow one overflow culvert to be connected to the municipal stormwater system at Catch Basin #4.

1. *The granting of the waiver will not be detrimental to the public safety, health, or welfare or injurious to other property.*

The granting of this waiver will decrease the existing sheet flow from the development and will instead direct overflow stormwater runoff via a closed culvert to the same off-site catch basin, Catch Basin #4. The redirection and reduction of stormwater runoff will provide enhanced safety for the public by mitigating sheet flow runoff over a pedestrian sidewalk. Additionally, public health and safety is enhanced by decreasing the flow path for the runoff which therefore decreases the potential pollutants collected in the stormwater.

2. *The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property.*

The conditions of this redevelopment are unique for the property since the existing development currently does not include any stormwater controls.

3. *Because of the particular physical surroundings, shape or topographical conditions of the specific property involved, a particular hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out.*

A hardship is present to the owner that supports the inclusion of the proposed overflow culvert, since the development's existing stormwater runoff is directed to the municipal stormwater system via sheet flow and will be decreased in the post-development conditions. The proposal includes a closed pipe connection where sheet flow runoff exists today. A hardship would be provided to direct the infiltration gallery overflow in a different manner, due to the site constraints and economic feasibility of the gallery design.

4. *The granting of the waiver will not be contrary to the spirit and intent of the regulations, and*

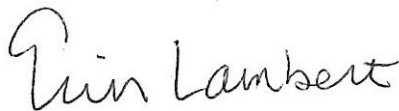
Granting the waiver will not be contrary to the spirit and intent of the regulations.

5. *The waiver will not, in any manner, vary the provisions of the Zoning Ordinance or Master Plan.*

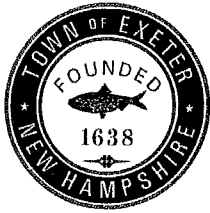
The proposed stormwater design and requested waiver will not in any manner vary the provisions of the Zoning Ordinance, or Master Plan.

If you have any questions, or require additional information, please contact me at (603) 731-9883.

Very truly yours,
WILCOX & BARTON, INC.



Erin R. Lambert, P.E, LEED AP
Senior Vice President



TOWN OF EXETER, NEW HAMPSHIRE
10 FRONT STREET • EXETER, NH • 03833-3792 • (603) 778-0591 • FAX 772-4709
www.exeternh.gov

February 21, 2024

John L. Arnold, Esquire
Orr & Reno, P.A.
45 S. Main Street
P.O. Box 3550
Concord, New Hampshire 03302-3550

Re: Zoning Board of Adjustment Case #24-1 – Variance Request
46 Main Street, Exeter, N. H.
Tax Map Parcel #63-1

Dear Attorney Arnold:

This letter will serve as official confirmation that the Zoning Board of Adjustment, at its February 20th, 2024, voted to approve your client's application for a variance from Article 4, Section 4.3 Schedule II to exceed the density requirements to permit four (4) units on a 26,000+/- square foot lot where a minimum lot size of 15,000 sq. ft. is required for each single-family dwelling and 24,000 sq. ft. is required for each duplex, as presented.

It was noted that site plan review approval by the Planning Board would be required for the proposed construction of multi-family units. As part of that review process, the Board requested that the Planning Board give particular consideration to landscape and screening issues.

Please be advised that in accordance with Article 12, Section 12.4 of the Town of Exeter Zoning Ordinance entitled "Limits of Approval" that all approvals granted by the Board of Adjustment shall only be valid for a period of three (3) years from the date such approval was granted; therefore, should substantial completion of the improvements, modifications, alterations or changes in the property not occur in this period of time, this approval will expire.

If you should have any questions, please do not hesitate to contact the Building Department office at (603) 773-6112.

Sincerely,

Robert V. Prior
Chairman
Exeter Zoning Board of Adjustment

cc: Patrick Houghton, Applicant
Douglas Eastman, Building Inspector/Code Enforcement Officer
Janet Whitten, Town Assessor
Dave Sharples, Town Planner

RVP: bsm

Town of Exeter
Zoning Board of Adjustment
February 20, 2024
7 PM
Town Offices Nowak Room
Final Minutes

1
2
3
4
5
6
7
8 **I. Preliminaries**

9 **Members Present:** Chair Robert Prior, Vice-Chair Esther Olson-Murphy, Clerk Theresa
10 Page, Kevin Baum, Laura Davies, Mark Lemos - Alternate and Laura Montagnano -
11 Alternate.

12 Town Code Enforcement Officer Doug Eastman was also present.

13
14 **Members Absent:** Martha Pennell - Alternate, Joanne Petito - Alternate

15
16 **Call to Order:** Chair Robert Prior called the meeting to order at 7 PM.

17
18 **I. New Business**

19 A. The application of Patrick Houghton for a variance from Article 4, Section 4.3
20 Schedule II to exceed the density requirements to permit four (4) units on a
21 26,000+/- square foot lot where a minimum lot size of 15,000 sq. ft. is required for
22 each single-family dwelling and 24,000 sq. ft. is required for each duplex. The
23 subject property is located at 46 Main Street, in the R-2, Single Family
24 Residential zoning district. Tax Map Parcel #63-1. ZBA Case #24-1.

25 John Arnold of Orr & Reno spoke representing the applicant, Pat
26 Houghton. Attorney Arnold said the applicant was here in November to ask for
27 three variances for 46 Main Street, currently the site of Cochecho Auto Repair.
28 The Board granted two variances, one to allow multi-family use and one to allow
29 a reduced setback, but denied a variance to allow five units. The Board
30 encouraged us to come back with a redesign with a reduced size and scale. The
31 Board must determine whether there has been a material change to reconsider
32 the application.

33 Attorney Arnold said the first change is that we've eliminated one unit; it's
34 now a four-unit development. We've reduced the depth of the buildings by 10
35 feet, from 50 feet to 40 feet. That reduces the scale of the buildings, and provides
36 adequate space in the rear of the property for snow storage and screening. Most
37 of the impervious surface is well outside of the 25-foot rear setback. With the
38 elimination of one unit, we've also eliminated one parking space. We flipped the
39 orientation of the driveway to the other side in response to concerns about the
40 proximity of the driveway to the adjacent residence and the school. Finally, we
41 had an overall reduction in building coverage from 23% to 18% of the lot, and
42 increased open space from 52% to 55%. The minimum open space for this zone
43 is 40%. These changes are dramatic. It may be appropriate for the Board to take

44 a vote that these are material and they can proceed to the merit of the
45 application.

46 Ms. Page moved to find that the present application of Patrick Houghton for a variance
47 from Article 4, Section 4.3 Schedule II to exceed the density requirements to permit four
48 units on a 26,000+/- square foot lot located at 46 Main Street, in the R-2, Single Family
49 Residential zoning district, ZBA Case #24-1, contains material changes in the proposed
50 use of the land from the prior application submitted by the same applicant for a density
51 variance to permit five units at the same location, such prior application being denied by
52 the Board on November 21, 2023, included in ZBA case #23-17, and that the present
53 application should be permitted to proceed. Ms. Olson-Murphy seconded. Mr. Prior, Ms.
54 Olson-Murphy, Ms. Theresa Page, Mr. Baum, and Ms. Davies voted aye, and the motion
55 passed 5-0.

56
57 Mr. Houghton said the applicant heard the Board's and the neighbors'
58 concerns and redesigned the site. One concern was that there was too much
59 development on the site, so we reduced the footprint by 825 square feet and
60 reduced the length of the property, pulling it further away from the neighbors. We
61 have not yet completely designed the buildings themselves. We designed it with
62 some "fudge room" on the width, and we think the actual product will be smaller
63 than shown on the plan. The neighbors' concern about snow storage will be
64 addressed by reducing the depth of the buildings. We would be willing to work
65 with the neighbors on any screening that may be needed.

66 Mr. Baum said the snow storage is labeled in the vegetated area. This will
67 go through the Planning Board, but he's trying to get a sense of how snow will be
68 plowed into that area if it's landscaped. Mr. Houghton said where the pavement
69 ends, there won't be any curb. The snow could be pushed onto the landscaping
70 area.

71 Mr. Houghton said the seller has cooperated with us and we negotiated a
72 price reduction on the property. The price is as low as the seller can absorb, so if
73 we're not successful going forward, he doesn't think the economics of developing
74 this site will work, either for his company or any other company. The seller would
75 continue to operate at that site, which is a little bit out of place. He added that this
76 development would be great for the town.

77 Attorney Arnold said at the last hearing, the Board found that the variance
78 failed based on public interest, the spirit of the ordinance, and unnecessary
79 hardship, so he will focus on those criteria. 1) The variance will not be contrary to
80 the public interest and 2) The spirit of the ordinance will be observed; the test is
81 whether the variance would affect the essential character of the locality or
82 whether it would threaten public health, safety, or welfare. The character of the
83 locality was discussed at the last hearing. This neighborhood has a number of
84 other multi-family uses. It's a mixed neighborhood. The proposal with four units
85 equates to 6,500 square feet of lot area per unit, which is a significantly lower
86 density than other multifamilies in the area, including the four nearest multi-family
87 properties. The greatest density is at 64 Main Street, which has only 1,300

88 square feet of lot per unit, down to the lowest density at 41 Main Street which has
89 3,900 square feet of lot area per unit. We're proposing 6,500 square feet per unit,
90 which is a significantly lower density than existing multi-families. There was some
91 talk at the last hearing about the nearby multifamilies being grandfathered, but
92 this criteria has to do with the character of the neighborhood. The character of
93 the neighborhood is one that includes high-density multi-family use. With respect
94 to the public safety, health and welfare, we already have a barometer for this.
95 The other multi-family properties in the neighborhood do not pose these risks.
96 This development would replace a commercial, non-conforming use. In terms of
97 traffic, the peak hour traffic counts for four units would be about half of the peak
98 hour traffic counts for the existing auto repair facility. Attorney Arnold skipped to
99 criteria 5. 5) Literal enforcement of zoning ordinance will result in an unnecessary
100 hardship; this is an unusually large property. The GIS shows that our property
101 stands out from the surrounding properties, which are significantly smaller, other
102 than the school. It's 6/10 of an acre, more than double the size of the properties
103 around it, and it's irregularly shaped, with a rear lot line that jogs around the
104 adjacent property and a curve along the road frontage. The auto repair facility is
105 a non-conforming use, which carries along with it some environmental
106 implications. This explains why this property hasn't yet been replaced by another
107 use, either a permitted single-family use or a multi-family use with a variance.
108 Because it's large and has a going concern on it, that drives up the value of the
109 property and makes it financially difficult to create a development with units that
110 are marketable. The second part of the hardship criteria is looking at whether
111 there's a substantial relationship between the general purpose of the ordinance
112 and its application to this property. The purpose of the density limitation is to try
113 and preserve the single-family character of the neighborhood, but the
114 neighborhood here is already peppered with multi-family properties with density
115 higher than what we're doing here. Denying the variance request doesn't do
116 anything to serve the purpose of the ordinance, because it's not preserving any
117 single-family nature in this neighborhood. He added that this development would
118 be a dramatic improvement for the neighborhood.

119 Ms. Davies asked if there will be a garage under each unit. Mr. Houghton
120 said yes. Ms. Davies asked about the height of the structure. Mr. Houghton said
121 we don't know yet. Attorney Arnold said the plan is to do it so it is compliant. Mr.
122 Prior said that is 35 feet. Mr. Houghton said we plan to have a low ceiling in the
123 garage, probably about seven feet. We may be able to create a downward grade
124 to get into the garage. It won't be a skyscraper-looking townhome. We think a
125 peaked roof in colonial style would fit in well with the buildings in the
126 neighborhood. Mr. Baum asked if it's two spaces per garage. Mr. Houghton said
127 it will be single-space garages with the second space for each unit on the site.

128 Mr. Baum said moving everything back is great. He's concerned about
129 the folks at 44 Main Street who are going to have headlights pointed at them, but
130 landscaping and buffering will be addressed in Planning. The issue will also be

131 addressed by the new driveway layout. The Board should think about conditions
132 for the approval.

133 Ms. Page said with the move of the driveway to the other side, are the
134 buildings toward the school side equally as close to the school as before? Mr.
135 Houghton said the buildings do get a little bit closer to the school. We changed
136 the driveway because there's some queuing for the school drop off and pickup,
137 and it either doesn't stretch to that point or does for a very short time.

138 Mr. Prior asked for public comment.

139 Bob Markey of 10 Ash Street said he would like the Board to review
140 whether this lot is a corner lot under zoning ordinance, which defines a corner lot
141 as "a lot abutting on two or more streets at their intersection or upon two parts of
142 the same street forming an interior angle of less than 135 degrees." He
143 calculates that this lot is 134 degrees. This is going to become a blind corner with
144 the building so close. Speaking of queuing, there's mornings and afternoons that
145 he can't get out of his street [Ash Street] because cars are lined up there.
146 Regarding property values, the property next to his is selling for \$1.8M.

147 Dave Essensa of 44 Main Street said we want what's best for our
148 neighborhood. We think that staying with the ordinance enacted by this Board
149 back in 1960 is the way to go. The Attorney used the term "going concern," what
150 did that mean? Mr. Prior said Attorney Arnold can address that afterwards. Mr.
151 Essensa went through the variance criteria. 1) The variance will not be contrary
152 to the public interest and 2) The spirit of the ordinance will be observed; Mr.
153 Essensa said the four units on that lot would look like a compound. The place
154 across from the Xtra Mart has nine units stuffed in there and that doesn't look like
155 our neighborhood. The application talks about the housing shortage, but there's
156 the Ray Farm development with 96 units and units going in at the end of
157 Portsmouth Ave. How do we know there's a housing shortage? 3) Substantial
158 justice is done; the Attorney said the project is not financially viable if the four
159 units are not approved, but we just talked about how much the house next door
160 went for. How much is the applicant paying for this property? How do we know if
161 they will make or lose money? The Attorney said the criteria were met the last
162 time, but we didn't take a vote. Mr. Prior said the Board did take a vote, and the
163 motion was denied under criteria 1, 2, and 5a, which means it did meet the other
164 criteria. Mr. Essensa continued. 4) The value of surrounding properties will not be
165 diminished; our neighborhood values Steve, the owner of 46 Main Street, as a
166 the neighbor, and doesn't want to lose him. It's a quiet neighborhood. After five
167 o'clock, there's no noise coming out of the property now. When you have four
168 units, there would be people coming and going and more noise. The best thing
169 would be if Steve fixed the property up. 5) Literal enforcement of zoning
170 ordinance will result in an undue hardship; there's nothing we can do about the
171 shape of the property, you still have to comply with the rules. They say the
172 property is unsuited for a single or a duplex, but aren't they asking to put in four
173 single-family homes? Mr. Prior said he's making a distinction between one or two
174 units, which are allowed, versus the four units that require the variance. Mr.

175 Essensa said there would be four rental properties. 64 and 68 aren't abutters and
176 may be in the commercial zone, so that doesn't relate to the property we're
177 talking about. The application says that the Board concluded at the November
178 hearing that the five-unit proposal was reasonable, is that correct? Mr. Prior said
179 yes.

180 Audrey Hoyt, the owner of 43 Main Street, said she thinks this proposal is
181 great. This dilapidated car garage was falling apart 10 years ago, and it's in
182 worse shape now. She's glad the driveway isn't still going into her house
183 because it's a narrow lot and there's no parking space in the back. She doesn't
184 have any complaints.

185 Ann Essensa of 44 Main Street said she's lived there for 36 years.
186 Everyone is calling her house an apartment complex, but the main house is a
187 single-family home with a wing on the back that has two tiny apartments. The
188 neighborhood has the characteristic and building styles of single-family homes,
189 even if some of them have apartments in them. That's why it's residentially
190 zoned. The units across from the Xtra Mart are commercially zoned. She's sure
191 Mr. Houghton's units will be beautiful, but there will be two buildings on one piece
192 of property with large units. Most of the other multi-family houses in the
193 neighborhoods have tiny apartments. The gas station is grandfathered in. We
194 were told that because the zoning is residential, nothing bigger can go in, but this
195 is a lot bigger. Anything that comes in will be better than what's there now, but it's
196 a residential neighborhood and four townhouse condo units will change the
197 whole look and feel.

198 Mr. Prior closed the public session and asked Attorney Arnold to address
199 issues that were raised.

200 Attorney Arnold said the driveway and traffic backup, the driveway can't
201 be any further than where we would be putting it from the school. We're
202 eliminating the wide-open curb cut with two entrances which would be an
203 improvement. The traffic will be half of what's going in and out of the existing
204 business. By "going concern," he meant there's an existing business here that
205 generates value for this property, which drives up the price of this property. If this
206 were a vacant property, the seller would have more incentive to lower the price.
207 Regarding the character of the neighborhood, the use that we're proposing is
208 dramatically more consistent than what's there today. The Board has already
209 granted a variance to allow multi-family there. The question is whether we can do
210 three units versus four units. There are older single-family homes in this
211 neighborhood that have been converted, but that's more of an aesthetic or
212 design issue and isn't relevant for the purposes of the density issue. The 44 Main
213 Street property is 2/10 of an acre with 3 units, or 3,000 square feet per unit, less
214 than half of what we're proposing.

215 Mr. Prior said the application cited four properties: 64, 68, 44, and 41
216 Main Street, are they all in the same zoning district? Attorney Arnold said he
217 cited one in the original application that was not in the same district, but we

218 pulled it out. Ms. Page said the example was 69 Main Street, which was zoned
219 commercial. Attorney Arnold said all of the other examples are R2.

220 Mr. Prior closed the public session and entered into Board deliberations.

221 Mr. Prior said we agreed that this application is significantly different
222 enough from the prior application to consider it. We moved to approve two of the
223 variance requests last time, and this is a modification strictly of the third. We said
224 that the previous application missed on three criteria: 1, 2, and 5a, which means
225 that it passed on 3, 4, and 5b.

226 Ms. Montagno said one of the members of the public brought up that the
227 lot is a corner lot and the setbacks may be different. Is that the case? Mr. Baum
228 said he's not sure it makes a difference for this application. We've already
229 granted setback relief. This is just about the density. Ms. Page said the corner lot
230 conversation was focused specifically on the setback.

231 Ms. Davies went through the variance criteria. 1) The variance will not be
232 contrary to the public interest and 2) The spirit of the ordinance will be observed;
233 this is in the R2 district, which allows single-family and two-family use by right. It
234 is a State route and part of the downtown area. It does have quite a few multi-
235 families in the existing neighborhood, as well as some commercial uses. She
236 feels that two buildings - which will not be one massive structure, and may even
237 appear as separate properties - will not change the essential character of the
238 neighborhood. Mr. Baum said the four units on this lot have a lower density than
239 the smaller sized lots surrounding it. Most of the other multi-families in the area
240 are converted and may have a different aesthetic, but that's not what's before us
241 tonight with the question of density. It won't have an impact on the
242 neighborhood's health, safety or welfare. The relocation of the driveway is an
243 improvement. Mr. Prior said so is the moving of the properties off of the rear
244 property line for snow removal and buffering vegetation or fencing. Ms. Davies
245 said we would be returning this to a residential use from a fairly high-impact
246 commercial use, which is a reduction in the non-conformity of the property. 3)
247 Substantial justice is done; this property has been in need of redevelopment for a
248 long time. Its redevelopment is a benefit to the applicant, the neighborhood, and
249 the overall area. 4) The value of surrounding properties will not be diminished;
250 there was no expert testimony. As a valuation expert, she would suggest that this
251 investment and return to a residential use will enhance property values in the
252 area. 5) Literal enforcement of zoning ordinance will result in an unnecessary
253 hardship; Attorney Arnold did a good job of discussing the special conditions of
254 the property. Its size, its large frontage, and its configuration make it a challenge
255 to develop. Its former use as a gas station makes it more difficult to develop for
256 residential use. A change in use would be a fairly high bar cost-wise. Those
257 factors and the high-traffic location make single-family less likely to be the most
258 attractive option to the market. The proposed use is a reasonable one; yes, given
259 the reduction in size and scale, the four units is a reasonable use. Mr. Baum said
260 these will be residential units.

261 Ms. Davies made a motion to approve the application for a variance from Article 4,
262 Section 4.3 Schedule II to exceed the density requirements to permit four units on a
263 26,000+/- square foot lot where a minimum lot size of 15,000 sq. ft. is required for each
264 single-family dwelling and 24,000 sq. ft. is required for each duplex. The subject property
265 is located at 46 Main Street, in the R-2, Single Family Residential zoning district. Tax
266 Map Parcel #63-1. ZBA Case #24-1. We approve the application for four units with the
267 condition that upon Planning Board review, special attention is paid to screening the six
268 parking spaces at the rear of the parcel from abutters, particularly in the sightline of the
269 property at 44 Main Street. Mr. Baum seconded. Mr. Prior, Ms. Olson-Murphy, Ms.
270 Theresa Page, Mr. Baum, and Ms. Davies voted aye, and the motion passed 5-0.

- 271
272
273
274 B. The application of David and Emily Gulick for a variance from Article 5, Section
275 5.1.2 A. for the expansion of a non-conforming use to permit the proposed
276 construction of an addition (garage with living space above) to replace an
277 existing garage which currently encroaches within the required side yard setback;
278 and a variance to exceed the maximum building coverage requirement in the R2
279 zoning district. The subject property is located at 21 Charter Street, in the R-2,
280 Single Family Residential zoning district. Tax Map Parcel # 73-101. ZBA Case
281 #24-2.

282
283 Owner David Gulick spoke regarding the application. Mr. Gulick said
284 we're requesting a variance to replace a non-conforming garage with a new two-
285 story addition which will encroach on the side yard setback, as well as a variance
286 to exceed the building coverage limit. His family bought the property in 2017. We
287 live at the Phillips Academy housing, and we have to be off-campus by June of
288 next year. We have two daughters in their teens, and we're also legal guardians
289 of our sister's daughter. Our intention is to move to this property. We have two
290 bedrooms right now, but this would enable us to have a third bedroom. Mr. Prior
291 asked if the property is currently rented. Mr. Gulick said it's been vacant since
292 December 2023. Mr. Baum asked if this will be a garage with a bedroom on top.
293 Mr. Gulick said yes, it will connect to the existing house on the second floor. The
294 current garage footprint will be pushed forward so that it can connect. Mr. Baum
295 said we don't have a view of where everything is compared to the side setbacks.
296 Mr. Prior said you can see the property lines in another drawing. Mr. Gulick said
297 the existing garage is set back 2'5". The addition will be parallel to the house,
298 which results in a 2'3" distance from the side. Mr. Baum asked the height of the
299 garage. Mr. Gulick said the proposed peak is 20 feet, and it slants down to 18
300 feet. We're trying to keep this so that it doesn't feel so large. Mr. Prior asked if
301 the connector is on the second floor only. Mr. Gulick said yes. Creating a
302 connection on the first floor would remove a useable space with a set of stairs. It
303 would be connected along the upstairs hallway. Ms. Page asked if there's a six-
304 foot privacy fence along the property line, and Mr. Gulick said yes. It extends to



TOWN OF EXETER, NEW HAMPSHIRE

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November 27, 2023

John L. Arnold, Esquire
Orr & Reno
45 S. Main Street
P.O. Box 3550
Concord, New Hampshire 03302-3550

Re: Zoning Board of Adjustment Case #23-17 – Variance Request(s)
46 Main Street, Exeter, N. H.
Tax Map Parcel #63-1

Dear Attorney Arnold:

This letter will serve as official confirmation that the Zoning Board of Adjustment, at its November 21st, 2023 meeting, voted to approve your client's application(s) for variance from Article 4, Section 4.2 Schedule I: Permitted Uses to allow the proposed construction of multi-family units on the property located at 46 Main Street; and the variance from Article 4, Section 4.3 Schedule II: Density & Dimensional Regulations-Residential seeking relief from the minimum front yard setback requirement, as presented.

The Board also voted to deny the variance from Article 4, Section 4.3 Schedule II to exceed the density requirements to permit five (5) units on a 26,000+/- square foot lot, as presented. The application was denied on the basis that it did not satisfy the criteria for granting a variance, specifically, criterion:

1. *The variance will not be contrary to the public interest;*
2. *The spirit of the ordinance is observed; and*
5. *A. Literal enforcement of the provisions of the ordinance would result in an unnecessary hardship.*

If you should have any questions relative to this decision, please do not hesitate to contact the Building Department office. Please be advised that if you wish to apply for a re-hearing of this application, you must do so within thirty (30) days of the date of this decision. A copy of the minutes of this meeting will be available for your review upon request from the Building Department office.

If you should have any questions, please do not hesitate to contact the Building Department office at (603) 773-6112.

Sincerely,

Robert V. Prior
Chairman
Exeter Zoning Board of Adjustment

cc: Patrick Houghton, Applicant
David and Esther Jin, property owners
Douglas Eastman, Building Inspector/Code Enforcement Officer
Janet Whitten, Town Assessor

RVP: bsm

440 B. The application of Patrick Houghton for a variance from Article 4, Section 4.2
441 Schedule I: Permitted Uses to allow the proposed construction of multi-family
442 units on the property located at 46 Main Street; a variance from Article 4, Section
443 4.3 Schedule II: Density & Dimensional Regulations-Residential seeking relief
444 from the minimum front yard setback requirement; and a variance from Article 4,
445 Section 4.3 Schedule II to exceed the density requirements to permit five (5)
446 units on a 26,000+/- square foot lot. The subject property is located in the R-2,
447 Single-family Residential zoning district. Tax Map Parcel #63-1. ZBA Case #23-
448 17.

449
450 Attorney John Arnold of Orr & Reno spoke on behalf of the applicant, Pat
451 Houghton. Attorney Arnold said this is Cocheco Auto Repair. It's in zone R2 and
452 is about 6/10 of the acre. It has a curved frontage with two existing curb cuts. The
453 proposal is to demolish the existing auto repair facility and build five townhome-
454 style condominiums. There would be three units in the building to the left and two
455 units in the building to the right. The project requires three variances: to allow
456 multi-family use in the R2 zoning district; to allow a front setback of 14 feet where
457 25 is required; and a lot size or density variance to allow five units on a 26,000
458 square foot lot.

459 Mr. Prior asked what would be allowed by right or special exception on
460 this property. Attorney Arnold said by right it could be a single-family. By special
461 exception it could be a duplex. If this were a conversion, which it's not because
462 there's no existing residential building there today, the minimum lot size per unit
463 is 4,500 square feet. We're providing 5,200 square feet per unit. For the setback,
464 allowed by right is 25 feet, but we're asking for 14.

465 Mr. Houghton said he represents Houghton Properties, a family real
466 estate investment company from Manchester. His son spent the last four years at
467 Phillips Exeter and he passed by this service station in disrepair. Exeter is a
468 unique and special place and it would be a great improvement to the
469 neighborhood if that building were redeveloped. We're planning on building five
470 condominiums, with one duplex and three attached condominiums. We chose a
471 Georgian Colonial architecture style to fit into Exeter. The condos will be
472 townhouse in style with a common driveway to a rear parking field. There will be
473 a garage under. The units will be 2,000 to 2,200 square feet with three floors of
474 living area, three bedrooms and 2.5 baths.

475 Mr. Prior asked if they meet the parking requirements. Mr. Houghton said
476 yes. There will be one-stall garages underneath the units, with additional parking
477 in the parking field out back. Mr. Prior said it would need 17 parking spots: one
478 for each bedroom and an extra for visitors for each four units. Ms. Olson-Murphy
479 said three-bedroom units only require two spaces, so it only requires 12.

480 Mr. Baum asked about the open space. Mr. Prior said the impervious
481 surface is 12,500 square feet. Attorney Arnold said we provide 52% and 40% is
482 required.

483 Mr. Houghton said we had a neighborhood meeting and sent out 40
484 letters to neighbors on Main Street and adjacent streets, although some were
485 addressed incorrectly. He's not sure how many did not get to the correct house,
486 but he did get a number of phone calls and had six people at the neighborhood
487 meeting with no opposition to the project.

488 Attorney Arnold went through the variance criteria. Mr. Prior said the
489 attorney will go through all three variances together. 1) The variance will not be
490 contrary to the public interest and 2) The spirit of the ordinance will be observed;
491 the test is whether the variances would alter the essential character of the locality
492 or affect the public health, safety, or welfare. He does not believe multi-family use
493 would alter the essential character of the locality. The current use is a non-
494 conforming auto garage, so returning it to residential use will be consistent with
495 the character of the neighborhood. The neighborhood already has a number of
496 multi-family properties around it. 64 Main Street, 68 Main Street, 44 Main Street,
497 and 41 Main Street are all multi-family. 69 Main Street is the newest multi-family
498 in the area. It was approved a couple of years ago. There are nine units in it. Mr.
499 Eastman said that property is in a commercial zone and it's a permitted use.
500 Attorney Arnold said it's still in proximity and it's relevant to the character of the
501 locality. Regarding the lot size density variance, the zoning ordinance doesn't
502 contemplate multi-family in the R2 District at all, so it doesn't specify a density for
503 this use. Minimum lot size for single-family homes is 15,000 square feet and for
504 duplexes 24,000 square feet. If this were a conversion, the minimum lot area for
505 each unit is 4,500 square feet, so for five units you would need 22,500 square
506 feet, and our lot size is 26,000 square feet. All other multi-family properties in the
507 area have more density than what we're proposing. 64 Main Street has five units
508 with 1,300 square feet each. 69 Main Street only has 3,500 square feet per unit.
509 Regarding the setback, we're taking the measurement of the porch stairs.
510 According to the ordinance, "open air porches" can be in the front yard, but we
511 weren't sure how "open air porch" was defined, so we measured from the front
512 corner of the porch to be conservative. The porch itself is four or five feet deep,
513 so the actual building is more like 19 feet back. A 14 foot setback is consistent
514 with other properties in the area; some have even less than 14 feet. A reduction
515 in the front yard setback allows the development to be shifted forward, so there's
516 more room for landscaping and screening to protect the abutters in the rear. It
517 provides a similar streetscape to other properties. Regarding public safety, health
518 and welfare, this historically has been an area of concern with respect to traffic
519 near to the school and having traffic backups during pickup and dropoff. We took
520 a look at the ITE trip generation figures, and five units have about three trips
521 generated at the peak hours. That's a decrease from the trip generation from the
522 existing use, so it will be an improvement in traffic. The property now has two
523 very wide curb cuts and there's no cohesive flow of traffic. That would be
524 eliminated; the curb cuts will be consolidated into a single curb cut on the side
525 closer to the school, although it may change as part of the Planning process. 3)
526 Substantial justice is done; we don't believe there's any harm to the public with

527 this application. There are public benefits: it eliminates the non-conforming
528 commercial auto repair facility; it will beautify the property; it will make the
529 property more consistent with the rest of the neighborhood; and it will provide
530 housing to the town which is in great demand. There is a benefit to the applicant
531 in that he will be able to proceed with the project. 4) The value of surrounding
532 properties will not be diminished; yes, removing the existing service station and
533 building this development is going to boost surrounding property values. The use
534 will be more consistent with what's around it. There's already reduced setbacks
535 and more density in this area than what we're proposing. 5) Literal enforcement
536 of zoning ordinance will result in an undue hardship; yes, this is a challenging
537 property. There have been a number of efforts to redevelop it over the past
538 several years, which have all been unsuccessful. Looking at the GIS map, it's a
539 much larger lot than surrounding properties other than the school. It's 6/10 of an
540 acre, where other nearby lots are half that size. It's an unusual shape with an
541 irregular rear lot line. These make it hard to repurpose this property as a single-
542 family residence. There is no substantial relationship between the purposes of
543 the ordinance and their application to this property; given how the surrounding
544 area has already been developed. There's already multi-family uses throughout
545 the neighborhood with more density and lesser setbacks. Strictly enforcing those
546 restrictions on this property don't serve the public purpose of the ordinance.
547 What's being proposed is consistent with what's already there. On the setback,
548 you may say you can shift the development back and create a few more feet in
549 the front, but where we've placed the development is consistent with surrounding
550 properties and provides a substantial benefit to the properties in the rear with
551 additional screening and landscaping. The proposed use is reasonable and
552 would improve the area.

553 Ms. Davies asked for details on the landscaping. Mr. Houghton said we'd
554 be concerned about the two properties behind us and the property to the side.
555 Either a fence or general landscaping would be considered.

556 Mr. Prior asked if they meet the height requirements, and Mr. Houghton
557 said we think we will be ok. The maximum height is 35 feet. Certainly we'll be
558 close to that.

559 Ms. Davies said typically service stations don't get repurposed to
560 residential use because of contamination issues. Mr. Houghton said there was a
561 phase 1 study that is complete, and we hired an engineer to look at it. The
562 engineer felt comfortable that we could develop the lot into residential use. We
563 will do a phase 2 study if it's indicated. Mr. Prior asked if the burden is on the
564 seller if contamination is found. Mr. Houghton said he thinks that could be
565 negotiated. The DES polices that. There is funding out there to take care of
566 problems. He [Mr. Houghton] owns a former gas station on South Willow Street
567 in Manchester that was turned into a restaurant, and we did a thorough study at
568 DES. We continue to have monitoring wells there. Mr. Prior said that doesn't
569 weigh into the variance criteria under consideration. Mr. Baum asked if any
570 underground tanks had been removed. Mr. Eastman said yes, that was done

571 years ago. Mr. Baum asked the applicant if there would be a basement, and Mr.
572 Houghton said yes. Ms. Davies said it appears that the garage is on the first
573 floor, and there will be a basement underneath. Mr. Houghton said the garage
574 will be the first 20 feet of the condominium and another 20 feet of
575 basement/storage, partly below grade.

576 Ms. Pennell asked where they will put the snow. Mr. Houghton said we've
577 done some engineering on where snow can be placed. Attorney Arnold said
578 there's 25 feet behind the parking lot.

579 Ms. Pennell said this is a corner lot, would it be subject to Article 5.3.2 on
580 corner lot visual clearance? Mr. Eastman said it's on a corner, but it's not
581 considered a corner lot. If there are any issues, we'll look at them in the planning
582 process.

583 Mr. Baum asked about the density requirement on a conversion. If you
584 look at the dimensional table, the only place that would be less than you're
585 proposing is the R5 multi-family. Attorney Arnold said it wasn't clear that we
586 needed a separate variance for density, but Mr. Eastman thought it was better
587 practice to include it. For a residential conversion, the ordinance says you need
588 30% of the required lot size for each unit. If you take the 15,000 square feet
589 required for single-family, it's 4,500 square feet. If you're doing a conversion of 5
590 units at 4,500 square feet, it's 22,500, which is less than the 26,000 we have.
591 None of that is binding because we're not doing a conversion, but the ordinance
592 contemplates a density similar to what we're doing here by special exception if
593 we were doing a conversion.

594 Mr. Prior asked for public comment.

595 Dave Essensa of 44 Main Street said he doesn't see any harm here if we
596 stuck to the ordinance. If he built a single-family or two family home, he'd still
597 make a profit. Five units in 0.6 acres would destroy the character of our
598 neighborhood. None of the houses there look anything like that. The units would
599 block his view, there would be lights shining into his property, and people coming
600 home at all hours of night.

601 Mr. Essensa read the letter of Tim Upton of 45 Main Street, who was not
602 present. He said the property of 46 Main Street is in an area of historical homes
603 and has been under consideration as a historic zone. His house was built in
604 1850. Adherence to single-family zoning regulations benefits the entire
605 community. The Board should deny any variance.

606 Mr. Essensa said he thinks this would be damaging to the value of his
607 property and others. Putting in five units compared to a single-family would
608 negatively affect the value. If the Board doesn't see it this way, he would ask for
609 an extension so that he could have an appraisal done on the property.

610 Ms. Davies said the property at 44 Main Street is non-conforming with
611 three units. The density is 3,049 square feet per unit. Yet you think this would
612 destroy the character because it has density next to your property? Mr. Essensa
613 said it would block his view. How are you going to get the snow back there?
614 Where's it going to drain to?

615 Anne Essensa, the wife of Dave Essensa, said what is there now is an
616 eyesore. She takes exception to calling 44 Main Street an apartment house; our
617 house is the original house and there are two tiny apartments in the back
618 extension. When we moved in, we were told the gas station was grandfathered
619 in, and the zoning was residential, so it would not be allowed to have a big
620 business or residence unless exceptions were made. Every house around the
621 gas station is the old, original, historic single-family home. They might rent out a
622 tiny little apartment. What's being proposed is huge compared to these homes.

623 Paul Markey of 10 Ash said if you turn this property into a huge house or
624 five units you'll turn that into a blind corner. School traffic is already a nightmare,
625 and he can't get out of his street at 7:30 or 2:30. It's against the public interest. It
626 was a gas station/junkyard and he'd be very worried about the cleanup there. Mr.
627 Prior said that's not a concern of the Zoning Board. DES would carefully monitor
628 any former gas station. Mr. Markey said regarding substantial justice, we would
629 need something concrete about landscaping, not just "maybe grass or a fence."
630 Anyone coming in and out of the driveway is going to be shining lights into his
631 house. Regarding the value of the surrounding properties not being diminished,
632 talking about setbacks, all the setbacks there have been grandfathered in. Mr.
633 Prior said 69 Main Street is similar, although it's in a different zone. Mr. Markey
634 said no, it's further back. Parking at 64 Main Street is ridiculous, it turns it into a
635 single-lane street. Snow removal will put the snow in his backyard. Please keep
636 this property single-family.

637 Kevin Blair of 55-59 Main Street, and the owner of the Exeter Flower
638 Shop which is now closed at that location, said his property is planning some
639 changes, and he hopes he can come out to 14 feet. He's not opposed to the
640 situation, but when we talk condos, maybe we should pay more for the land and
641 have less units. Regarding snow, it will get trucked off the property and be
642 included in the condo fee. Sightline is important, because he takes his life in his
643 hands every time he leaves his driveway. Everyone wants to see this property
644 cleaned up but there are still a few quirks.

645 Attorney Arnold said the concerns about landscaping, sightlines, traffic,
646 and snow removal are typically Planning Board issues. That's when more
647 detailed plans will be put together. On the density, the important thing is to look
648 what's around there. There are 4 or 5 multi-family buildings within 100 feet that
649 have more density than this project. There's no concrete measurement for
650 permissible density. He discussed the calculations done by the previous
651 application.

652 Mr. Prior closed the public session and entered into Board deliberations.
653 [3 minutes of the meeting were lost.]

654 Ms. Davies went through the variance criteria for the first variance
655 request. 1) The variance will not be contrary to the public interest and 2) The
656 spirit of the ordinance will be observed; the town has a need for housing. The
657 character of the neighborhood includes a significant amount of multi-family. The
658 location in the presence of other multi-family wouldn't threaten the safety or

659 welfare or injure public rights. Mr. Baum said the layout of this lot is important.
660 Both the size and the shape do not lend themselves to a single-family. Ms.
661 Davies said it's on a curve in a mixed use area. Ms. Page said moving this to
662 multi-family residential is moving this closer to the purpose of the ordinance than
663 the current use, which is non-conforming. Ms. Davies continued with the criteria:
664 3) Substantial justice is done; everyone has a preference for lower density in
665 their neighborhood, but she doesn't see any specific harm to other individuals, as
666 long as site considerations are taken into account during the planning process.
667 Those things are out of our purview. 4) The value of surrounding properties will
668 not be diminished; Mr. Essensa is concerned about that, but any new investment
669 on this lot will enhance property values, not detract from them. The use, being
670 consistent with other properties, wouldn't detract from it. Mr. Baum said there
671 would be little you could do here that would not improve property values, given
672 the current nature of the property. 5) Literal enforcement of zoning ordinance will
673 result in an unnecessary hardship; we've discussed that we think the proposed
674 use of multi-family is a reasonable one. We've discussed the individual
675 characteristics of the parcel, its shape, its location on the curve. If there's any
676 additional cost as the result of its previous use as a gas station, that's more of a
677 hurdle for a single-family home buyer to meet than a multi-family developer. She
678 thinks it meets both criteria A and B. It's a reasonable use and the use will not
679 alter the essential character of the neighborhood.
680

681 Ms. Davies moved to approve the request for a variance from Article 4, Section 4.2
682 Schedule I to permit multi-family use on the subject property. Ms. Olson-Murphy
683 seconded. Ms. Page asked if we need as a condition that Planning Board site plan
684 review is required. Ms. Olson-Murphy said that comes in as a multi-family. Mr. Baum
685 said in the last one, Mr. Eastman recommended it.

686
687 Ms. Page moved to amend the motion to include that site plan review and approval will
688 be obtained from the Planning Board. Ms. Olson Murphy seconded the amendment. Ms.
689 Page, Ms. Davies, Mr. Baum, Mr. Prior, and Ms. Olson-Murphy voted aye and the
690 motion was amended.

691
692 Ms. Page, Ms. Davies, Mr. Baum, Mr. Prior, and Ms. Olson-Murphy voted aye on the
693 amended motion and it passed 5-0.

694
695 Mr. Prior said the next request is a variance from Article 4, Section 4.3
696 Schedule II: Density & Dimensional Regulations-Residential seeking relief from
697 the minimum front yard setback requirement. Ms. Davies said she heard concern
698 that site distance and the blind curve will be an issue. She doesn't feel qualified
699 to make a judgment on that. Mr. Prior said this is not a formal corner lot, but it's
700 on a tight curve. We've heard testimony that there's traffic, the speed, the school,
701 etc. The corner lot requires a 30 foot setback. If we were approve it, it would be
702 subject to site plan review. He's not comfortable with allowing this because of the

703 nature of the property. The sightline is not impeded by the existing structure but it
704 may be by the proposed structure. Ms. Davies said she feels conflicted. The
705 trend in planning and neighborhood design is not to have parking lots in front of
706 everything. Mr. Prior said the combination of size and density here, there's ways
707 of reducing the impact into the setback without forcing parking up front, whether
708 it's four units, five smaller units, etc. The Planning Board would determine that,
709 but we can approve or deny the application in front of us. Mr. Baum said he has
710 trouble calling this a corner lot. It's all Main Street. Mr. Prior said it would meet
711 the legal definition, because Article 5.5.3 says "all street intersections," and Cass
712 Street is coming in right there. Ms. Davies said the intersection is across the
713 street, so she disagrees with his interpretation. Mr. Prior said the ordinance says
714 30 feet distance from the intersection. Ms. Olson-Murphy said if it's just 30 feet
715 from Cass Street, in theory, one building could be close and one couldn't be
716 close. Mr. Baum said getting designs that are not final makes it harder to get this
717 judgment. He personally doesn't have significant concerns about setback given
718 the surrounding area and how many homes are right on the sidewalk. It's more
719 consistent with the neighborhood than pushing it back to be conforming. Mr. Prior
720 said once we approve a specific number, it takes it away from the Planning
721 Board to approve. Ms. Page asked if it's possible to approve it in a way that the
722 Planning Board would have to be satisfied with its safety? Mr. Baum said he
723 doesn't know what the Planning Board would be able to do with it. We could
724 make it a setback to the enclosed structure rather than the open porch. Mr. Prior
725 suggested reopening public session and asking the applicant.

726 Attorney Arnold said if you want to give us the five units we're ok with not
727 having the setback. He understands the concern about the sightline but he
728 doesn't have technical expertise. Engineers have not looked into this. Is the
729 concern people entering and exiting or people driving around the curve? Mr. Prior
730 said there's a lot of traffic there, cars parked, and times that it approximates a
731 single-lane road. Ms. Davies said there's heavy pedestrian traffic as well.
732 Attorney Arnold said if the concern is people driving around that curve, the
733 intersection doesn't really come into it. Mr. Baum asked the distance from the
734 property line. Ms. Olson-Murphy said with the sidewalk, there could be 20 feet.
735 The breakdown lane gives you a little more. Attorney Arnold said the sidewalk is
736 outside of our property. Looking at the picture and estimating dimensions, it
737 doesn't look like the sightline is a problem. Mr. Houghton said if you look at our
738 proposed driveway, if you can imagine a car pulled up to exit the property, he's
739 not sure the sightline would be much different with this development. Ms. Page
740 said from a perspective of appearance of overcrowding, it actually helps that this
741 is on a curve. It would break up the building a little.

742 Ms. Page went through the criteria for variance request 2. 1) The variance
743 will not be contrary to the public interest and 2) The spirit of the ordinance will be
744 observed; from our perspective, we're ok with the appearance. There's been
745 concern about safety with regard to the setback, but some of that is mitigated by
746 the fact that it's not a 90 degree angle and the sidewalk adds 5-6 feet based on

747 the rendering. 3) Substantial justice is done; potential harm to the public is the
748 safety issue and the benefit to the applicant is being able to accommodate multi-
749 family use on the lot. 4) The values of surrounding properties will not be
750 diminished; yes, we haven't had a discussion of the value being impeded in the
751 context of the setback. 5) Literal enforcement of zoning ordinance will result in an
752 unnecessary hardship; some of the special conditions we've discussed are the
753 size of the lot and the irregular shape. In order to accommodate the multi-family
754 use, placing the construction closer to the road would allow for more screening
755 and privacy in the back. Mr. Prior said he's not sure he sees a hardship on the
756 setback. Mr. Baum said the shape of that lot and the jut-out from 44 Main limits
757 how far back you can move the buildings. There is case law that suggests that if
758 the ordinance is outside of the general condition of the neighborhood, there is a
759 hardship. If you look on Main Street, the other buildings are right on the property
760 line.
761

762 Ms. Page moved to approve a variance from Article 4, Section 4.3, Schedule II to permit
763 a front setback of 14 feet where 25 is required. Ms. Davies seconded. Mr. Baum asked if
764 we want to amend that it's as plans were presented? There will be stairs and an open
765 porch. Ms. Olson-Murphy said if we say "as presented," could they not change anything,
766 like move the driveway? Mr. Prior said no, that doesn't relate to the setback.
767

768 Mr. Prior made a motion to amend the motion to include the language "as submitted in
769 the plans as part of the application." Ms. Olson-Murphy seconded the amendment. Ms.
770 Page, Ms. Davies, Mr. Baum, Mr. Prior, and Ms. Olson-Murphy voted aye and the
771 motion was amended.
772

773 Ms. Page, Ms. Davies, Mr. Baum, Mr. Prior, and Ms. Olson-Murphy voted aye on the
774 amended motion and it passed 5-0.
775

776
777 Mr. Prior said the next variance is from Article 4, Section 4.3 Schedule II
778 to exceed the density requirements to permit 5 units on a 26,000 square foot lot.
779 Mr. Baum said this is the one he has trouble with. It feels like a lot. The last
780 application seemed more apples-to-apples to apply the conversion requirements
781 because that was an existing building. These are brand new buildings. In that
782 application, it didn't meet the 15,000 square feet per unit, but it was 13,000; this
783 is 5,000. It's below anything that's allowed in any district except for one. It seems
784 like too much for this lot. Multi-family makes sense but the density is more than
785 he's comfortable with. Mr. Prior asked if he would suggest an alternative density
786 or just say no. Mr. Baum said we have to take the applications as presented. We
787 can ask the applicant to come back and propose something.

788 Mr. Baum went through the criteria for the third variance request. 1) The
789 variance will not be contrary to the public interest and 2) The spirit of the
790 ordinance will be observed; he does think 5 units negatively impacts the

791 character of this neighborhood. There are other more densely developed lots
792 based on units per lot area, but they're generally contained within a single
793 building. There are a lot of single-family homes and single buildings, with the
794 exception of 69 Main Street which is within a different zone. Mr. Prior said all the
795 properties cited by the applicant are single buildings. Ms. Davies said that he
796 liked the fact that it was two buildings because that makes it less monolithic. Mr.
797 Baum said he wouldn't want to suggest a monolithic building because it would
798 impact sightlines and views for the neighbors. He doesn't believe the first two
799 criteria are met. 3) Substantial justice is done; he has less of an issue with this.
800 It's the weighing test and there certainly is a detriment to the applicant. 4) The
801 value of surrounding properties will not be diminished; that is a tougher call, but
802 without evidence, we don't have enough to deny. 5) Literal enforcement of zoning
803 ordinance will result in an undue hardship; he does think special conditions exist
804 in the lot size and shape, and that it's a corner lot. There isn't a specific provision
805 in the ordinance. Taking the general restrictions on density, which this doesn't
806 meet, and the closest other permitted type, which is conversion for four units
807 only, he thinks the intent is to not have overburdened lots. The use is reasonable
808 because it's residential, but fair and substantial relationship is where this fails.
809

810 Mr. Baum made a motion to deny the request for a variance from Article 4, Section 4.3
811 Schedule II to permit a density of 5 units on the property, for failure to meet criteria 1, 2,
812 and 5a. Ms. Page seconded. Ms. Page, Mr. Baum, Mr. Prior, and Ms. Olson-Murphy
813 voted aye. Ms. Davies voted nay. The motion to deny passed 4-1.

814
815
816
817 **II. Other Business**

818 A. Approval of Minutes: October 17, 2023

819 The Board tabled the minutes until the next meeting in December.
820

821 **III. Adjournment**

822 Ms. Davies moved to adjourn. Ms. Page seconded. All were in favor and the meeting
823 was adjourned at 11 PM.
824

825 Respectfully Submitted,
826 Joanna Bartell
827 Recording Secretary
828
829



TOWN OF EXETER - DEPARTMENT OF PUBLIC WORKS

**PRELIMINARY APPLICATION TO CONNECT AND/OR DISCHARGE TO TOWN OF EXETER
SEWER, WATER, AND/OR STORMWATER DRAINAGE SYSTEM(S)**

Project Name _____

Project Location _____

Applicant/Owner Name _____

Mailing Address _____

Phone Number _____ email _____

Project Engineer _____

Mailing Address _____

Phone Number _____ email _____

Type of Discharge/Connection Sewer Water Stormwater

Application completed by

Name _____

Signature _____ Date _____

Reviewed and verified by Planning & Building Department _____

DESIGN FLOWS

The water and sewer design flow shall be based upon the New Hampshire Code of Administrative Rules, Env-Wq 1000 Subdivisions; Individual Sewage Disposal Systems, Table 1008-1 Unit Design Flow Figures (current version) or other methodology which may be deemed acceptable by the Town of Exeter. The minimum fee for a single-family residential unit is based on the design flow for two (2) bedrooms. Existing water and sewer flows may be based on meter readings for the current use.

If the proposed discharge is non-residential or is residential but exceeds 5,000 gallons per day (gpd), Section C must be completed. Certain water and sewer discharges must be approved by the State of New Hampshire Department of Environmental Services by way of permit and plan submittals. It is the responsibility of the applicant to ensure submittals are made to the state through the town is necessary. Final town approval cannot be made without the state’s approval if required.

Stormwater design flows are based on the drainage analysis prepared by the applicant using the most current published precipitation data available.

APPROVALS ARE VALID FOR PERIOD OF ONE (1) YEAR FROM DATE OF APPROVAL

SECTION A: PROPOSED NEW CONNECTIONS OR MODIFICATION OF EXISTING CONNECTIONS

SANITARY SEWER

Description of work _____

Title of plan _____

Total design flow (gpd) _____

**For any non-residential discharge or residential discharge exceeding 5,000 GPS, or for a change of use, complete Section C of this form.*

Approved _____ Date _____
Water & Sewer Managing Engineer

WATER

Description of work _____

Title of plan _____

Total design flow (gpd) _____

Approved _____ Date _____
Water & Sewer Managing Engineer

STORMWATER

Description of work _____

Title of plan _____

Total design flow
(10-year storm, CFS) _____

Approved _____ Date _____
Highway Superintendent

APPROVALS ARE VALID FOR PERIOD OF ONE (1) YEAR FROM DATE OF APPROVAL

SECTION B: IMPACT FEES

Provide the following information to determine if a water and/or sewer impact fee will be required for a new development or a change or increase in use.

Current/prior Use(s)

Describe current use(s) _____

<u>Use</u>	<u>Unit Flow (gpd)</u>	<u>Total Existing Flow</u>
Total existing flow		

Proposed Use(s)

Describe proposed use(s) _____

<u>Use</u>	<u>Unit Design Flow (gpd)</u>	<u>Total Design Flow</u>
Apartment - 2 Bedroom	38 gpd/person x 4 people	608 gpd
Total proposed flow		608 gpd

Impact Fees (80% of the design flow)

Change in flow rate (gpd) _____ x 0.8 = Impact Fee flow rate (gpd) _____

If there is a decrease in flow rates, no water or sewer impact fee will be charged. If there is an increase in flow rates, a water and/or sewer impact fee will be charged using the following formula:

Sewer Impact Fee: Flow increase (gpd) _____ x \$1.81= _____

Water Impact Fee: Flow increase (gpd) _____ X \$3.74 = _____

Approved by Town of Exeter

Town Planner _____ Date _____

Water & Sewer Managing Engineer _____ Date _____

APPROVALS ARE VALID FOR PERIOD OF ONE (1) YEAR FROM DATE OF APPROVAL

SECTION C: SANITARY SEWER CLASSIFICATION AND BASELINE MONITORING

(NON-RESIDENTIAL DISCHARGES OR RESIDENTIAL DISCHARGE OVER 5,000 GPD)

In accordance with Title 40 of the Code of Federal Regulations, Part 403 Section 403.14, information provided herein shall be available to the public without restriction except as specified in 40 CFR Part 2. A discharge permit will be issued on the basis of the information provided in this section.

In accordance with all terms and conditions of the Town of Exeter, New Hampshire Ordinances Chapter 15, all persons discharging wastewater into the town’s facilities shall comply with all applicable federal, state, and local Industrial Pre-treatment rules.

PART I - USER INFORMATION

Property Owner Name _____

Owner’s Representative _____

Address _____

Phone _____ email _____

Tenant Name _____

Address _____

Phone _____ email _____

PART II - PRODUCT OR SERVICE INFORMATION

Products Manufactured _____

Services Provided _____

SIC Code(s) _____ Building Area (SF) _____

Number of Employees _____ Days/week of operation _____ Shifts per day _____

PART III - CATEGORY OF SEWER DISCHARGE

Type of Discharge Septic Proposed Existing Change of Use

Water Use (gpd) _____ (from Section A)

Check all that apply:

- Domestic waste only (toilets & sinks)
- Domestic waste plus some process wastewater
- Federal pre-treatment standards (40 CFR) applies

PART IV - CLASSIFICATION DETERMINATION

(to be completed by Town staff)

CLASS 1 - SIGNIFICANT OR CATEGORICAL INDUSTRIAL USER _____

CLASS 2 - MINOR INDUSTRIAL OR COMMERCIAL USER _____

CLASS 3 - INSIGNIFICANT INDUSTRIAL OR COMMERCIAL USER _____

CLASS 4 - NON-SYSTEM USER, OR DISCONTINUED SERVICE _____

See attached sheet for the basis of the determination.

Determined by _____ Title _____ Date _____

Approved _____ Date _____

Water & Sewer Managing Engineer

PART V - CERTIFICATION

I have personally examined and am familiar with the information submitted in this section for the above name use. The information provided is true, accurate and complete. I am aware that there are significant penalties from federal, state and/or town regulatory agencies for submitting false information, including the possibility of fine and/or imprisonment.

I acknowledge and agree to pay all charges incurred for monitoring, testing and subsequent analysis performed on the Town of Exeter sewer, water and/or stormwater drainage system(s), in the course of determining the town's ability to serve the project. Further, I acknowledge and agree that failure to accurately declare said flow requirements shall be sufficient cause to deny access to the Town of Exeter sewer, water and/or stormwater drainage system(s).

Signature of Applicant _____ Date _____

Name of Property Owner _____

APPROVALS ARE VALID FOR PERIOD OF ONE (1) YEAR FROM DATE OF APPROVAL



Photo 1 -Northwest property corner. Location of proposed driveway.



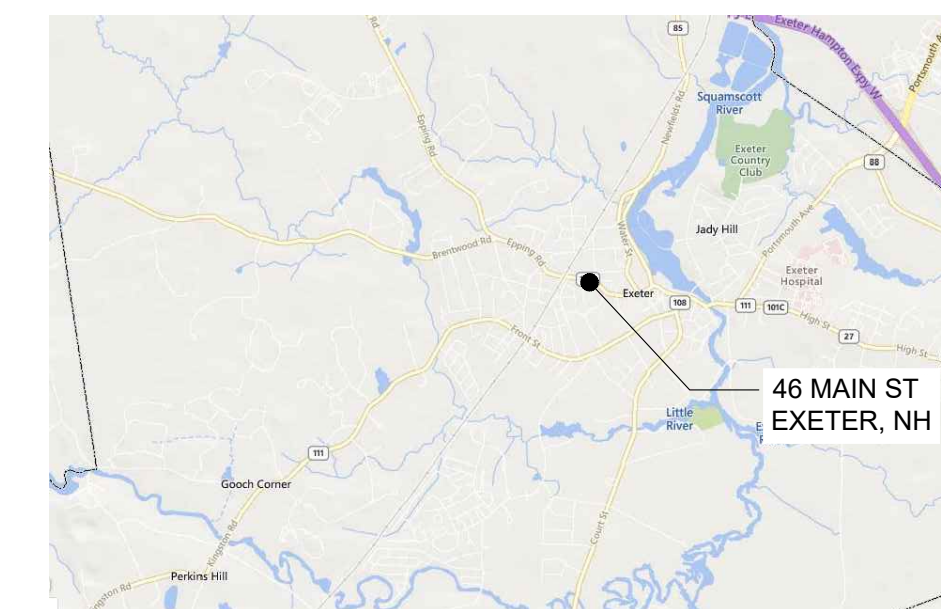
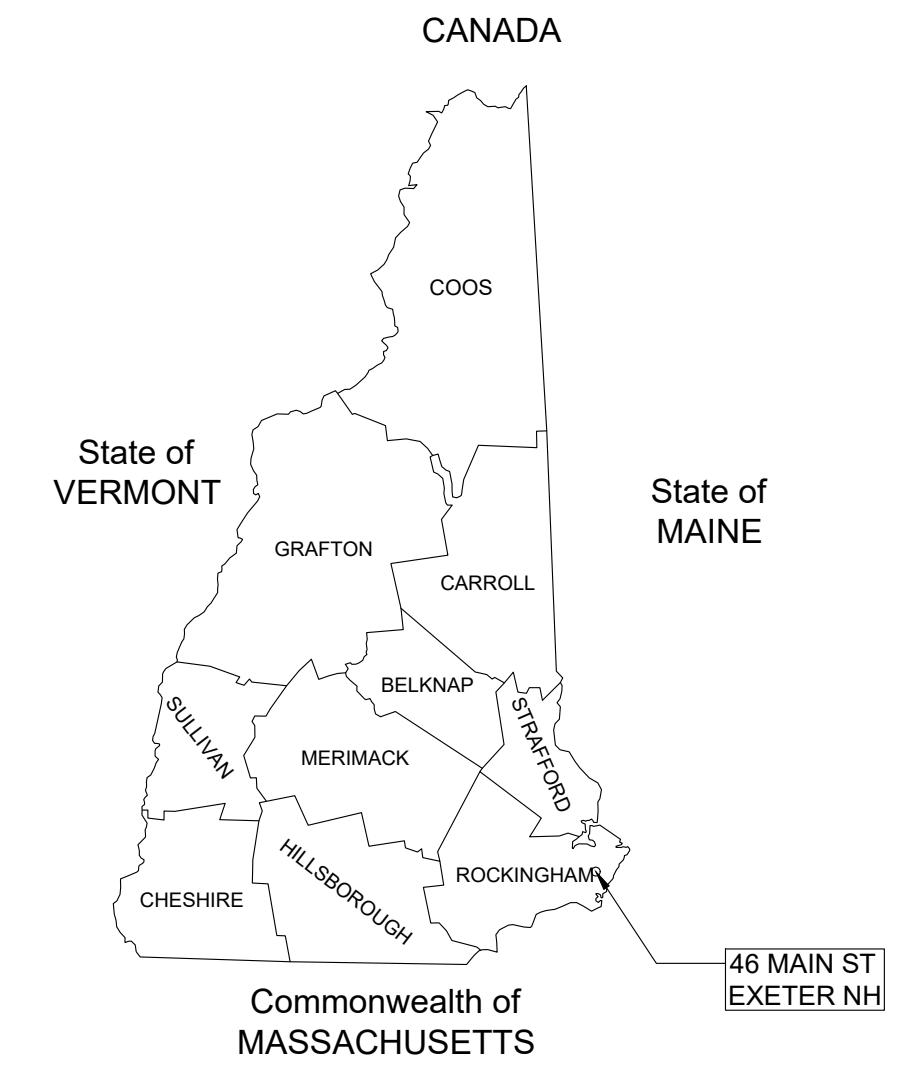
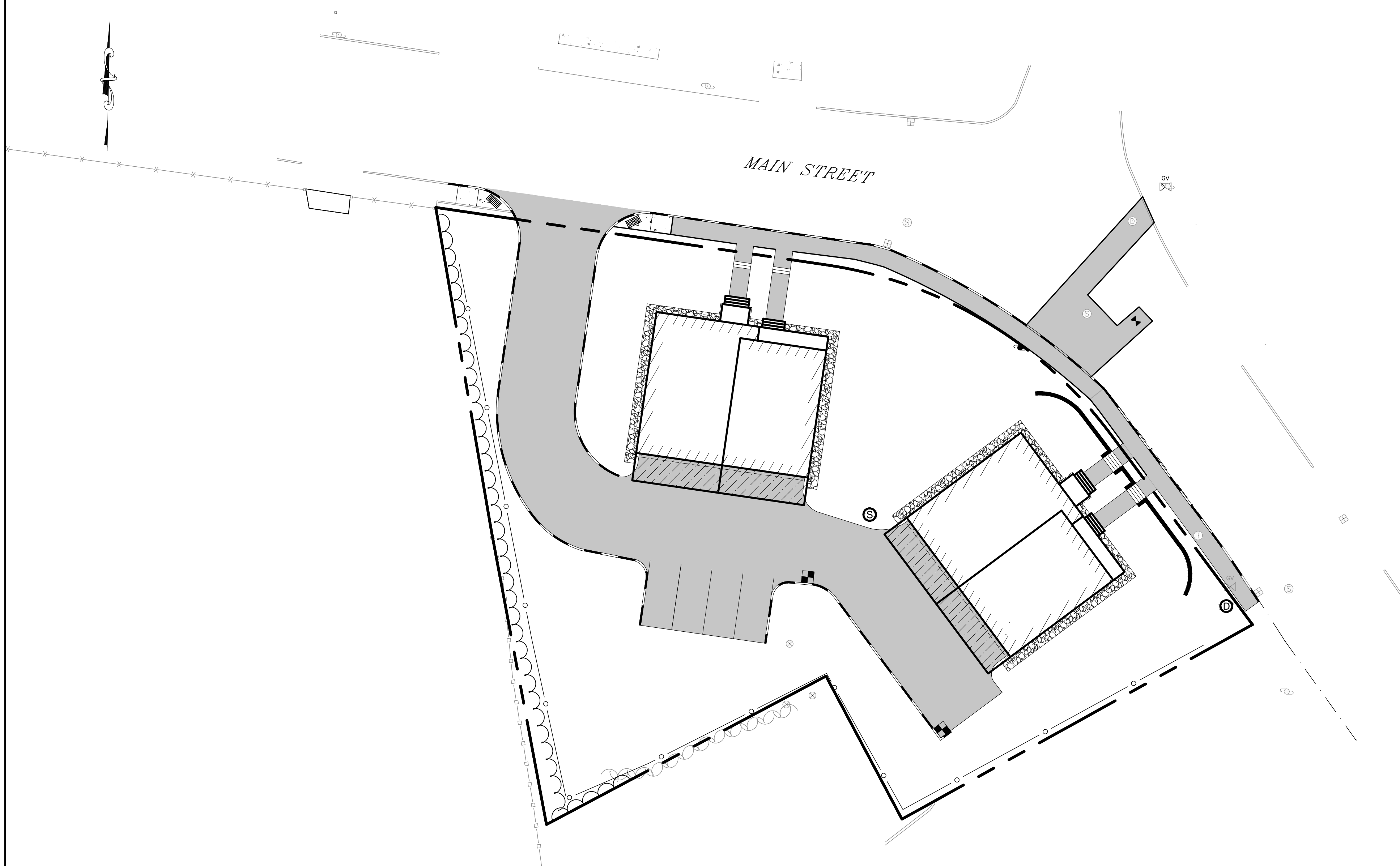
Photo 2 – North property line. Existing curb cut will be closed and sidewalk extended.



Photo 3 – Northeast property corner. Curb cut will be closed and sidewalk extended.

46 MAIN RESIDENTIAL DEVELOPMENT

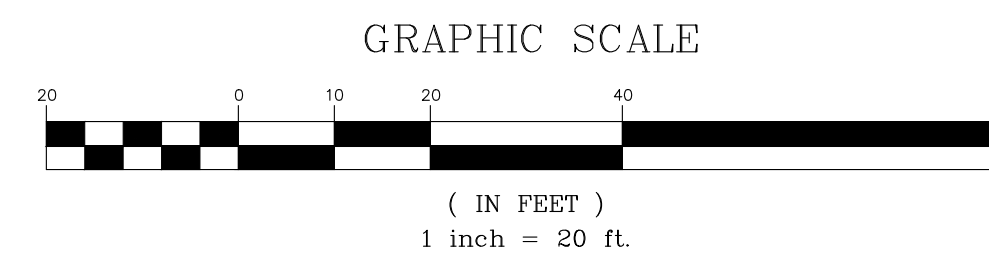
46 MAIN STREET, EXETER, NH 03833



LOCATION MAP
NOT TO SCALE



PLOT PLAN
NOT TO SCALE



PROJECT DESCRIPTION:

THE PURPOSE OF THESE DRAWINGS IS TO SHOW A PROPOSED FOUR UNIT RESIDENTIAL DEVELOPMENT WITH ASSOCIATED PARKING, DRAINAGE, UTILITY, AND STORMWATER TREATMENT SYSTEMS.

ABUTTERS LIST

- 01 63-2: BETH P GRIFFIN REV TRUST, 60 MAIN ST, EXETER, NH 03833
- 02 63-258: KEVIN BLAIR, 59 MAIN ST, EXETER, NH 03833
- 03 63-259: KEVIN BLAIR, 59 MAIN ST, EXETER, NH 03833
- 04 63-260: JASON RICHARD GOULET, 49 MAIN ST, EXETER, NH 03833
- 05 63-274: 1 CASS STREET LLC, PO BOX 72, EXETER, NH 03833
- 06 63-275: TIMOTHY D UPTON REV TRUST, 45 MAIN ST, EXETER, NH 03833
- 07 63-276: WILLIAM F HOYT, 82 WATSON RD, EXETER, NH 03833
- 08 72-208: PHILLIPS EXETER ACADEMY, 20 MAIN ST, EXETER, NH 03833
- 09 73-304: DAVID S ESSENSA, 44 MAIN ST, EXETER, NH 03833
- 10 73-305: PAUL MARKEY, 10 ASH ST, EXETER, NH 03833

SHEET INDEX

SHEET	NUMBER	TITLE	DATE ISSUED	LATEST REVISION
1	C0.1	COVER SHEET	07/09/2024	08/12/2024
2	C0.2	NOTES & LEGEND	07/09/2024	08/12/2024
3	S1.1	EXISTING CONDITIONS PLAN	05/24/2024	08/12/2024
4	C1.1	DEMOLITION PLAN	07/09/2024	08/09/2024
5	C1.2	SITE PLAN	07/09/2024	08/12/2024
6	C1.3	GRADING & DRAINAGE PLAN	07/09/2024	08/12/2024
7	C1.4	UTILITY PLAN	07/09/2024	08/12/2024
8	C1.5	EROSION CONTROL PLAN	07/09/2024	08/12/2024
9	C5.1	CONSTRUCTION DETAILS	07/09/2024	08/12/2024
10	C5.2	CONSTRUCTION DETAILS	07/09/2024	08/12/2024
11	C5.3	CONSTRUCTION DETAILS	07/09/2024	08/12/2024
12	C5.4	CONSTRUCTION DETAILS	07/09/2024	08/12/2024
13	C5.5	EROSION CONTROL DETAILS	07/09/2024	08/12/2024
14	L1	LANDSCAPING PLAN	07/11/2024	07/31/2024
15	L2	LANDSCAPING PLAN	07/11/2024	07/31/2024

APPROVED
TOWN PLANNING BOARD
TOWN OF EXETER, NEW HAMPSHIRE

Chairman _____ Date _____

Wilcox & Barton INC.
CIVIL • ENVIRONMENTAL • GEOTECHNICAL

2 HOME AVENUE
CONCORD, NH 03301
603-369-4190
www.wilcoxandbarton.com

LAND SURVEYOR
JOSEPH M. WICHERT LLS, INC.
802 AMHERST STREET
MANCHESTER, NH 03104

LANDSCAPE ARCHITECT
TERRAIN PLANNING & DESIGN, LLC
311 KAST HILL ROAD
HOPKINTON, NH 03229

REVISION HISTORY
1. REVISED IN RESPONSE TO TOWN COMMENTS (08/12/2024).

ISSUED FOR
PERMITTING

ALL DOCUMENTS PREPARED BY WILCOX & BARTON, INC. ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY WILCOX & BARTON, INC. FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO WILCOX & BARTON, INC. OWNER SHALL INDEMNIFY AND HOLD HARMLESS WILCOX & BARTON, INC. FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

OWNER
JIN ESTHER
2 TWIN POND CIRCLE
EXETER, NH

DEVELOPER/APPLICANT
MR. PATRICK HOUGHTON
210 LEDGEWOOD RD
MANCHESTER, NH

SITE
46 MAIN RESIDENTIAL DEVELOPMENT
EXETER, NH 03833
TAX MAP 63, LOT 1

DRAWING TITLE
COVER SHEET

SCALE	N.T.S.	DATE	08/12/2024
DRAFTED BY	ERL	PROJECT MGR	ERL
CHECKED BY	ERL	PROJECT NO.	HOUG0001

ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

C0.1

01 OF 15



Wilcox & Barton INC.
CIVIL • ENVIRONMENTAL • GEOTECHNICAL

2 HOME AVENUE
CONCORD, NH 03301
603-369-4190
www.wilcoxandbarton.com

REVISION HISTORY
1. REVISED IN RESPONSE TO TOWN COMMENTS (08/12/2024).

ISSUED FOR

PERMITTING

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OWNER

JIN ESTHER
2 TWIN POND CIRCLE
EXETER, NH

DEVELOPER/APPLICANT

MR. PATRICK HOUGHTON
210 LEDGEWOOD RD
MANCHESTER, NH

SITE


46 MAIN RESIDENTIAL DEVELOPMENT
EXETER, NH 03833

TAX MAP 63, LOT 1

NOTES & LEGEND

SCALE	N.T.S.	DATE	08/12/2024
DRAFTED BY	DRW	CHECKED BY	ERL
PROJECT MGR	ERL	PROJECT NO.	HOUG0001

SHEET NO.

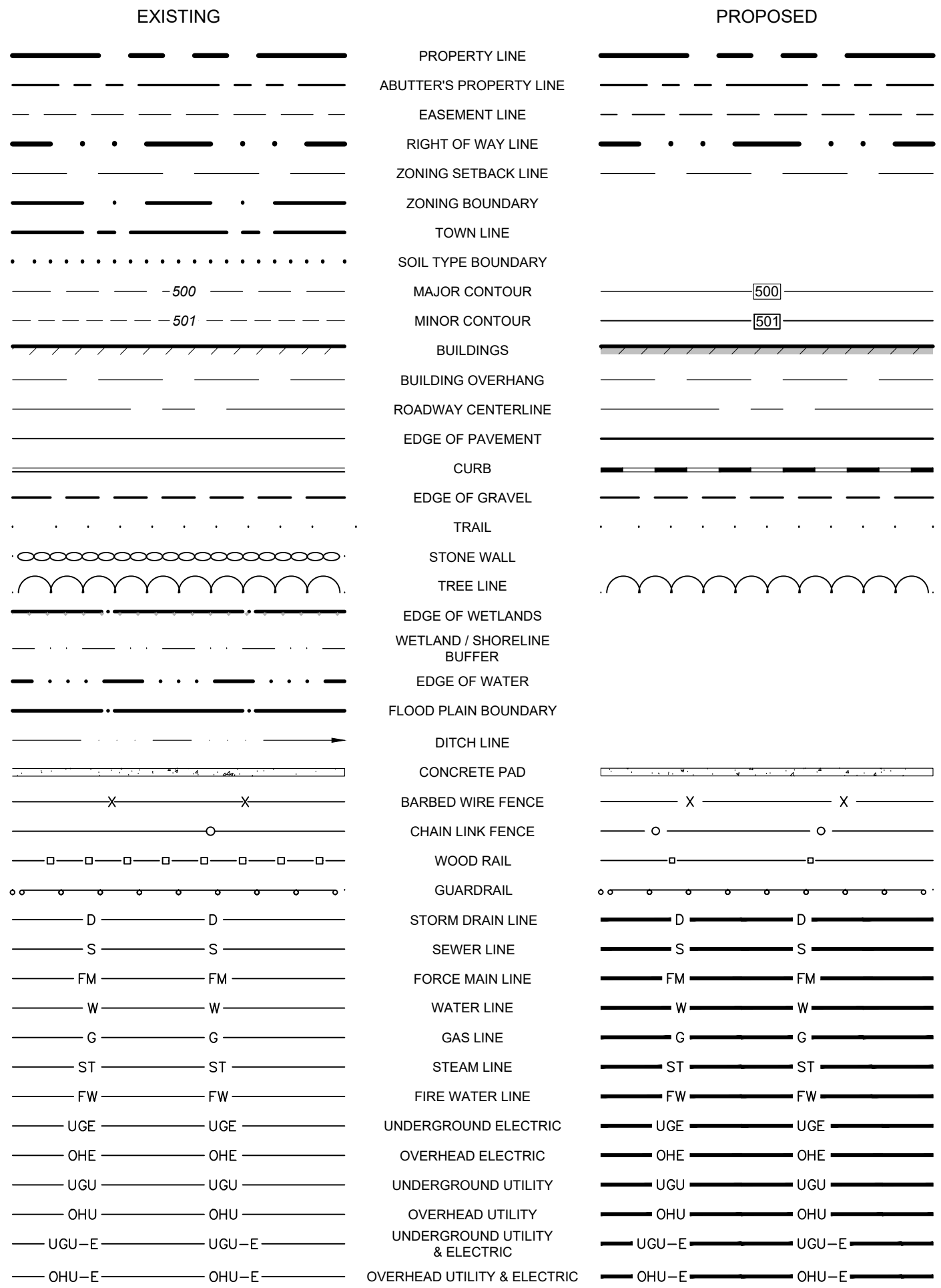


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ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

02 OF 15

LEGEND



STANDARD ABBREVIATIONS

- BCC - BITUMINOUS CONCRETE CURB
- VGC - VERTICAL GRANITE CURB
- SGC - SLOPED GRANITE CURB
- CCC - CAST-IN-PLACE CONCRETE CURB
- PCC - PRECAST CONCRETE CURB
- ICC - INTEGRAL CONCRETE CURB
- RCC - REINFORCED CONCRETE CURB
- BCP - BITUMINOUS CONCRETE PAVEMENT
- GRV - GRAVEL DRIVE SURFACE
- PCS - PORTLAND CEMENT CONCRETE SIDEWALK
- BGS - BITUMINOUS CONCRETE SIDEWALK
- CB - CATCH BASIN
- DMH - DRAINAGE MANHOLE
- SMH - SEWER MANHOLE

GENERAL NOTES

- 1 GENERAL:**
- THESE DRAWINGS SHOULD BE REVIEWED IN CONJUNCTION WITH THE ACCOMPANYING DESIGN REPORT ENTITLED "STORMWATER MANAGEMENT PLAN FOR PATRICK HOUGHTON" DATED 07/09/2024 PREPARED BY WILCOX & BARTON, INC.
 - EXISTING CONDITIONS, TOPOGRAPHICAL INFORMATION, NORTH ORIENTATION, NORTH ARROW, AND COORDINATE VALUES DEPICTED ON THESE DRAWINGS ARE BASED ON A PLAN TITLED "EXISTING CONDITIONS PLAN" DATED 08/24/2024 BY JOSEPH M. WICHERT LLS, INC.
 - THESE DRAWINGS AND ACCOMPANYING TEXT HAVE BEEN PREPARED FOR PATRICK HOUGHTON FOR REVIEW BY THE TOWN OF EXETER PLANNING BOARD, CODE ENFORCEMENT, GENERAL SERVICES, POLICE, AND FIRE DEPARTMENTS.
 - THE CONTRACTOR SHALL OBTAIN COVERAGE UNDER EPA NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FOR CONSTRUCTION ACTIVITIES PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND IMPLEMENTING AN ENVIRONMENTAL PROTECTION AGENCY (EPA) STORM WATER POLLUTION PREVENTION PLAN PRIOR TO THE START OF CONSTRUCTION AND DURING CONSTRUCTION ON-SITE IN ACCORDANCE WITH THE EPA REGULATIONS UNDER THE CLEAN WATER ACT.
 - THE PURPOSE OF THESE DRAWINGS IS TO SHOW A PROPOSED FOUR UNIT RESIDENTIAL DEVELOPMENT WITH ASSOCIATED PARKING, DRAINAGE, UTILITY, AND STORMWATER TREATMENT SYSTEMS.
 - PROPOSED SITE WILL BE SERVICED BY TOWN WATER AND SEWER.
 - A MANDATORY PRE-CONSTRUCTION MEETING WILL NEED TO BE HELD PRIOR TO ISSUANCE OF ANY PERMITS TO DISCUSS INSPECTION FEES, CONSTRUCTION SCHEDULE, ETC.
 - REFER TO CONSTRUCTION DETAIL SHEETS FOR ALL APPLICABLE SITE DETAILS.
 - CONTRACTOR WILL NOTIFY ENGINEERS IMMEDIATELY IF SITE CONDITIONS DIFFER FROM WHAT IS SHOWN ON PLAN.
 - ALL WORK PERFORMED ON BEHALF OF THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TOWN OF EXETER'S CONSTRUCTION STANDARDS AND DETAILS, LATEST EDITION.
 - PROJECT DATUM: NH STATE PLANE COORDINATES NAD 83 (HORIZONTAL) NAVD 88 (VERTICAL).
 - ALL WORK SHALL BE PERFORMED IN A FIRST CLASS MANNER, AND IN ACCORDANCE WITH STATE CODE (IRC 2015 WITH LATEST SUPPLEMENTS), AND LOCAL CODES AND ORDINANCES.
 - ALL EXISTING UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL CONTACT DIG-SAFE (1-888-DIG-SAFE) AT LEAST 72 HOURS AND LESS THAN 30 DAYS PRIOR TO STARTING CONSTRUCTION AND SHALL VERIFY ALL UTILITY LOCATIONS IN THE FIELD.
 - CONTRACTOR IS RESPONSIBLE FOR ADEQUATE BRACING OF WALLS AND/OR SHORING OF EXCAVATIONS DURING CONSTRUCTION.
 - THE CONTRACTOR SHALL REVIEW AND STAMP ALL SHOP DRAWINGS AND SUBMITTALS BEFORE SUBMISSION TO THE ENGINEER, THIS, PROVIDING ANY INFORMATION REQUIRED OF THE FABRICATOR SUCH AS FIELD DIMENSIONS, ELEVATIONS, ETC. OTHERWISE THE SHOP DRAWINGS OR SUBMITTALS WILL BE REJECTED UNTIL SUCH INFORMATION IS FURNISHED BY THE CONTRACTOR.
 - GENERAL BACKFILL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT, ASTM D1557.
 - UPON COMPLETION OF CONSTRUCTION THE CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS TO THE ENGINEER.
 - THE CONTRACTOR SHALL OBTAIN A DEMOLITION PERMIT FROM THE CODE ADMINISTRATION DIVISION FOR THE REMOVAL OF THE EXISTING BUILDING(S).
 - THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM THE ENGINEERING SERVICES DIVISION FOR WORK WITHIN THE ROW.
 - A TEMPORARY TRAFFIC CONTROL PLAN (TTCP) SHALL BE REQUIRED FOR ALL WORK IN AND ADJACENT TO THE TOWN ROW THAT WILL REQUIRE LANE CLOSURES. THE TTCP SHALL BE SUBMITTED TO THE ESD FOR REVIEW AND APPROVAL A MINIMUM OF TWO WEEKS PRIOR TO THE CONSTRUCTION ACTIVITIES THAT REQUIRE THE LANE CLOSURE(S).
 - ALL CONSTRUCTION WILL BE PERFORMED IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS. IF SOIL AND/OR GROUNDWATER CONTAMINATION IS ENCOUNTERED, IT WILL BE MANAGED IN ACCORDANCE WITH NH CODE OF ADMINISTRATIVE RULES, ENV-OR 600, CONTAMINATED SITE MANAGEMENT.

- 2 MATERIAL SPECIFICATIONS:**
- MATERIALS NOT SPECIFIED HEREIN SHALL MEET OR EXCEED NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDT) STANDARD SPECIFICATIONS FOR CONSTRUCTION.
 - GENERAL FILL SHALL BE A COMPACTABLE SAND OR GRAVEL, REASONABLY FREE FROM LOAM, SILT, CLAY AND ORGANIC MATERIALS AND SHALL HAVE 0-20 PERCENT PASSING THE NO. 100 SIEVE AND 40-100 PERCENT PASSING THE NO. 4 SIEVE.
 - BANK RUN GRAVEL SHALL BE FREE FROM LOAM, SILT, CLAY AND ORGANIC MATERIALS AND SHALL HAVE 100 PERCENT PASSING A 3 INCH SIEVE, 20-75 PERCENT PASSING A NO. 4 SIEVE, 0-12 PERCENT PASSING A NO. 100 SIEVE AND 0-6 PERCENT PASSING A NO. 200 SIEVE.
 - CRUSHED BANK RUN GRAVEL SHALL BE FREE FROM LOAM, SILT, CLAY AND ORGANIC MATERIALS AND SHALL HAVE 100 PERCENT PASSING A 2 INCH SIEVE, 90-100 PERCENT PASSING A 1/2 INCH SIEVE 30-60 PERCENT PASSING A NO. 4 SIEVE, 0-12 PERCENT PASSING A NO. 100 SIEVE AND 0-6 PERCENT PASSING A NO. 200 SIEVE.

EROSION CONTROL NOTES

- IF EROSION CONTROL MATTING IS USED ON SITE IT SHALL BE WOVEN ORGANIC MATERIAL (E.G. COCO MATTING) THE USE OF WELDED PLASTIC OR BIODEGRADABLE PLASTIC NETTING IN EROSION CONTROL MATTINGS IS NOT PERMITTED.
- CATCH BASINS: CARE SHOULD BE TAKEN TO ENSURE THAT SEDIMENTS DO NOT ENTER CATCH BASINS DURING EXCAVATION FOR PIPE TRENCHES, DITCHES AND SWALES. THE CONTRACTOR SHOULD PLACE NON-WOVEN GEOTEXTILE FABRIC FOR INLET PROTECTION OVER INLETS IN AREAS OF SOIL DISTURBANCE, WHICH ARE SUBJECT TO SEDIMENT CONTAMINATION.
- PLACE INLET PROTECTION DEVICES, IN CATCH BASINS AND MAINTAIN UNTIL ALL CONSTRUCTION ACTIVITIES HAVE CEASED AND THE SURROUNDING AREAS ARE WELL VEGETATED.
- ALL SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF INTO THEM.
- SCHEDULE OF WORK:**
THIS WORK IS ANTICIPATED TO BE PERFORMED IN FALL 2024. CONSTRUCTION IS ANTICIPATED TO BE COMPLETED BY SPRING 2025.
- ADEQUATE MEASURES SHOULD BE TAKEN TO MINIMIZE AIR BORNE DUST PARTICLES ARISING FROM SOIL DISTURBANCE AND CONSTRUCTION:
- DISTURBANCE OF AREAS SHOULD BE MINIMIZED AND NOT EXCEED 100,000 SQUARE FEET IN AREA AT ANY ONE TIME.
 - NO DISTURBED AREA SHOULD BE LEFT UNSTABILIZED FOR LONGER THAN TWO WEEKS DURING THE GROWING SEASON.
 - PERMANENT EROSION CONTROL FEATURES SHOULD BE INCORPORATED INTO THE PROJECT AT THE EARLIEST PRACTICABLE TIME. AS SPECIFIED ON THE CONTRACT PLANS.
 - WITHIN 14 DAYS OF COMPLETING WORK IN AN AREA, AND PRIOR TO ANTICIPATED RAIN EVENTS, APPLY HAY/STRAW MULCH AND TACKIFIER ON ALL DISTURBED SOIL AREAS. APPLICATION RATES OF 2 TONS OF STRAW OR HAY PER ACRE SHOULD BE USED TO PREVENT EROSION UNTIL VEGETATIVE COVER CAN BE ESTABLISHED. ALTERNATIVELY, APPLY WOOD CHIPS OR GROUND BARK MULCH 2 TO 6 INCHES DEEP AT A RATE OF 10 TO 20 TONS PER ACRE.
 - WHEN EROSION IS LIKELY TO BE A PROBLEM, GRUBBING OPERATION SHOULD BE SCHEDULED AND PERFORMED SUCH THAT GRADING OPERATION AND PERMANENT EROSION CONTROL FEATURES CAN FOLLOW IMMEDIATELY THEREAFTER.
 - AS WORK PROGRESSES, PATCH SEEDING AND MULCHING SHOULD BE DONE AS REQUIRED ON AREAS PREVIOUSLY TREATED TO MAINTAIN OR ESTABLISH PROTECTIVE COVER.
 - REMOVE ACCUMULATED SEDIMENTS AND DEBRIS WHEN SEDIMENT CONTAINMENT DEVICES REACH 33% CAPACITY.
- EROSION CONTROL IMPLEMENTATION SCHEDULE:**
THE FOLLOWING GENERAL SCHEDULE IDENTIFIES THE PROPOSED SOIL EROSION AND SEDIMENT CONTROL AND STORM WATER MANAGEMENT MEASURES THAT ARE TO BE IMPLEMENTED PRIOR TO AND DURING CONSTRUCTION:
- PERFORM LIMITED GRUBBING, STRIPPING AND SITE GRADING ONLY AS NEEDED TO COMPLETE IMMEDIATE WORK GOALS.
 - BLOCK STORM WATER FLOW AS NECESSARY TO INSTALL ALL STORM WATER STRUCTURES IN THE DRY.
 - INSTALL PERMANENT DRAIN SYSTEM.
 - INSTALL TEMPORARY SOIL STABILIZATION MEASURE INCLUDING SEED, MULCH, FERTILIZER, MATTING, ETC.
 - REDIRECT FLOWS INTO FINISHED STRUCTURES PRIOR TO FIL OPERATIONS.
 - PLACE HUMUS AND CONDUCT PERMANENT SEEDING AND MULCHING OF ALL DISTURBED GROUND.
- TEMPORARY STABILIZATION:**
EROSION CONTROL MEASURES SHALL BE IMPLEMENTED, AS WRITTEN HEREIN AND AS DEPICTED ON THE ACCOMPANYING PLAN, FROM THE COMMENCEMENT OF CONSTRUCTION ACTIVITY UNTIL FINAL STABILIZATION IS COMPLETE.
- TEMPORARY GRADING:** TEMPORARY GRADING DURING CONSTRUCTION SHOULD BE PERFORMED IN SUCH A MANNER TO FACILITATE MAXIMUM INFILTRATION OF STORMWATER AND MINIMIZE OR ELIMINATE STORMWATER RUNOFF FROM THE SITE.
- MULCH:** MULCHING WITH LOOSE HAY OR STRAW, AT A RATE OF 2 TONS PER ACRE, SHALL BE DONE IMMEDIATELY AFTER EACH AREA HAS BEEN FINAL GRADED. WHEN SEED FOR EROSION CONTROL IS BLOWN PRIOR TO PLACING THE MULCH, THE MULCH SHOULD BE PLACED ON THE SEEDING AREAS WITHIN 48 HOURS AFTER SEEDING.
- TACKIFIER:** PLACEMENT OF SOIL TACKIFIER HAS PROVEN TO BE AN EFFECTIVE METHOD OF PREVENTING SOIL AND ADHERING MULCH IN PLACE. THE PLACEMENT OF A SOIL TACKIFIER SHOULD BE PERFORMED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND SHOULD BE REAPPLIED AS NECESSARY TO CONTROL AIR BORNE DUST AND SOIL, AND MULCH LOSS UNTIL PERMANENT VEGETATION IS ESTABLISHED.
- ROAD CLEANING:** THE CONTRACTOR SHALL SWEEP ROADS DAILY, OR AS NEEDED TO MAINTAIN CLEAN PAVED SURFACES AT ALL CONSTRUCTION ACCESS/EGRESS POINTS.
- DUST CONTROL:** THE CONTRACTOR SHALL IMPLEMENT DUST CONTROL MEASURES AS NEEDED TO PREVENT AIRBORNE DUST PARTICLES FROM LEAVING THE SITE. DUST CONTROL MEASURES SHALL CONSIST OF USE OF A WATER TRUCK EQUIPPED WITH A SPRAY-BAR THAT DISPENSATES THE WATER EVENLY OVER THE SURFACE.
- PERMANENT STABILIZATION:** GRASS, TREES, SHRUBS AND MULCHED PLANTING BEDS WILL BE CONSTRUCTED AND MAINTAINED IN LOCATIONS AS SHOWN ON THE DRAWINGS TO STABILIZE AREAS NOT WITHIN THE PARKING LOT/BUILDING FOOTPRINT. THE CONTRACTOR WILL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL FOR ONE YEAR AFTER COMPLETION.
- AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- BASE COARSE 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 RIP RAP HAS BEEN INSTALLED.
 - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

- ALL ROADWAYS/PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- EXCAVATION DEWATERING:**
SHOULD EXCAVATION DEWATERING BE REQUIRED, THE CONTRACTOR MUST INSURE THAT ANY EXCAVATION DEWATERING DISCHARGES ARE NOT CONTAMINATED. NOTE: THE WATER IS CONSIDERED UNCONTAMINATED IF THERE IS NO GROUNDWATER CONTAMINATION WITHIN 1,000 FEET OF THE DISCHARGE.
- THE CONTRACTOR MUST TREAT ANY UNCONTAMINATED EXCAVATION DEWATERING AS NECESSARY TO REMOVE SUSPENDED SOLIDS AND TURBIDITY DURING CONSTRUCTION. THE DISCHARGES MUST BE SAMPLED AT A LOCATION PRIOR TO MIXING WITH STORM WATER OR STREAM FLOW AT LEAST ONCE PER WEEK DURING WEEKS WHEN DISCHARGES OCCUR. THE SAMPLES MUST BE ANALYZED FOR TOTAL SUSPENDED SOLIDS (TSS) AND MUST MEET MONTHLY AVERAGE AND MAXIMUM DAILY TSS LIMITATIONS OF 50 MILLIGRAMS PER LITER (MGL), RESPECTIVELY.
- STORMWATER POLLUTION PREVENTION PLAN:**
THE PROJECT IS SUBJECT TO THE REQUIREMENTS OF THE USEPA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION PERMIT WHICH INCLUDES A WRITTEN STORM WATER POLLUTION PREVENTION (SWPPP) PLAN FOR CONSTRUCTION. THE SWPPP PLAN SHALL OUTLINE DETAILED SPECIFICATIONS FOR IMPLEMENTATION, INSPECTION, AND MAINTENANCE OF ALL EROSION CONTROL MEASURES. THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR COMPLIANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN. SHALL BE RESPONSIBLE FOR AMENDING THE SWPPP ACCORDINGLY, AND SHALL BE RESPONSIBLE FOR ANY PENALTIES RESULTING FROM LACK OF COMPLIANCE.
- SPECIFICATIONS FOR TEMPORARY AND PERMANENT SEEDING:**
GRASS SEED MIXES SHALL CONSIST OF THE MIXTURES AS DETAILED IN THE FOLLOWING TABLES, WITH 98% PURITY:

EROSION CONTROL SEED		
SEED	BY % MASS	% GERMINATION (MIN)
WINTER RYE 80 (MIN)	80 (MIN)	85
RED FESCUE (CREEPING)	4 (MIN)	80
PERENNIAL GRASS	3 (MIN)	90
RED CLOVER	3 (MIN)	90
OTHER CROP GRASS	0.5 (MAX)	
NOXIOUS WEED SEED	0.5 (MAX)	
INERT MATTER	1.0 (MAX)	

PERMANENT SEED MIX		
SEED	BY % MASS	% GERMINATION (MIN)
RED FESCUE (CREEPING)	90	85
KENTUCKY BLUE	25	85
PERENNIAL RYE GRASS	10	90
RED TOP	10	85
LADINO CLOVER	5	85

WINTER CONSTRUCTION NOTES

- ALL PROPOSED POST-DEVELOPMENT 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 ELSEWHERE. MULCH REMAINING IN THE SPRING SHALL BE REMOVED AND REPLACED AT RATE OF 2 TONS PER ACRE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND TACKIFIER SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND.
- 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 WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
- AFTER OCTOBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3 OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.

REQUIRED PERMITS

- PROJECT REQUIRES REGISTRATION WITH THE GREAT BAY POLLUTION TRACKING AND ACCOUNTING PROGRAM (PTAP) DATABASE TO TRACK STORMWATER INFORMATION FOR THE PROJECT.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL APPLY FOR AN EXCAVATION PERMIT PER TOWN ORDINANCE ARTICLES 5-1-4 FOR WORK WITHIN THE "TOWN RIGHT" OF WAY OR ON TOWN-OWNED PROPERTY.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL APPLY FOR A DRIVEWAY PERMIT PER TOWN ORDINANCE ARTICLE 5-1-8 TO REPAIR, WIDEN, RECONSTRUCT, OR CONSTRUCT A DRIVEWAY.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL APPLY FOR A SEWER CONNECTION PERMIT FROM THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES).

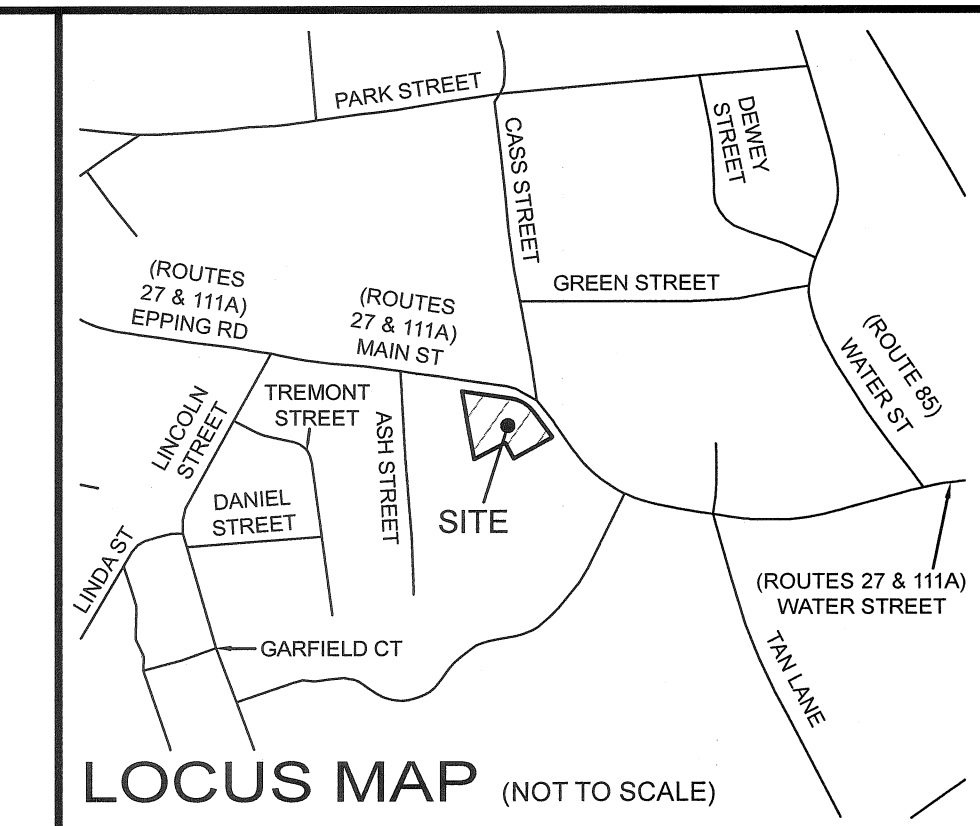
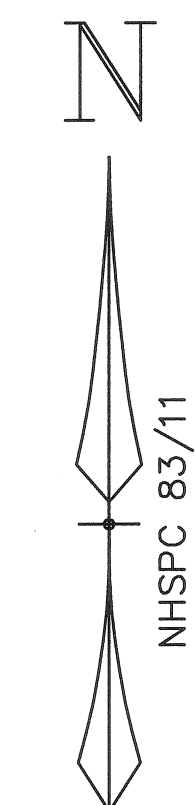
LANDSCAPING NOTES

- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH PLANTING OPERATIONS.
- LANDSCAPING CONTRACTOR SHALL RECEIVE SITE GRADE TO +/- 0.10 FOOT.
- ALL TREES OF THE SAME SPECIES AND SIZE SHALL HAVE MATCHING HEIGHT AND FORM UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL PLANT MATERIALS AND FINAL LOCATION OF ALL PLANT MATERIALS SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
- IF CONFLICTS ARISE BETWEEN SIZE OF AREAS AND PLANS, CONTRACTOR SHALL CONTACT OWNERS REPRESENTATIVE FOR IMMEDIATE RESOLUTION. FAILURE TO MAKE SUCH CONFLICTS KNOWN TO THE OWNER'S REPRESENTATIVE WILL RESULT IN CONTRACTORS LIABILITY TO RELOCATE THE MATERIALS.
- CONTRACTOR SHALL FURNISH PLANT MATERIALS FREE OF PESTS OR PLANT DISEASES. PRE-SELECTED OR "TAGGED" MATERIAL MUST BE INSPECTED BY THE CONTRACTOR AND CERTIFIED AS PEST AND DISEASE FREE. IT IS THE CONTRACTORS OBLIGATION TO WARRANTY ALL PLANT MATERIALS.
- ALL GROUND COVERS SHALL BE TRIANGULARLY SPACED UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF ANY EXISTING MATERIALS DAMAGED DURING PLANTING OPERATIONS.
- ALL LANDSCAPE AREAS SHALL BE COVERED WITH 2-INCHES OF ORGANIC BARK MULCH UNLESS OTHERWISE NOTED.
- AREAS SHOWN AS GROUND COVER AT THE BASE OF TREE AND SHRUB MATERIALS MUST CONFORM TO THE FOLLOWING CRITERIA: THERE SHALL BE NO GROUND COVER PLANT MATERIAL AT THE BASE OF THE TREE OR SHRUB AS FOLLOWS: A) 4-FOOT RADIUS AROUND EVERGREEN TREES, B) 3-FOOT RADIUS AROUND DECIDUOUS TREES, AND C) 2-FOOT RADIUS AROUND LARGE SHRUBS.
- FINAL PLACEMENT OF ALL PLANT MATERIALS SHALL BE SUBJECT TO APPROVAL OF OWNERS REPRESENTATIVE PRIOR TO FINAL PLACEMENT AND BACKFILL. CONTACT OWNERS REPRESENTATIVE 24-HOURS PRIOR TO PLACEMENT FOR APPROVAL.
- ALL DISTURBED AREAS, UNLESS OTHERWISE NOTED, TO BE LOAM, SEEDED, AND MULCHED.

PLAN REFERENCES:

1.) "STATE OF NEW HAMPSHIRE STATE HIGHWAY DEPARTMENT PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. E 240-E, SOUTH SIDE ROAD, TOWN OF EXETER," DATED 1933 AND ON FILE WITH THE STATE OF NEW HAMPSHIRE.

2.) "PLAN OF LAND FOR LAPERLE REALTY INC., EXETER, N.H.," DATED MARCH 1960 BY JOHN W. DURGIN CIVIL ENGINEERS. SEE RCRD PLAN #1553-246.



TAX MAP 63 LOT 257
DONALD P. &
KAREN J. FISCHER
61 MAIN STREET
EXETER, NH 03833
V. 6472 P. 2289

TAX MAP 63 LOT 258
KEVIN BLAIR
59 MAIN STREET
EXETER, NH 03833
V. 3280 P. 1577

TAX MAP 63 LOT 259
KEVIN BLAIR
59 MAIN STREET
EXETER, NH 03833
V. 3280 P. 1577

TAX MAP 63 LOT 260
JASON RICHARD &
SARAH ELIZABETH GOULET
49 MAIN STREET
EXETER, NH 03833
V. 5938 P. 277

TAX MAP 63 LOT 274
1 CASS STREET LLC
PO BOX 72
EXETER, NH 03833
V. 5476 P. 249

TAX MAP 72 LOT 211
PHILLIPS EXETER ACADEMY
20 MAIN STREET
EXETER, NH 03833
V. 1476 P. 263

TAX MAP 63 LOT 275
THE TIMOTHY D. UPTON REV. TR.
TIMOTHY D. UPTON, TRUSTEE
45 MAIN STREET
EXETER, NH 03833
V. 6455 P. 2058

TAX MAP 63 LOT 276
WILLIAM F. HOYT
82 WATSON ROAD
EXETER, NH 03833
V. 6380 P. 1687

TAX MAP 63 LOT 2
THE BETH P. GRIFFIN REV. TR. OF 2011
BETH P. GRIFFIN, TRUSTEE
1088 PORTSMOUTH AVENUE
GREENLAND, NH 03840
V. 6533 P. 2941

TAX MAP 73 LOT 305
PAUL MARKEY
10 ASH STREET
EXETER, NH 03833
V. 5473 P. 1337

TAX MAP 73 LOT 304
DAVID S. & ANN M. ESSENSA
44 MAIN STREET
EXETER, NH 03833
V. 2755 P. 2156

TAX MAP 73 LOT 303
EXETER SCHOOL DISTRICT
30 LINDEN STREET
EXETER, NH 03833
V. 2165 P. 470

SYMBOL LEGEND

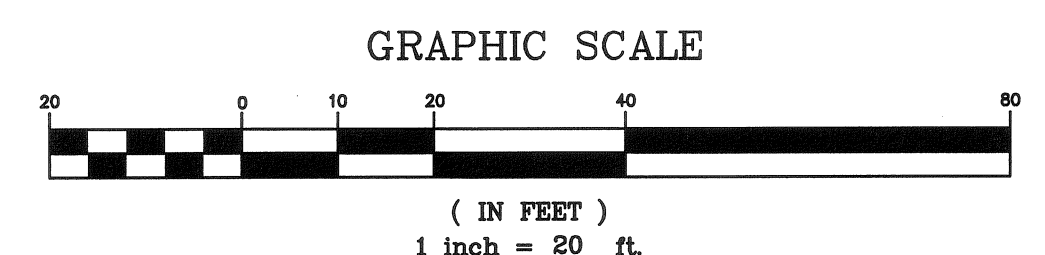
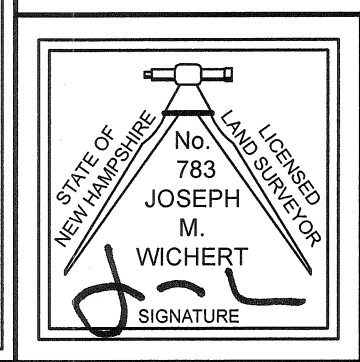
- IRON PIPE FOUND
- GRANITE BOUND OR POST W/ DH FOUND
- ⊞ CATCH BASIN
- ⊙ DRAIN MANHOLE
- ⊕ TELEPHONE MANHOLE
- ⊙ SEWER MANHOLE
- ⊕ WATER SHUTOFF
- ⊕ WATER VALVE
- ⊕ HYDRANT
- ⊕ GAS VALVE
- ⊕ UNKNOWN VALVE
- ⊕ UTILITY POLE
- ⊕ GUY WIRE
- ⊕ FENCE POST
- MW MONITORING WELL
- STOCKADE FENCE

I CERTIFY THAT THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE WITH A TOPCON GT 503. THE ERROR OF CLOSURE ON ALL LOT LINES WITHIN AND BORDERING THE SUBJECT PROPERTY IS BETTER THAN 1 IN 10,000.

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

I HEREBY CERTIFY THAT A COPY OF THIS PLAN HAS BEEN FILED WITH THE EXETER PLANNING BOARD IN ACCORDANCE WITH RSA 676:18(V).

9 AUG. 2024
DATE



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NO.	DATE	DESCRIPTION	BY
1	8/7/24	ADD SEWER INVERTS	JMW

**EXISTING CONDITIONS PLAN FOR
ESTHER JIN
TAX MAP 63 LOT 1
46 MAIN STREET
EXETER, NEW HAMPSHIRE**

DATE: 13 MARCH, 2024 SCALE: 1" = 20'

SURVEY PLAN BY:

802 AMHERST STREET
MANCHESTER, NH 03104
TEL: (603) 647-4282 OR 736-8203
FAX: (603) 623-1910
WEB: WWW.JMWLLS.COM

Joseph M. Wichert
LLS, INC.

LAND SURVEYOR & SEPTIC SYSTEM DESIGNER

SHEET S1 SHEET 1 OF 1 F.B. -- P. - JOB #2024116

REVISION HISTORY
1. REVISED IN RESPONSE TO TOWN COMMENTS (08/12/2024)

ISSUED FOR
PERMITTING

ALL DOCUMENTS PREPARED BY WILCOX & BARTON, INC. ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY WILCOX & BARTON, INC. FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO WILCOX & BARTON, INC. OWNER SHALL INDEMNIFY AND HOLD HARMLESS WILCOX & BARTON, INC. FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

OWNER
**JIN ESTHER
2 TWIN POND CIRCLE
EXETER, NH**

DEVELOPER/APPLICANT
**MR. PATRICK HOUGHTON
210 LEDGEWOOD RD
MANCHESTER, NH**

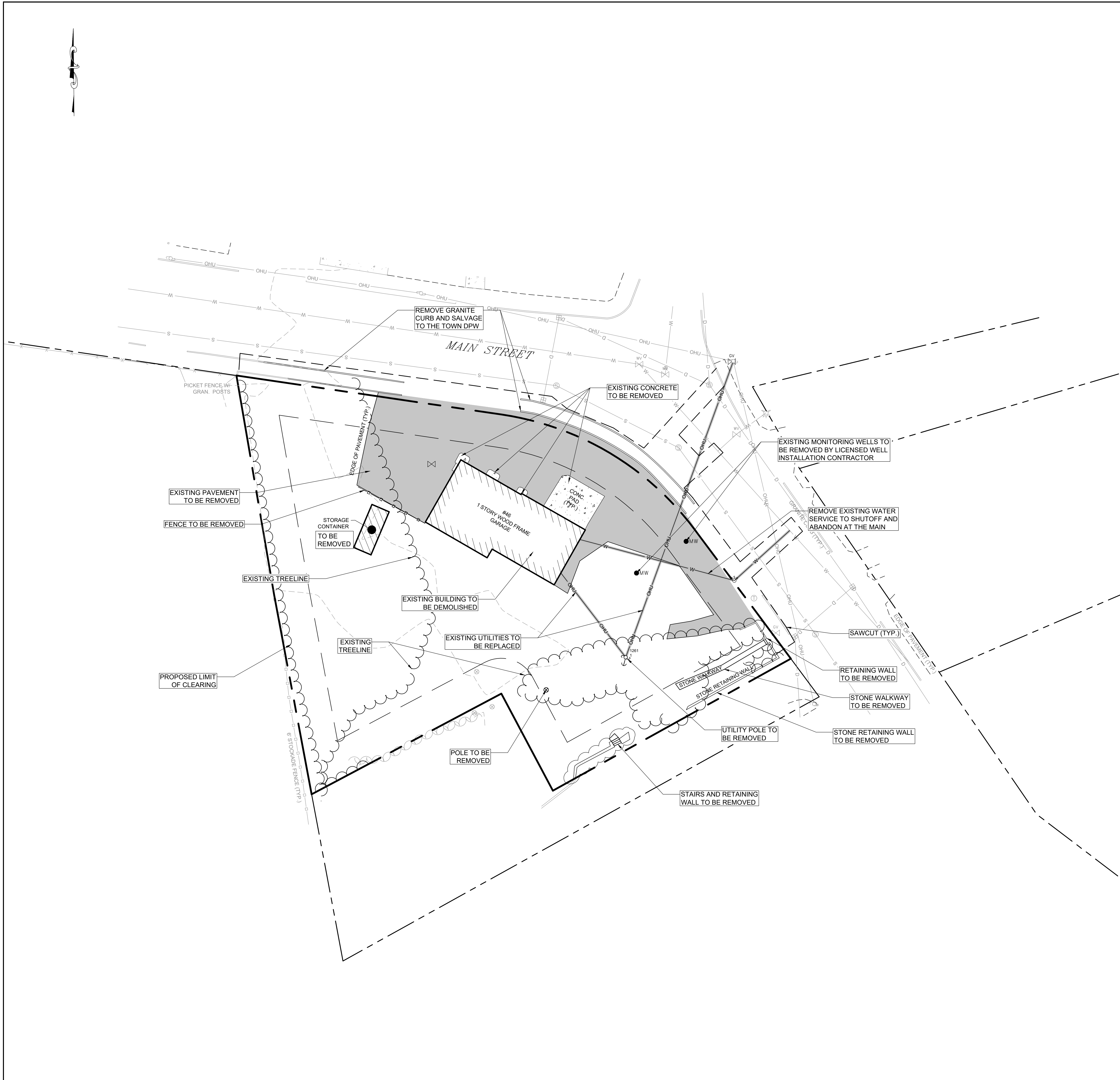
SITE
**46 MAIN RESIDENTIAL
DEVELOPMENT
EXETER, NH 03833**

TAX MAP 63, LOT 1

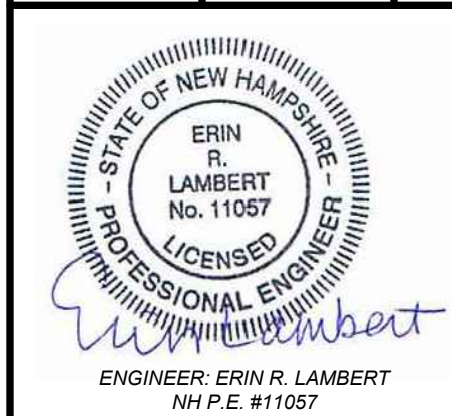
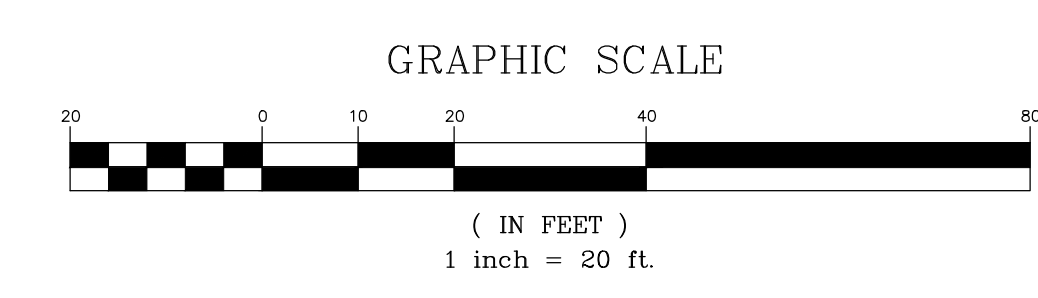
DRAWING TITLE
DEMOLITION PLAN

SCALE 1" = 20'	DATE 08/12/2024
DRAFTED BY DRW	CHECKED BY ERL
PROJECT MGR ERL	PROJECT NO. HOUG0001

SHEET NO.
C1.1
04 OF 15



- PLAN NOTES:**
- EXISTING CONDITIONS, TOPOGRAPHICAL INFORMATION, NORTH ORIENTATION, AND COORDINATE VALUES DEPICTED ON THESE DRAWINGS ARE BASED ON PLANS TITLED "EXISTING CONDITIONS PLAN" PREPARED FOR PATRICK HOUGHTON, DATED MAY 24, 2024, PROVIDED TO WILCOX & BARTON, INC. BY JOSEPH M. WICHERT, L.L.S., INC.
 - SEE SHEET C0.2 LEGEND AND NOTES FOR PROJECT LEGEND AND GENERAL NOTES
 - PRIOR TO DEMOLITION, A LICENSED PROFESSIONAL WILL PREPARE A BUILDING MATERIAL SURVEY TO IDENTIFY AND QUANTIFY HAZARDOUS BUILDING MATERIALS. A LICENSED ABATEMENT CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL MATERIALS IDENTIFIED IN THE REPORT IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS.
 - DISPOSE OF AND/OR RECYCLE ALL SITE AND BUILDING DEMOLITION DEBRIS AT AN APPROVED OFF-SITE FACILITY.
 - THE SIDEWALK CURRENTLY HAS A DOUBLE GRANITE CURBLINE. ANY EXCESS GRANITE CURB FROM THE SIDEWALK RECONSTRUCTION SHALL BE RETURNED TO THE TOWN OF EXETER.



REVISION HISTORY
1. REVISED IN RESPONSE TO TOWN COMMENTS (08/12/2024).

ISSUED FOR
PERMITTING

ALL DOCUMENTS PREPARED BY WILCOX & BARTON, INC. ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY WILCOX & BARTON, INC. FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO WILCOX & BARTON, INC. OWNER SHALL INDEMNIFY AND HOLD HARMLESS WILCOX & BARTON, INC. FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

OWNER
**JIN ESTHER
2 TWIN POND CIRCLE
EXETER, NH**

DEVELOPER/APPLICANT
**MR. PATRICK HOUGHTON
210 LEDGEWOOD RD
MANCHESTER, NH**

SITE
**46 MAIN RESIDENTIAL
DEVELOPMENT
EXETER, NH 03833
TAX MAP 63, LOT 1**

DRAWING TITLE
SITE PLAN

SCALE	DATE		
1" = 20'	08/12/2024		
DRAFTED BY	CHECKED BY	PROJECT MGR	PROJECT NO.
DRW	ERL	ERL	HOUG0001

SHEET NO.
C1.2
05 OF 15

ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

ZONING NOTES:

MAP/LOT	63/1		
PROPERTY ADDRESS	46 MAIN STREET EXETER, NH 03833		
OWNER	JIN ESTHER		
DEED REGISTRATION	V. 6493 / P. 2725		
ZONE	R-2 SINGLE FAMILY RESIDENTIAL DISTRICT		
FACILITY USE	MULTI-FAMILY RESIDENTIAL [1]		
LOT SIZE	REQUIRED	EXISTING	PROPOSED
	MIN. 26,389 SF [2] (0.6058 AC)	26,389 SF (0.6058 AC)	26,389 SF (0.6058 AC)
OPEN SPACE	MIN. 10,556 SF (40%)	18,500 SF (70.1%)	15,231 SF (57.7%)
	MAX. 6,597 SF (25%)	1,892 SF (7.2%)	4,034 SF (15.3%)
FRONTAGE	MIN. 100 LF	280 LF	280 LF
	MAX. 35 FT	N/A	35
BUILDING SETBACKS	FRONT	MIN. 14 LF [1]	21.5 LF
	SIDE	MIN. 15 LF	36.7 LF
	REAR	MIN. 25 LF	N/A
	REAR	MIN. 25 LF	N/A

VARIANCES

1. ON NOVEMBER 21, 2023, THE ZONING BOARD OF ADJUSTMENT VOTED TO APPROVE A VARIANCE FROM ARTICLE 4, SECTION 4.2 SCHEDULE I: PERMITTED USES TO ALLOW THE PROPOSED CONSTRUCTION OF MULTI-FAMILY UNITS ON THE PROPERTY LOCATED AT 46 MAIN STREET; AND THE VARIANCE FROM ARTICLE 4, SECTION 4.3 SCHEDULE II: DENSITY AND DIMENSIONAL REGULATIONS - RESIDENTIAL SEEKING RELIEF FROM THE MINIMUM FRONT YARD SETBACK REQUIREMENT, AS PRESENTED.

2. ON FEBRUARY 20, 2024, THE ZONING BOARD OF ADJUSTMENT APPROVED A VARIANCE FROM ARTICLE 4, SECTION 4.3 SCHEDULE II TO EXCEED THE DENSITY REQUIREMENTS TO PERMIT FOUR (4) UNITS ON A 26,000 +/- SQUARE FOOT LOT WHERE A MINIMUM LOT SIZE OF 15,000 SQ. FT. IS REQUIRED FOR EACH SINGLE FAMILY DWELLING AND 24,000 SQ. FT. IS REQUIRED FOR EACH DUPLEX, AS PRESENTED.

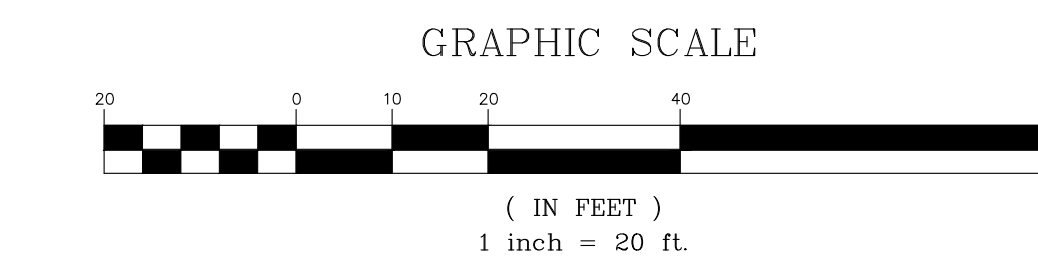
PARKING REQUIREMENT

2 SPACES PER UNIT + 2 VISITOR SPACES
REQUIRED PARKING = 10 SPACES
PROVIDED PARKING = 12 SPACES

[1] A WAIVER FROM THE SITE PLAN REGULATION SECTION 9.3.2 HAS BEEN REQUESTED FROM THE TOWN OF EXETER PLANNING BOARD TO CONNECT TO THE EXISTING MUNICIPAL STORM DRAIN SYSTEM.

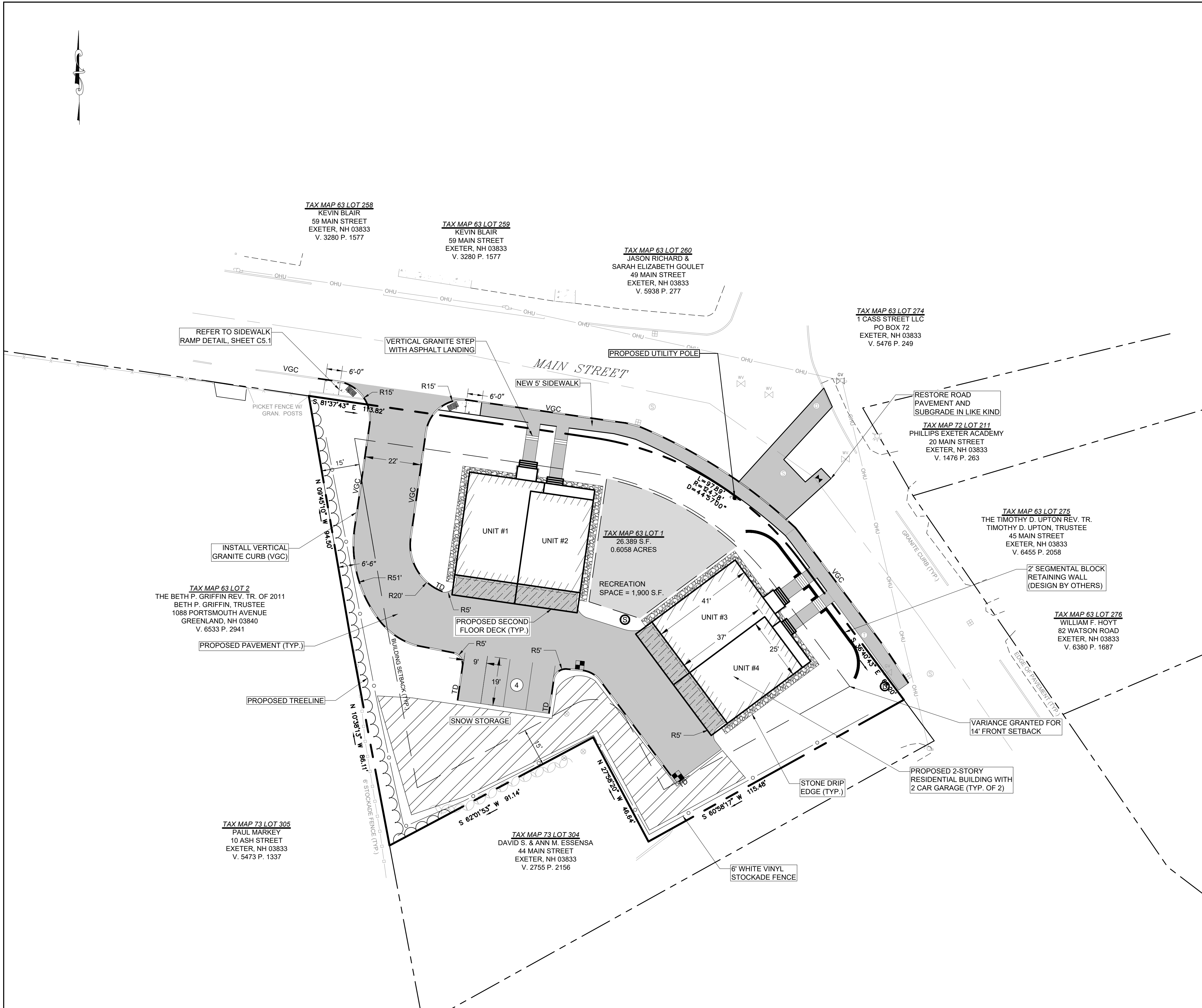
PLAN NOTES:

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- BUILDING FOOTPRINT REPRESENTS A FLOOR PLAN PROVIDED TO WILCOX & BARTON, INC. BY ART FORM ARCHITECTURE, INC. ON JULY 8, 2024. REFER TO ARCHITECTURAL/STRUCTURAL PLANS FOR FOUNDATION AND BUILDING DIMENSIONS.
- SEE SHEET C0.2 LEGEND AND NOTES FOR PROJECT LEGEND AND GENERAL NOTES.
- THE LANDOWNER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL WETLANDS REGULATIONS, INCLUDING ANY PERMITTING AND SETBACK REQUIREMENTS REQUIRED UNDER THESE REGULATIONS.
- ALL WATER, SEWER, ROAD (INCLUDING PARKING LOT), AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 9.5 GRADING, DRAINAGE, AND EROSION & SEDIMENT CONTROL AND THE STANDARD SPECIFICATION FOR CONSTRUCTION OF PUBLIC UTILITIES IN EXETER, NEW HAMPSHIRE.
- THE PROPERTY IS LOCATED IN ZONE X OUTSIDE THE 0.2% CHANCE FLOODPLAIN BASED ON THE FEMA FIRM MAP 33015C0402E DATED MAY 17, 2005.



APPROVED
TOWN PLANNING BOARD
TOWN OF EXETER, NEW HAMPSHIRE

Chairman _____ Date _____



TAX MAP 63 LOT 258
KEVIN BLAIR
59 MAIN STREET
EXETER, NH 03833
V. 3280 P. 1577

TAX MAP 63 LOT 259
KEVIN BLAIR
59 MAIN STREET
EXETER, NH 03833
V. 3280 P. 1577

TAX MAP 63 LOT 260
JASON RICHARD &
SARAH ELIZABETH GOULET
49 MAIN STREET
EXETER, NH 03833
V. 5938 P. 277

TAX MAP 63 LOT 274
1 CASS STREET LLC
PO BOX 72
EXETER, NH 03833
V. 5476 P. 249

TAX MAP 72 LOT 211
PHILLIPS EXETER ACADEMY
20 MAIN STREET
EXETER, NH 03833
V. 1476 P. 263

TAX MAP 63 LOT 275
THE TIMOTHY D. UPTON REV. TR.
TIMOTHY D. UPTON, TRUSTEE
45 MAIN STREET
EXETER, NH 03833
V. 6455 P. 2058

TAX MAP 63 LOT 276
WILLIAM F. HOYT
82 WATSON ROAD
EXETER, NH 03833
V. 6380 P. 1687

TAX MAP 63 LOT 1
26,389 S.F.
0.6058 ACRES
RECREATION SPACE = 1,900 S.F.

TAX MAP 63 LOT 2
THE BETH P. GRIFFIN REV. TR. OF 2011
BETH P. GRIFFIN, TRUSTEE
1088 PORTSMOUTH AVENUE
GREENLAND, NH 03840
V. 6533 P. 2941

TAX MAP 73 LOT 305
PAUL MARKEY
10 ASH STREET
EXETER, NH 03833
V. 5473 P. 1337

TAX MAP 73 LOT 304
DAVID S. & ANN M. ESSENSA
44 MAIN STREET
EXETER, NH 03833
V. 2755 P. 2156

REVISION HISTORY
1. REVISED IN RESPONSE TO TOWN COMMENTS (08/12/2024).

ISSUED FOR
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OWNER
**JIN ESTHER
2 TWIN POND CIRCLE
EXETER, NH**

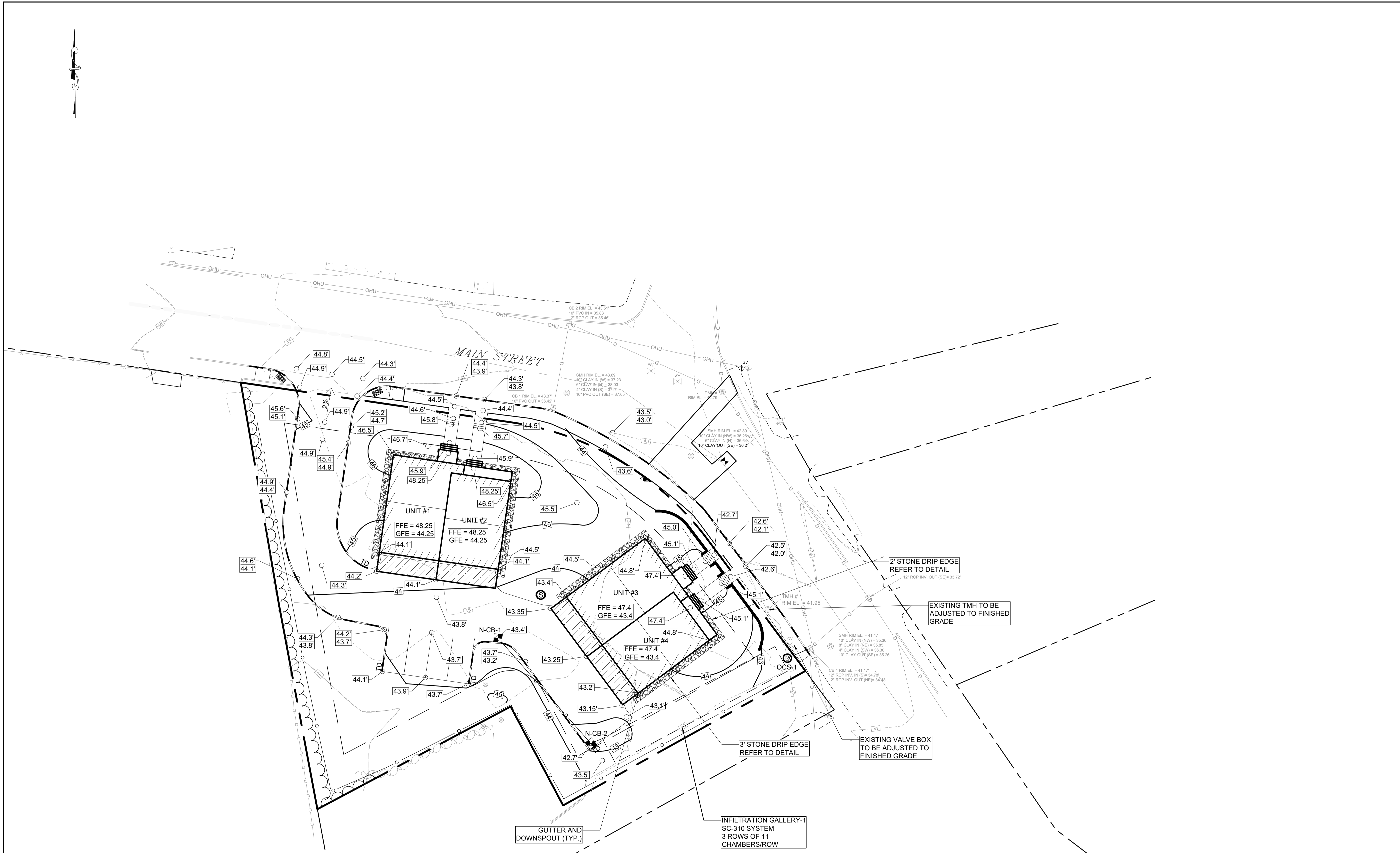
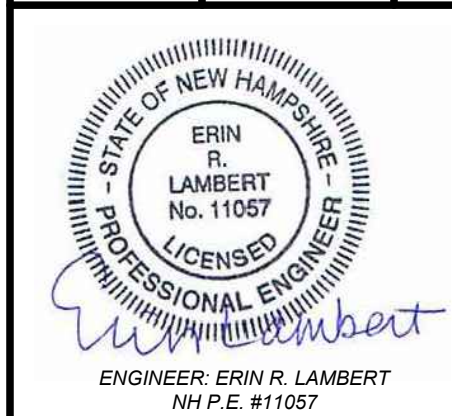
DEVELOPER/APPLICANT
**MR. PATRICK HOUGHTON
210 LEDGEWOOD RD
MANCHESTER, NH**

SITE
**46 MAIN RESIDENTIAL
DEVELOPMENT
EXETER, NH 03833
TAX MAP 63, LOT 1**

DRAWING TITLE
**GRADING &
DRAINAGE PLAN**

SCALE 1" = 20'	DATE 08/12/2024
DRAFTED BY DRW	CHECKED BY ERL
PROJECT MGR ERL	PROJECT NO. HOUG0001

SHEET NO.
C1.3
06 OF 15

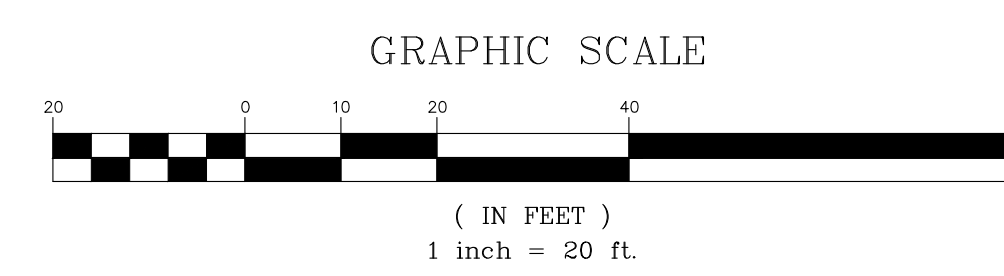


DRAINAGE SCHEDULE:

- | | |
|--|---|
| N-CB-1 (4' SUMP)
RIM = 43.4
INV OUT = 40.4
L = 54.5'
S = 0.0127 FT/FT
12" HDPE | OCS-1 (WITH INTERNAL WEIR PLATE)
RIM = 42.0'
INV OUT = 40.0' (6" ORIFICE)
INV OUT = 40.6' (1' X 0.5' WEIR)
INV OUT = 37.5' (12" CULVERT)
L = 13'
S = 0.025 FT/FT
12" HDPE |
| N-CB-2 (4' SUMP)
RIM = 42.7
INV IN = 39.7
INV OUT = 39.6
L = 6'
S = 0.00 FT/FT
12" HDPE | |
| CB-4 (4' SUMP)
RIM = 41.17
INV IN = 34.79
INV OUT = 34.48
L = 32'
12" RCP | |

PLAN NOTES:

- REFER TO SURVEYOR'S PLAN FOR BASE PLAN REFERENCES AND ADDITIONAL NOTES.
- ALL ELEVATIONS SHOWN ARE IN REFERENCE TO THE SURVEY PLAN AND MUST BE VERIFIED BY THE GENERAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
- CONTRACTOR SHALL NOTIFY OWNER & ENGINEER IMMEDIATELY IF SITE CONDITIONS DIFFER FROM WHAT IS SHOWN ON PLAN.
- SPOT ELEVATIONS SHOWN AT BUILDING CORNERS ARE PROPOSED GROUND ELEVATIONS.
- FINISH WALK AND CURB ELEVATIONS SHALL BE 6" ABOVE FINISH PAVEMENT.
- ALL STORM DRAIN PIPING WITH LESS THAN 3.0 FEET OF COVER SHALL BE OVERLAIN WITH 2" THICK RIGID INSULATION FOR THE FULL WIDTH OF PIPE TRENCH.



REVISION HISTORY
1. REVISED IN RESPONSE TO TOWN COMMENTS (08/12/2024).

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EXETER, NH**

DEVELOPER/APPLICANT

**MR. PATRICK HOUGHTON
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MANCHESTER, NH**

SITE

**46 MAIN RESIDENTIAL
DEVELOPMENT
EXETER, NH 03833**

TAX MAP 63, LOT 1

DRAWING TITLE

UTILITY PLAN

SCALE	DATE		
1" = 20'	08/12/2024		
DRAFTED BY	CHECKED BY	PROJECT MGR	PROJECT NO.
DRW	ERL	ERL	HOUG0001

ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

C1.4

07 OF 15

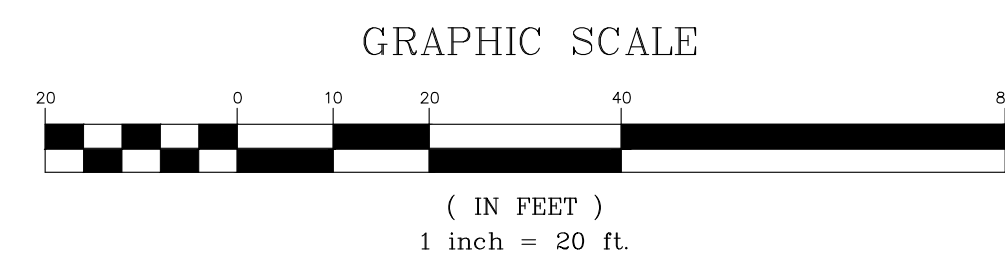
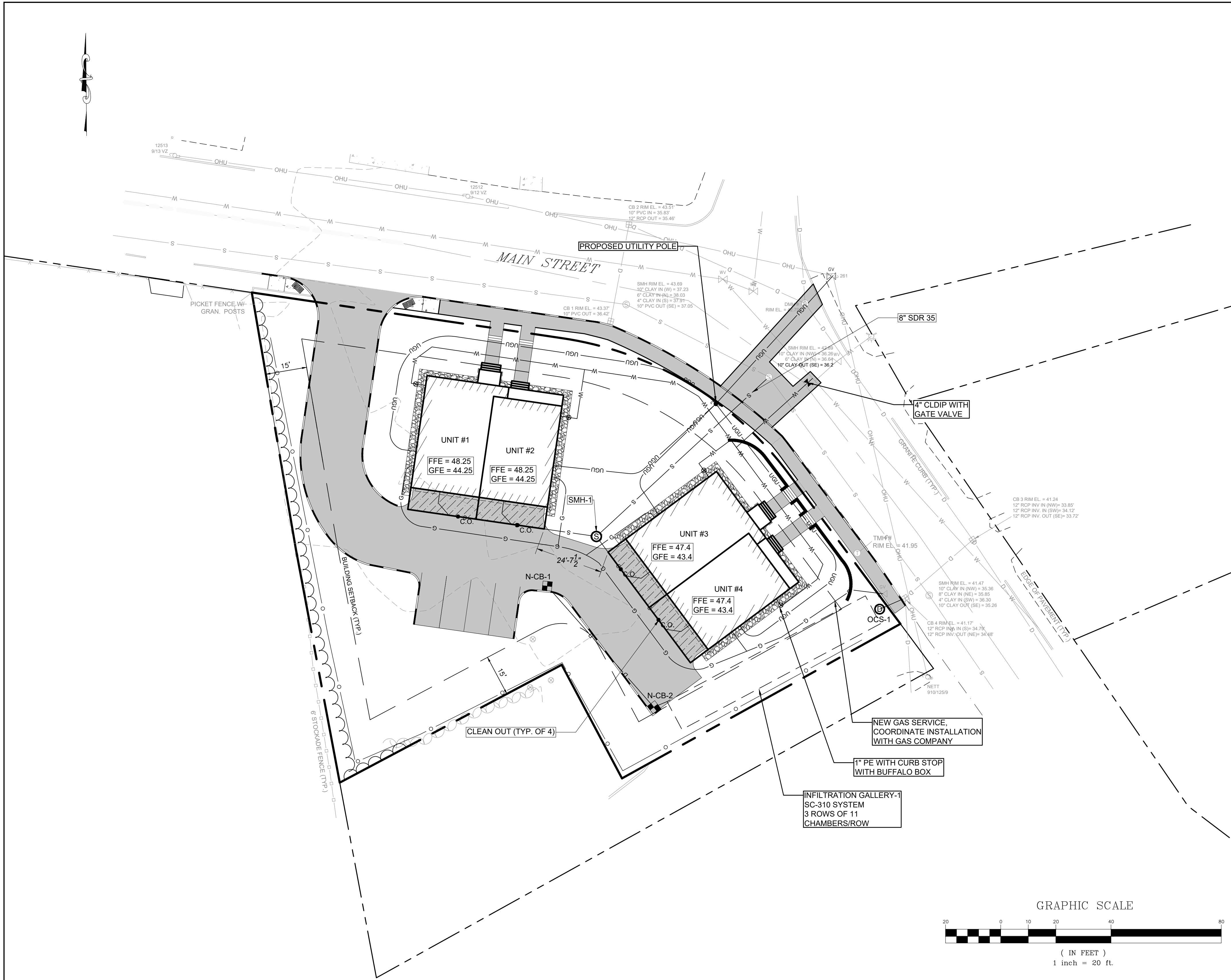
PLAN NOTES:

- REFER TO SURVEYOR'S PLAN, FOR BASE PLAN REFERENCES AND ADDITIONAL NOTES.
- ALL ELEVATIONS SHOWN ARE IN REFERENCE TO THE SURVEY PLAN AND MUST BE VERIFIED BY THE GENERAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
- THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION.
- LOCATIONS AND ELEVATIONS OF UTILITIES ARE APPROXIMATE ONLY AND ARE BASED ON RECORDS FROM THE UTILITY COMPANIES AND FIELD MEASUREMENTS OF VISIBLE STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO CONSTRUCTION AND WILL NOTIFY ENGINEER AND OWNER IMMEDIATELY OF ANY CONFLICTS.
- THERE WILL BE NO PHYSICAL CONNECTION BETWEEN A PUBLIC OR PRIVATE POTABLE WATER SUPPLY SYSTEM AND A SEWER OR SEWER APPURTENANCE WHICH WOULD PERMIT THE PASSAGE OF SEWAGE OR POLLUTED WATER INTO THE POTABLE SUPPLY. NO WATER PIPE WILL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SEWER OR SEWER MANHOLE. NO SEWER WILL BE LOCATED WITHIN THE WELL PROTECTIVE RADII ESTABLISHED IN ENV-W3 300 FOR ANY PUBLIC WATER SUPPLY WELLS OR WITHIN 100 FEET OF ANY PRIVATE WATER SUPPLY WELL. SEWERS WILL BE LOCATED AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. A DEVIATION FROM THE SEPARATION REQUIREMENTS WILL BE ALLOWED WHERE NECESSARY TO AVOID CONFLICT WITH SUBSURFACE STRUCTURES, UTILITY CHAMBERS, AND BUILDING FOUNDATIONS, PROVIDED THAT THE SEWER IS CONSTRUCTED IN ACCORDANCE WITH THE FORCE MAIN CONSTRUCTION REQUIREMENTS SPECIFIED IN ENV-WQ 704.07. WHENEVER SEWERS MUST CROSS WATER MAINS, THE SEWER WILL BE CONSTRUCTED AS FOLLOWS:
 - VERTICAL SEPARATION OF THE SEWER AND WATER MAIN WILL BE NOT LESS THAN 18 INCHES, WITH WATER ABOVE SEWER; AND
 - SEWER PIPE JOINTS WILL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM THE WATER MAIN.
- THE CONTRACTOR WILL PROVIDE A MINIMUM NOTICE OF FOURTEEN (14) DAYS TO ALL CORPORATIONS, COMPANIES AND/OR LOCAL AUTHORITIES OWNING OR HAVING A JURISDICTION OVER UTILITIES RUNNING TO, THROUGH OR ACROSS PROJECT AREAS PRIOR TO DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
- THE LOCATION, SIZE, DEPTH AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES WILL BE TO THE STANDARDS AND REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY (ELECTRIC, TELEPHONE, CABLE TELEVISION, FIRE ALARM, GAS, WATER, AND SEWER).
- ALL CONSTRUCTION WILL CONFORM TO THE TOWN STANDARDS AND REGULATIONS, UNLESS OTHERWISE SPECIFIED. ALL CONSTRUCTION ACTIVITIES WILL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
- THE CONTRACTOR IS TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITY STUBS PRIOR TO CONSTRUCTION AND DISCONNECT ALL EXISTING SERVICE CONNECTIONS AT THEIR RESPECTIVE MAINS IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANY'S STANDARDS AND SPECIFICATIONS. ENGINEER TO BE NOTIFIED.
- AS-BUILT PLANS WILL BE SUBMITTED TO ENGINEERING SERVICES DIVISION.
- INVERTS AND SHELVES: MANHOLES WILL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION. THE INVERTS WILL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES WILL BE CONSTRUCTED TO THE ELEVATION OF THE THROUGH CHANNEL UNDERLAYMENT OF INVERT, AND SHELF WILL CONSIST OF GRADE SS HARD BRICK MASONRY.
- FRAMES AND COVERS: MANHOLE FRAMES AND COVERS WILL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30 INCH DIA. CLEAR OPENING. THE WORD "SEWER" OR "DRAIN", AS APPROPRIATE, WILL BE CAST INTO THE CENTER OF THE UPPER FACE OF EACH COVER WITH RAISED, 3" LETTERS.
- WILLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING HS LOADS.
- CONTRACTOR WILL PLACE 2" WIDE METAL WIRE IMPREGNATED GREEN PLASTIC WARNING TAPE OVER ENTIRE LENGTH OF ALL GRAVITY SEWERS, SERVICES, AND FORCE MAINS.
- ALL SANITARY STRUCTURE INTERIOR DIAMETERS (4" MIN) WILL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS.
- PROPOSED RIM ELEVATIONS OF SANITARY AND DRAIN MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES. ADJUST ALL OTHER RIM ELEVATIONS OF MANHOLES, WATER GATES, GAS GATES AND OTHER UTILITIES TO FINISH GRADE.
- ALL SANITARY SEWER SERVICE LATERALS, FOR FUTURE RESIDENTIAL CONNECTION, WILL END AT THE LIMITS OF THE R.O.W., AS SHOWN ON PLANS AND WILL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT END.
- DIMENSIONS ARE SHOWN TO CENTERLINE OF PIPE OR FITTING.
- ALL GRAVITY SEWER PIPE, MANHOLES, AND FORCE MAINS WILL BE TESTED ACCORDING TO NHDES STANDARDS OF DESIGN AND CONSTRUCTION FOR SEWAGE AND WASTEWATER TREATMENT FACILITIES, CHAPTER ENV-WQ 700, CONFORMING TO THE FOLLOWING MIN. CRITERIA:

ENV-WQ 704.06 GRAVITY SEWER PIPE TESTING:
GRAVITY SEWERS WILL BE TESTED FOR WATER TIGHTNESS BY USE OF LOW-PRESSURE AIR TESTS CONFORMING WITH ASTM F1417-92(2005) OR UNI-BELL PVC PIPE ASSOCIATION UNI-B-6. LINES WILL BE CLEANED AND VISUALLY INSPECTED AND TRUE TO LINE AND GRADE. DEFLECTION TESTS WILL TAKE PLACE AFTER 30 DAYS FOLLOWING INSTALLATION.

ENV-WQ 704.09 FORCE MAIN AND LOW PRESSURE SEWER TESTING:
WILL BE TESTED IN ACCORDANCE WITH SECTION 4 OF AWWA C600-05, AND AT A PRESSURE EQUAL TO THE GREATER OF 150 PERCENT OF THE DESIGN OPERATING TOTAL DYNAMIC HEAD OR AT LEAST 100 PSI.

ENV-WQ 704.17 (a) SEWER MANHOLES:
WILL BE TESTED FOR LEAKAGE USING A VACUUM TEST. TESTING WILL BE CONDUCTED PRIOR TO PLACEMENT OF SHELVES AND INVERTS.
- SEWERS WILL BE BURIED TO A MINIMUM DEPTH OF 6 FEET BELOW GRADE IN ALL ROADWAY LOCATIONS, AND TO A MINIMUM DEPTH OF 4 FEET BELOW GRADE IN ALL CROSS-COUNTRY LOCATIONS. PROVIDE TWO-INCHES OF R-10 FOAM BOARD INSULATION 2-FOOT WIDE TO BE INSTALLED 6-INCHES OVER SEWER PIPE IN AREAS WHERE DEPTH IS NOT ACHIEVED. A NHDES WAIVER IS NEEDED IF THE MINIMUM REQUIRED DEPTH CANNOT BE MET.
- SEWER AND WATER INFRASTRUCTURE ON PRIVATE PROPERTY IS TO REMAIN PRIVATE, HOWEVER, THE TOWN RESERVES THE RIGHT TO ENTER THE PROPERTY IN ORDER TO INSPECT, REPAIR AND/OR TERMINATE INDIVIDUAL SEWER OR WATER SERVICES (AT OWNER'S EXPENSE).
- CONTRACTOR WILL SET RIMS OF NEW SANITARY SEWER MANHOLES TO EXISTING FINISHED GRADE FOR THE WINTER SEASON. RIMS WILL BE RAISED IN THE SPRING PRIOR TO PLACEMENT OF 1" BITUMINOUS OVERLAY.
- SERVICE LATERAL LOCATIONS SHOWN ARE APPROXIMATE AND MAY BE ADJUSTED IN THE FIELD BASED ON INPUT FROM TOWN INSPECTOR AND/OR PROJECT CLERK OF THE WORKS.
- REFER TO SHEET C0.2 FOR GENERAL NOTES AND LEGEND.
- THE CONTRACTOR MUST ALWAYS HAVE AN EMPLOYEE WITH AN EXETER UTILITY INSTALLER LICENSE ONSITE DURING INSTALLATION OF UTILITIES WITHIN THE TOWN'S ROW.



SEWER SCHEDULE:

<p>UNIT #1 INV OUT = 39.92 LENGTH = 62.1 LF, 4" SDR 35 SLOPE = 0.02 FT/FT</p> <p>UNIT #2 INV OUT = 39.46 LENGTH = 9.9 LF, 4" SDR 35 SLOPE = 0.02 FT/FT</p> <p>UNIT #3 INV OUT = 39.38 LENGTH = 9.7 LF, 4" SDR 35 SLOPE = 0.02 FT/FT</p> <p>UNIT #4 INV OUT = 39.67 LENGTH = 49.6 LF, 4" SDR 35 SLOPE = 0.02 FT/FT</p>	<p>SMH #1 RIM = 43.4 INV IN = 38.68 (W) INV IN = 38.68 (SE) INV OUT = 38.58 8" SDR 35, LENGTH = 82 LF SLOPE = 0.006 FT/FT</p> <p>*ADD INSULATION WHERE COVER OVER SEWER IS LESS THAN 6" BELOW PAVEMENT</p> <p>*WHERE WATER AND SEWER HAVE < 10' OF HORIZONTAL SEPARATION, SERVICE = SCHEDULE 26</p>
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TAX MAP 63, LOT 1**

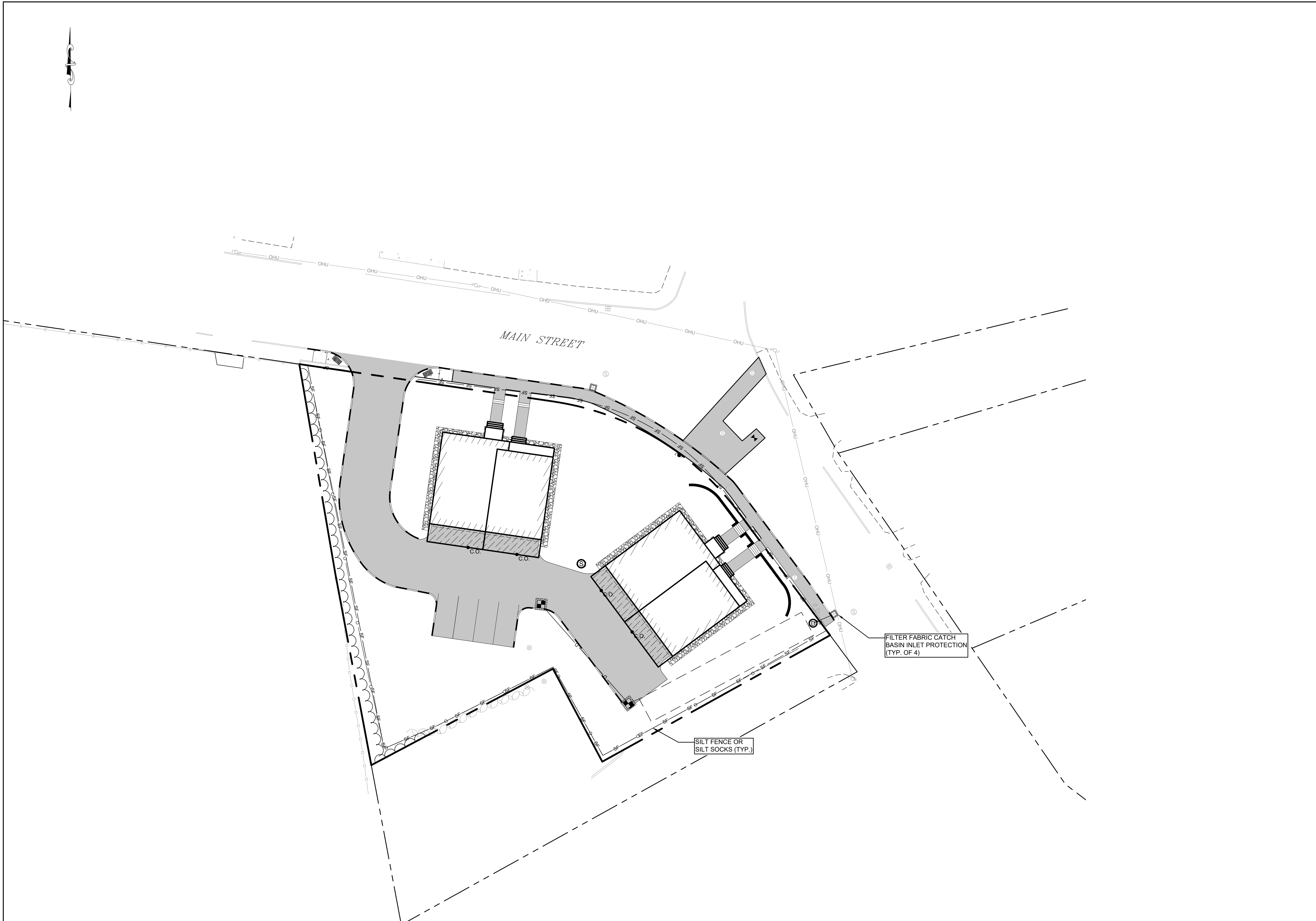
DRAWING TITLE
**EROSION
CONTROL PLAN**

SCALE 1" = 20' DATE 08/12/2024

DRAFTED BY DRW CHECKED BY ERL PROJECT MGR ERL PROJECT NO. HOUG0001

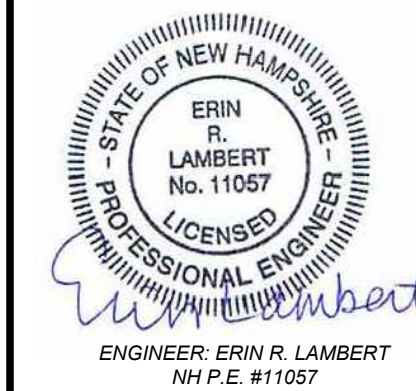
SHEET NO.

C1.5
08 OF 15



PLAN NOTES:
1. SEE SHEET C0.2 NOTES AND LEGEND FOR ADDITIONAL EROSION CONTROL NOTES.

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.



ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

REVISION HISTORY
1. REVISED IN RESPONSE TO TOWN COMMENTS (08/12/2024).

ISSUED FOR
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OWNER
**JIN ESTHER
2 TWIN POND CIRCLE
EXETER, NH**

DEVELOPER/APPLICANT
**MR. PATRICK HOUGHTON
210 LEDGEWOOD RD
MANCHESTER, NH**

SITE
**46 MAIN RESIDENTIAL
DEVELOPMENT
EXETER, NH 03833
TAX MAP 63, LOT 1**

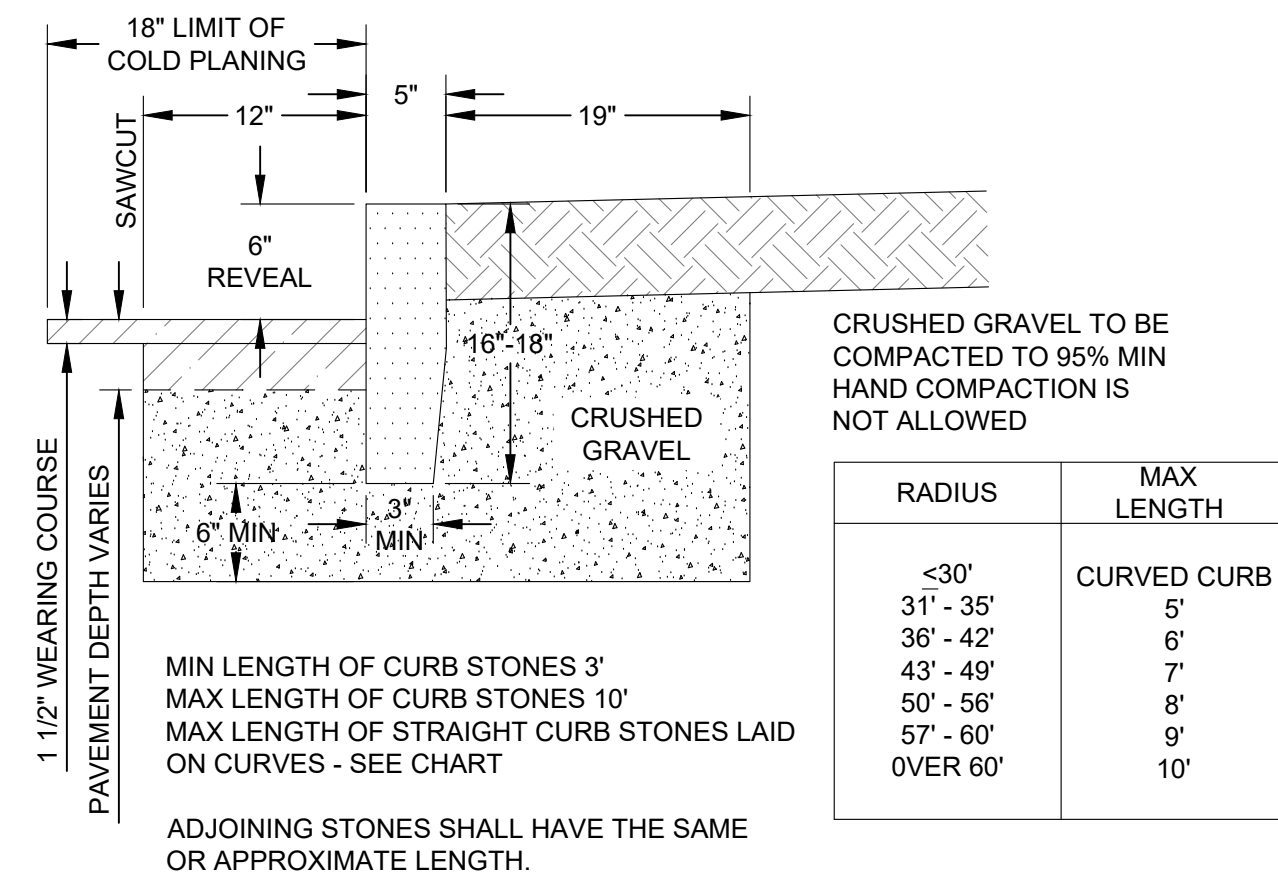
DRAWING TITLE
**CONSTRUCTION
DETAILS**

SCALE: N.T.S. DATE: 08/12/2024
DRAFTED BY: DRW CHECKED BY: ERL PROJECT MGR: ERL PROJECT NO.: HOUG0001

STATE OF NEW HAMPSHIRE
ERIN R. LAMBERT
No. 1105T
LICENSED PROFESSIONAL ENGINEER
ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

C5.1

09 OF 15



CRUSHED GRAVEL TO BE COMPACTED TO 95% MIN HAND COMPACTION IS NOT ALLOWED

RADIUS	MAX LENGTH
<30'	5'
31' - 35'	6'
36' - 42'	7'
43' - 49'	8'
50' - 56'	9'
57' - 60'	10'

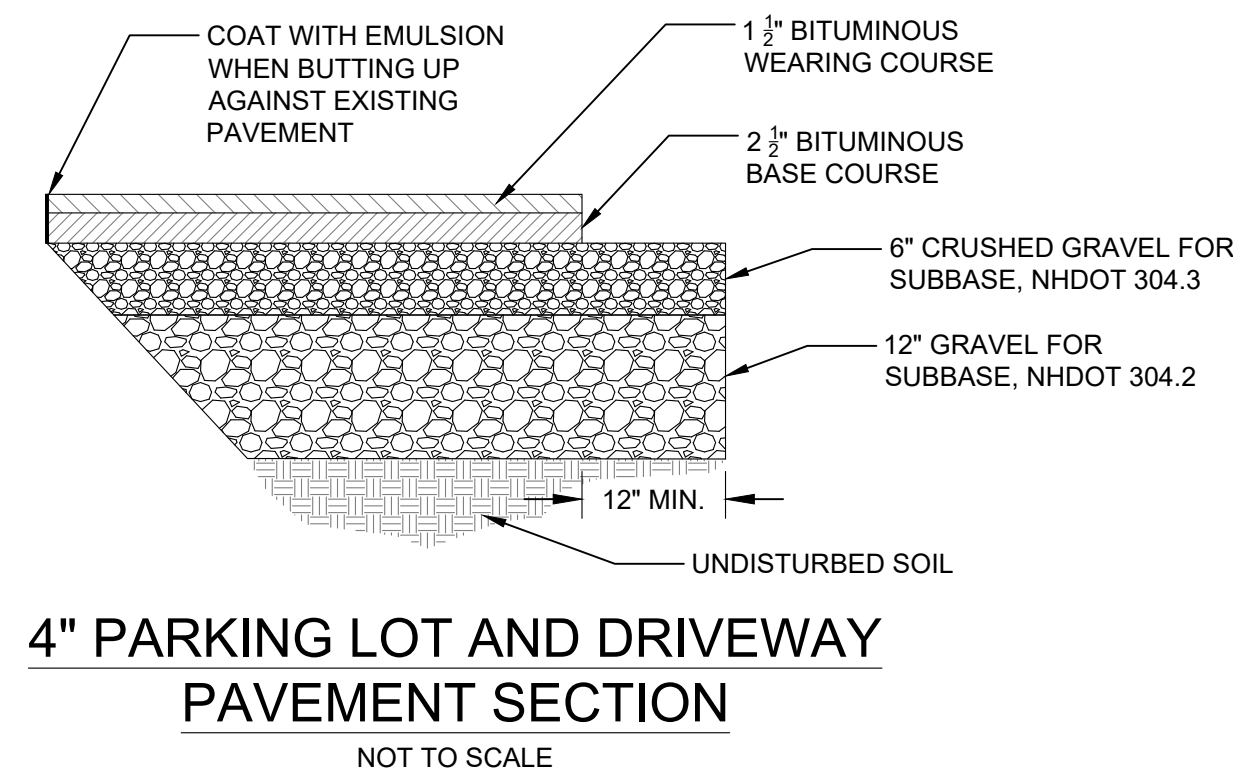
MIN LENGTH OF CURB STONES 3'
MAX LENGTH OF CURB STONES 10'
MAX LENGTH OF STRAIGHT CURB STONES LAID ON CURVES - SEE CHART

ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATE LENGTH.

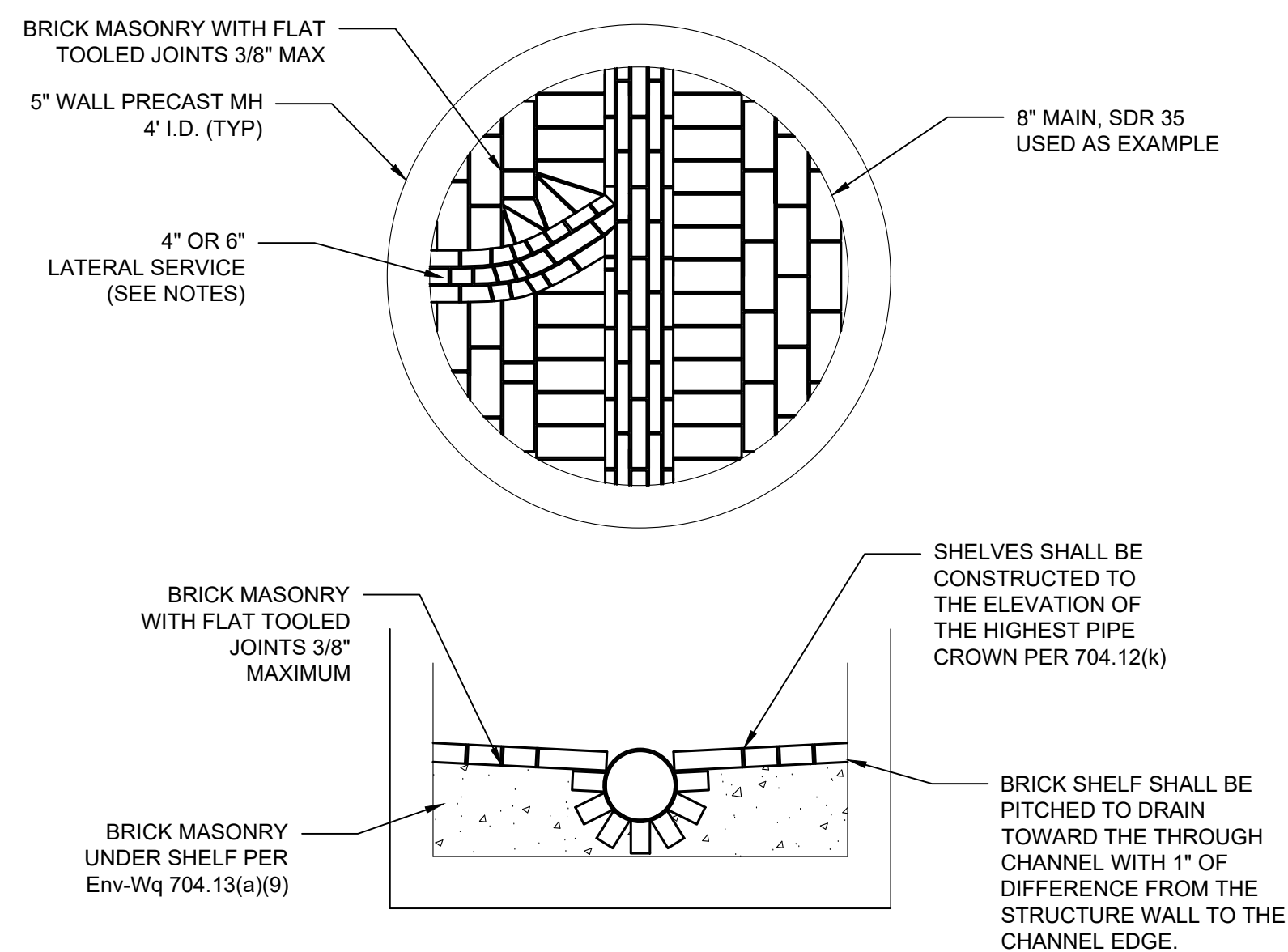
FINISH SURFACE AND TOLERANCES FOR VERTICAL GRANITE CURB

AREA	FINISH SURFACE	TOLERANCE
TOP	5" WIDE OR AS OTHERWISE SHOWN, SAWN TRUE PLANE.	+1/8" TO +1/4"
FRONT FACE	FRONT AND BACK ARRIS LINES PITCHED STRAIGHT AND PARALLEL.	+1/8" TO +1/8"
FRONT FACE	RIGHT ANGLE TO TOP, APPROXIMATELY TRUE PLANE. NO DRILL HOLES SHOWING IN TOP 10"	+1" TO -1/2"
BACK FACE EXPOSED	PLANE PARALLEL WITH FRONT FACE. STRAIGHT SPLIT TO 1 1/2" BELOW EXPOSED SURFACE. NO LARGER THAN 1/2" SEGMENT OF DRILL HOLES SHOWING IN ARRIS LINES.	+1" TO -1"
CONCEALED	BELOW 1/2" FROM EXPOSED SURFACE.	+1 1/2" TO -1 1/2"
BOTTOM	APPROXIMATELY PARALLEL TO TOP. MINIMUM WIDTH: 3"	SEE PLANS
ENDS EXPOSED PORTION	SQUARE WITH PLANES OF TOP AND FACE	
JOINTS EXPOSED	OPTIMUM WIDTH: 1"	
CONCEALED	TO BREAK BACK NO MORE THAN 4"	+3/4" TO -3/4"

VERTICAL GRANITE CURB
NOT TO SCALE

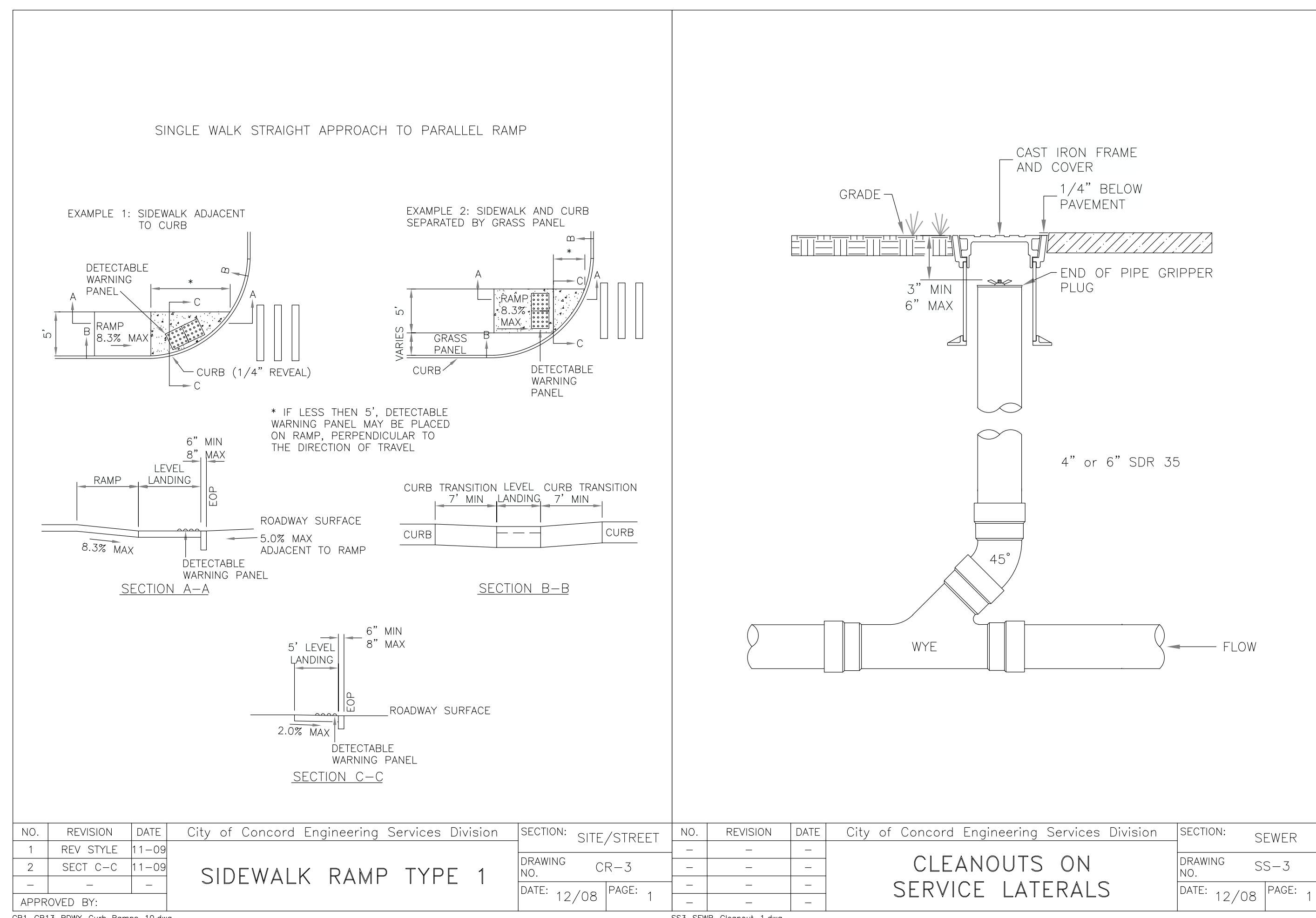


4" PARKING LOT AND DRIVEWAY PAVEMENT SECTION
NOT TO SCALE



- NOTES:
- FOR MAINS 8" TO 15", CONSTRUCT INVERT THROUGH THE LOWER HALF OF THE PIPE (MINIMUM) 8" PIPE - 7 BRICK MINIMUM (JUST ABOVE THE MIDPOINT) 10" PIPE - 7 BRICK MINIMUM 12" PIPE - 9 BRICK MINIMUM 15" PIPE - 11 BRICK MINIMUM
 - FOR MAINS GREATER THAN 15", CONSTRUCT BRICK INVERT TO TOP OF PIPE
 - MAINTAIN THROUGH WIDTH THROUGH STRUCTURE
 - TYPICAL BRICK, ASTM DESIGNATION: C321-93
 - SERVICE CONNECTIONS SHOULD BE PER THE "SEWER SERVICE CONNECTION/ INSIDE DROP MANHOLE" DETAIL. WHERE GRADES PROHIBIT SUCH A CONNECTION THE CONNECTION SHOULD BE AS SHOWN WITH THE SERVICE INVERT 2" ABOVE THE INVERT OF THE MAIN WHERE IT ENTERS THE MANHOLE.

SANITARY BRICK SHELF CONSTRUCTION
NOT TO SCALE



NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SITE/STREET	NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SEWER
1	REV STYLE	11-09		CR-3					SS-3
2	SECT C-C	11-09							
APPROVED BY: CR1-CR13_RDWY-Curb Ramps_10.dwg				DATE: 12/08 PAGE: 1	SS3_SEW-Cleanout_1.dwg				DATE: 12/08 PAGE: 1

REVISION HISTORY
1. REVISED IN RESPONSE TO TOWN COMMENTS (08/12/2024).

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210 LEDGEWOOD RD
MANCHESTER, NH**

SITE
**46 MAIN RESIDENTIAL
DEVELOPMENT
EXETER, NH 03833**

TAX MAP 63, LOT 1

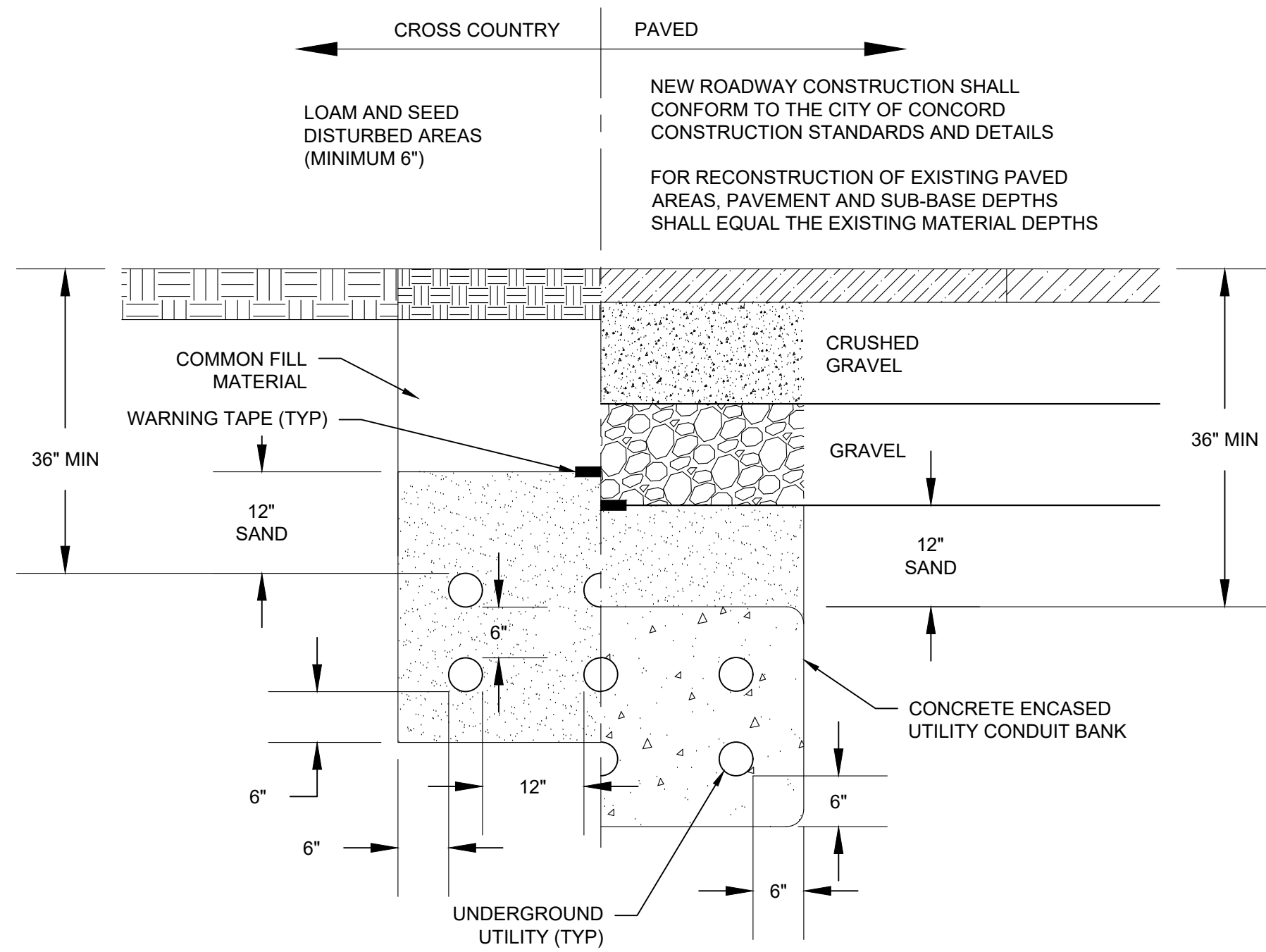
DRAWING TITLE
**CONSTRUCTION
DETAILS**

SCALE	N.T.S.	DATE	08/12/2024
DRAFTED BY	ERL	PROJECT MGR	ERL
CHECKED BY	ERL	PROJECT NO.	HOUG0001
SHEET NO.			

STATE OF NEW HAMPSHIRE
ERIN R. LAMBERT
No. 11057
LICENSED PROFESSIONAL ENGINEER
Erin R. Lambert
ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

C5.2

10 OF 15

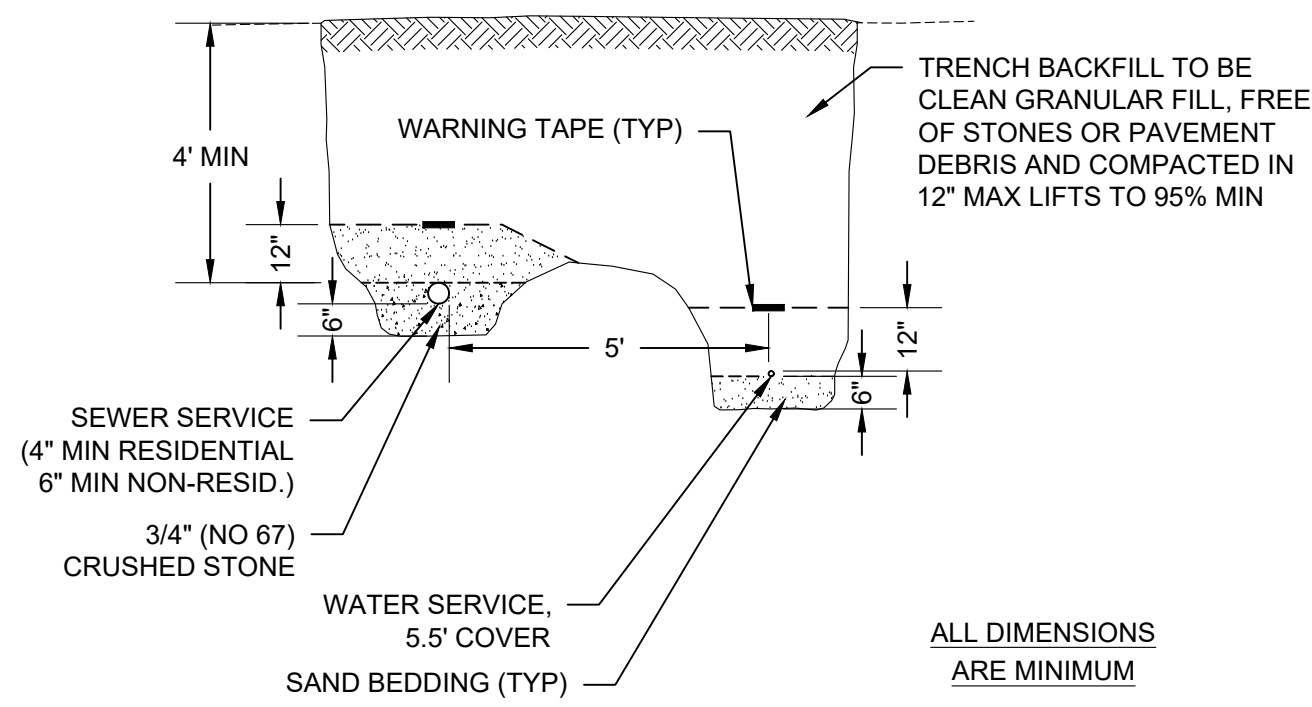


UNDERGROUND CONDUIT INSTALLATIONS SHALL BE COORDINATED WITH ALL LOCAL UTILITIES INCLUDING ELECTRIC, TELEPHONE, GAS, CABLE, STEAM, AND CITY OF CONCORD FIRE ALARM/SIGNAL AND ENGINEERING SERVICES DIVISIONS.

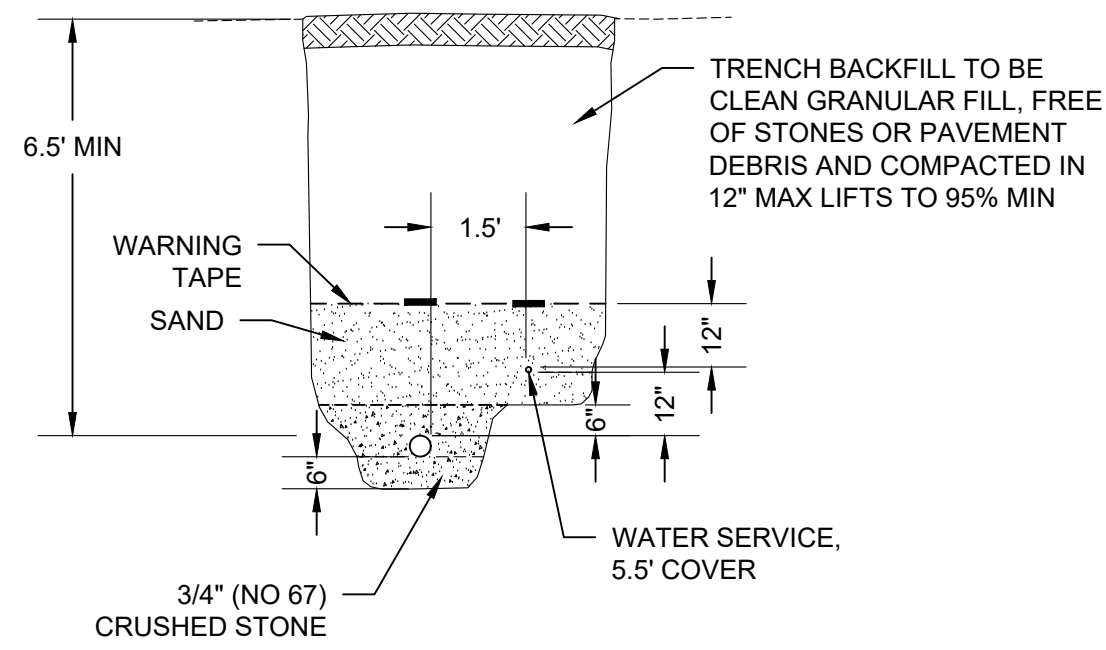
CONDUIT CROSSINGS SHALL BE SWEEPS AT RIGHT ANGLES TO THE STREET. 90° BENDS ARE NOT ACCEPTABLE.

PROPOSED CONDUITS WITHIN PAVED SECTIONS OF STREETS SHALL BE RIGID METAL OR SCH 80 PVC CONDUIT. WHEN THE PROPER DEPTH CANNOT BE ACHIEVED, SCH 40 PVC CONDUIT ENCASED IN CONCRETE SHALL BE USED.

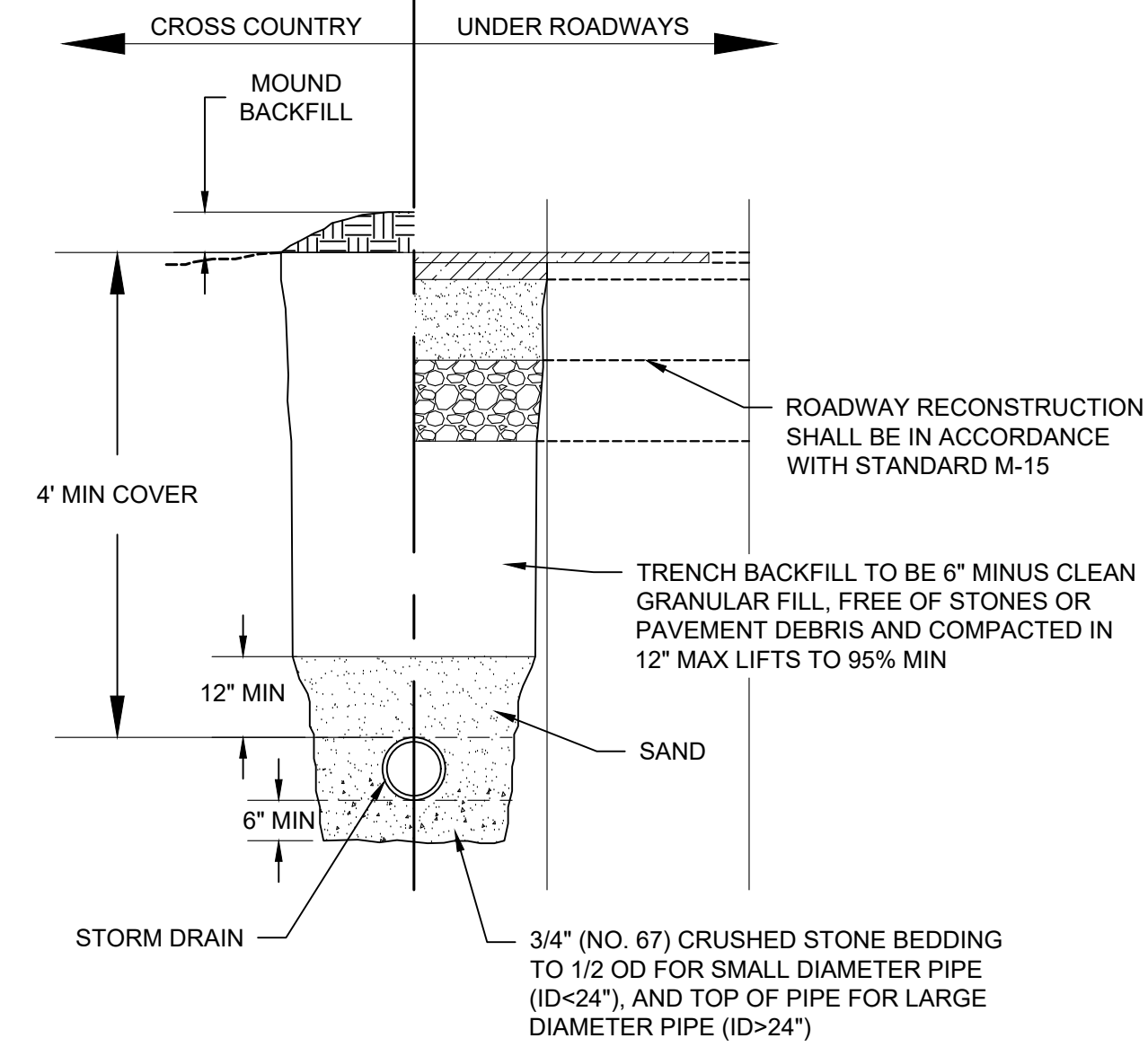
**TYPICAL UTILITY CONDUIT
INSTALLATION**
NOT TO SCALE



ALL DIMENSIONS ARE MINIMUM

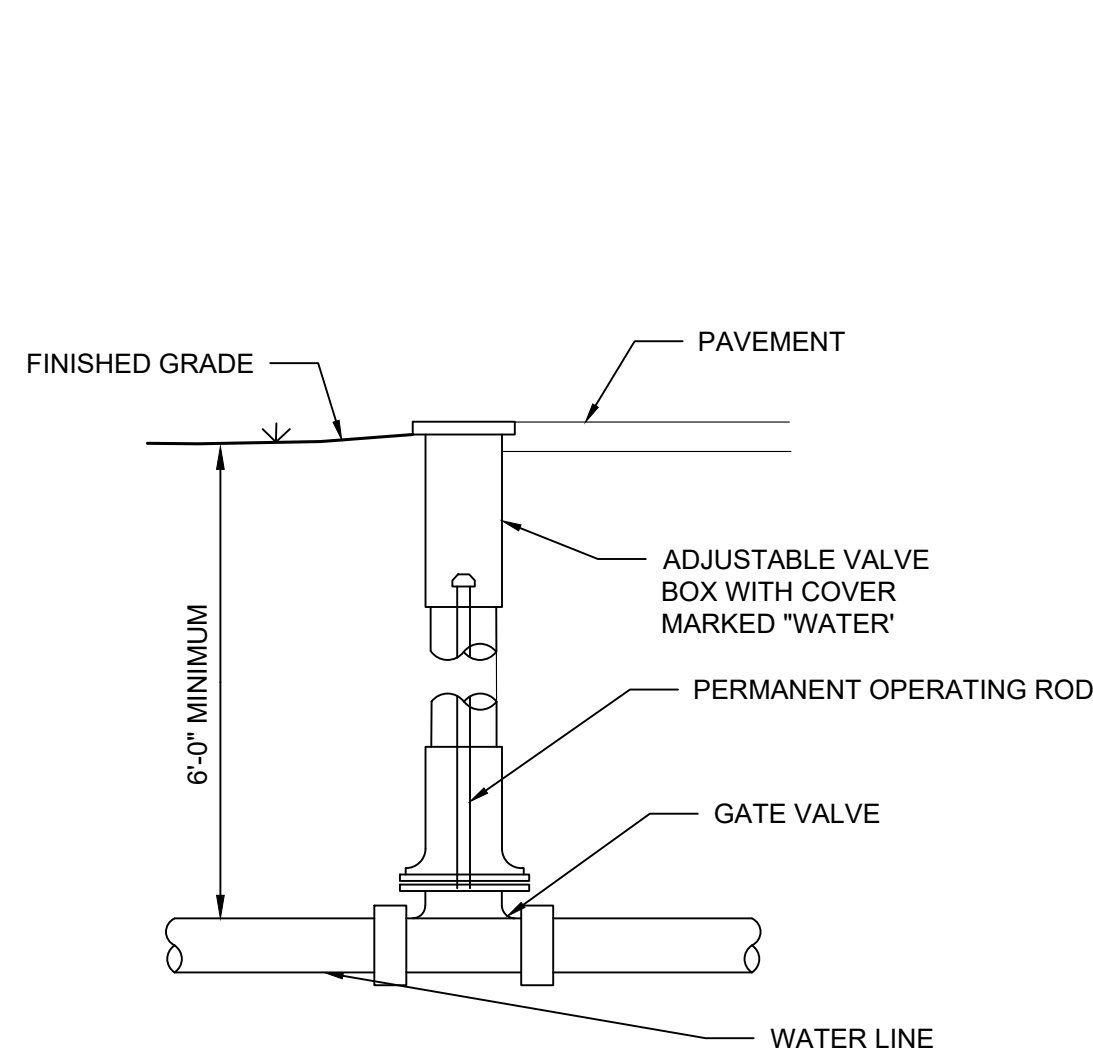


**WATER AND SEWER SERVICE
TRENCH**
NOT TO SCALE

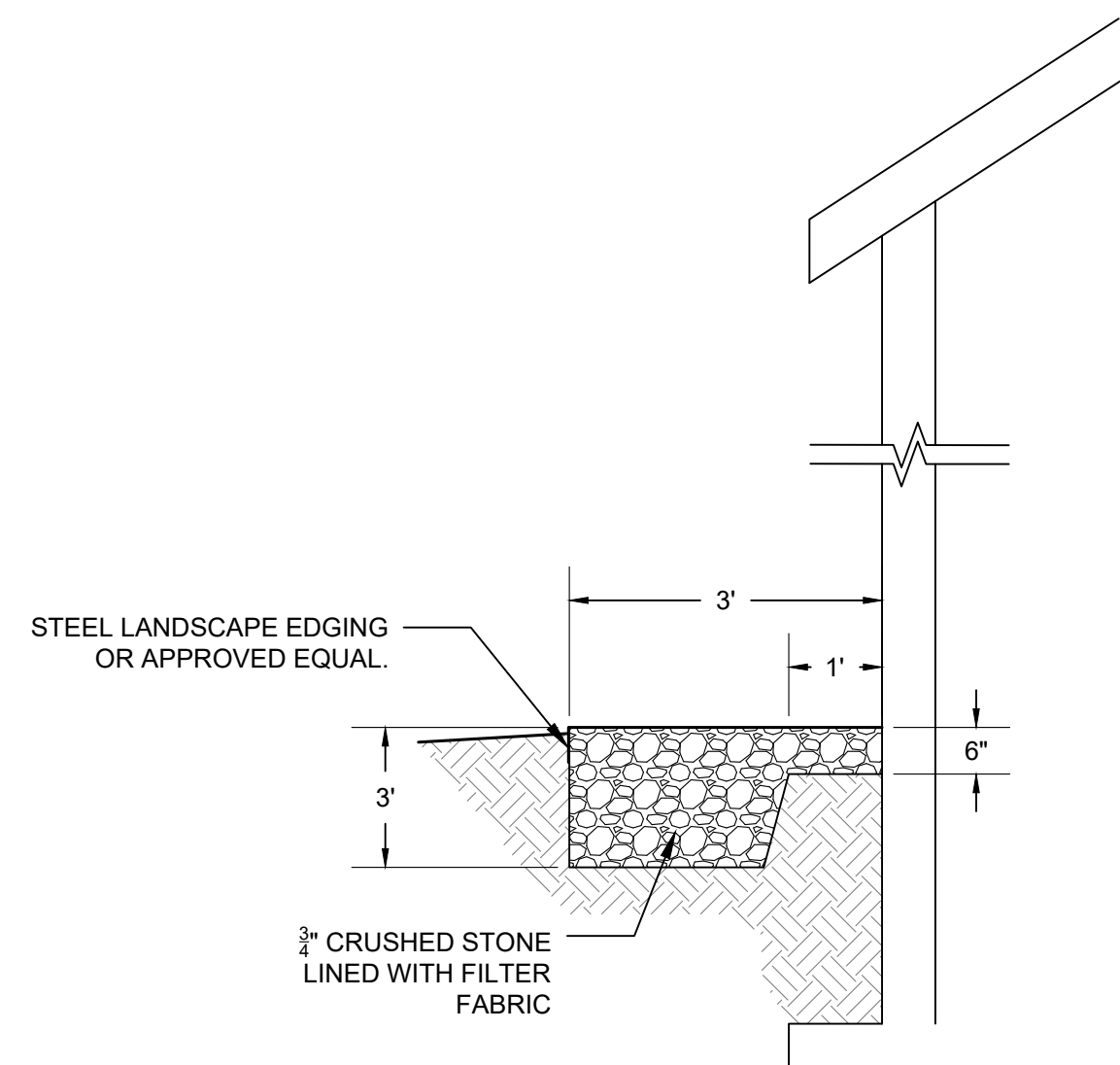


- NOTES:
- SAND BLANKET MATERIAL SHALL CONFORM WITH PROVISIONS OF Env-Wq 704.11(b).
 - TRENCH BACKFILL MATERIAL SHALL CONFORM WITH Env-Wq 704.11(h).
 - FOR EXCAVATION IN LEDGE, EXCAVATION SHALL EXTEND AT LEAST 12\"/>

STORM DRAIN TRENCH
NOT TO SCALE



BURIED GATE VALVE DETAIL
NOT TO SCALE



INFILTRATION DRIP EDGE
NOT TO SCALE

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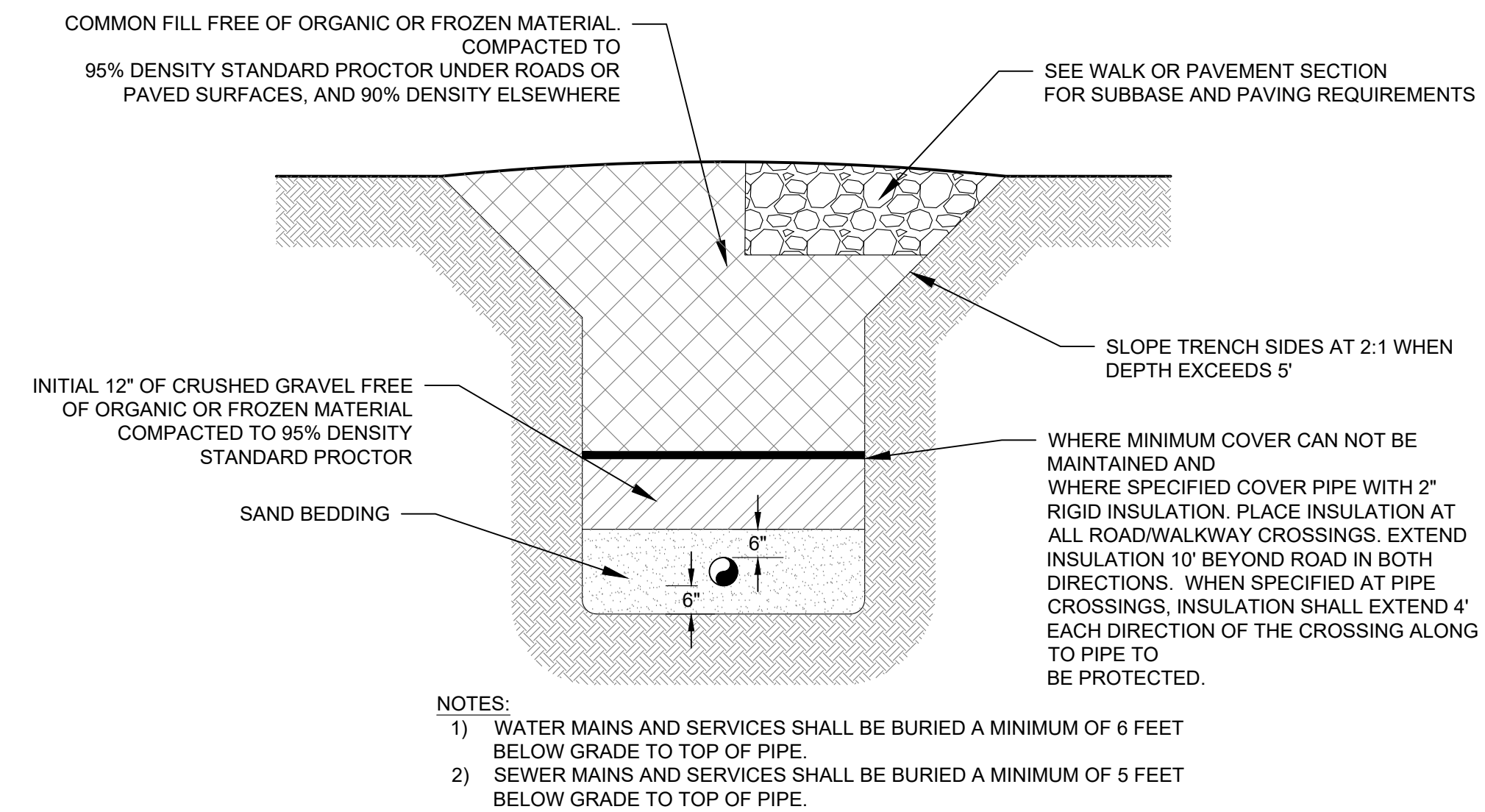
SITE
**46 MAIN RESIDENTIAL
DEVELOPMENT
EXETER, NH 03833
TAX MAP 63, LOT 1**

DRAWING TITLE
**CONSTRUCTION
DETAILS**

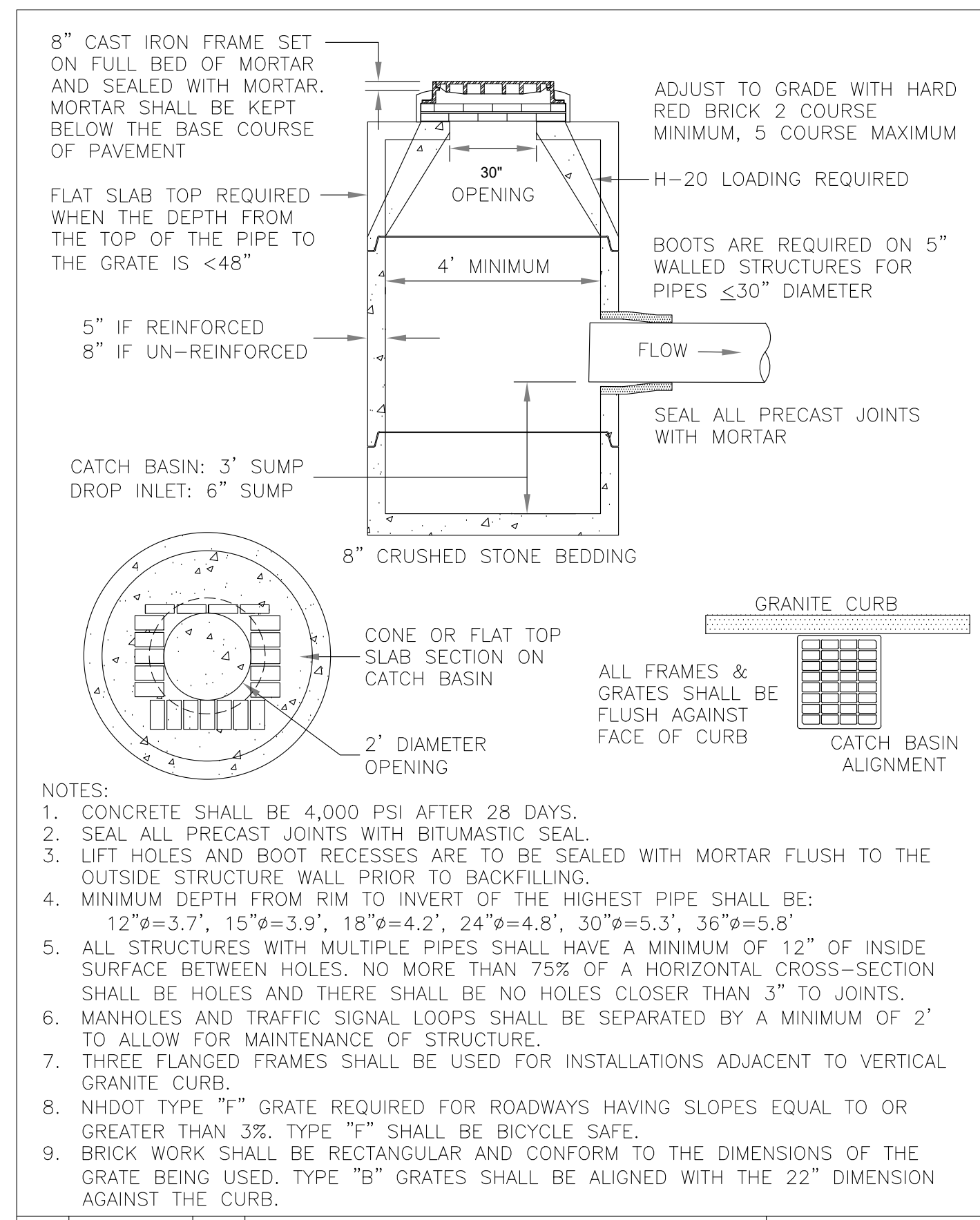
SCALE: N.T.S. DATE: 08/12/2024
DRAFTED BY: DRW CHECKED BY: ERL PROJECT MGR: ERL PROJECT NO.: HOUG0001

SHEET NO.
C5.3
11 OF 15

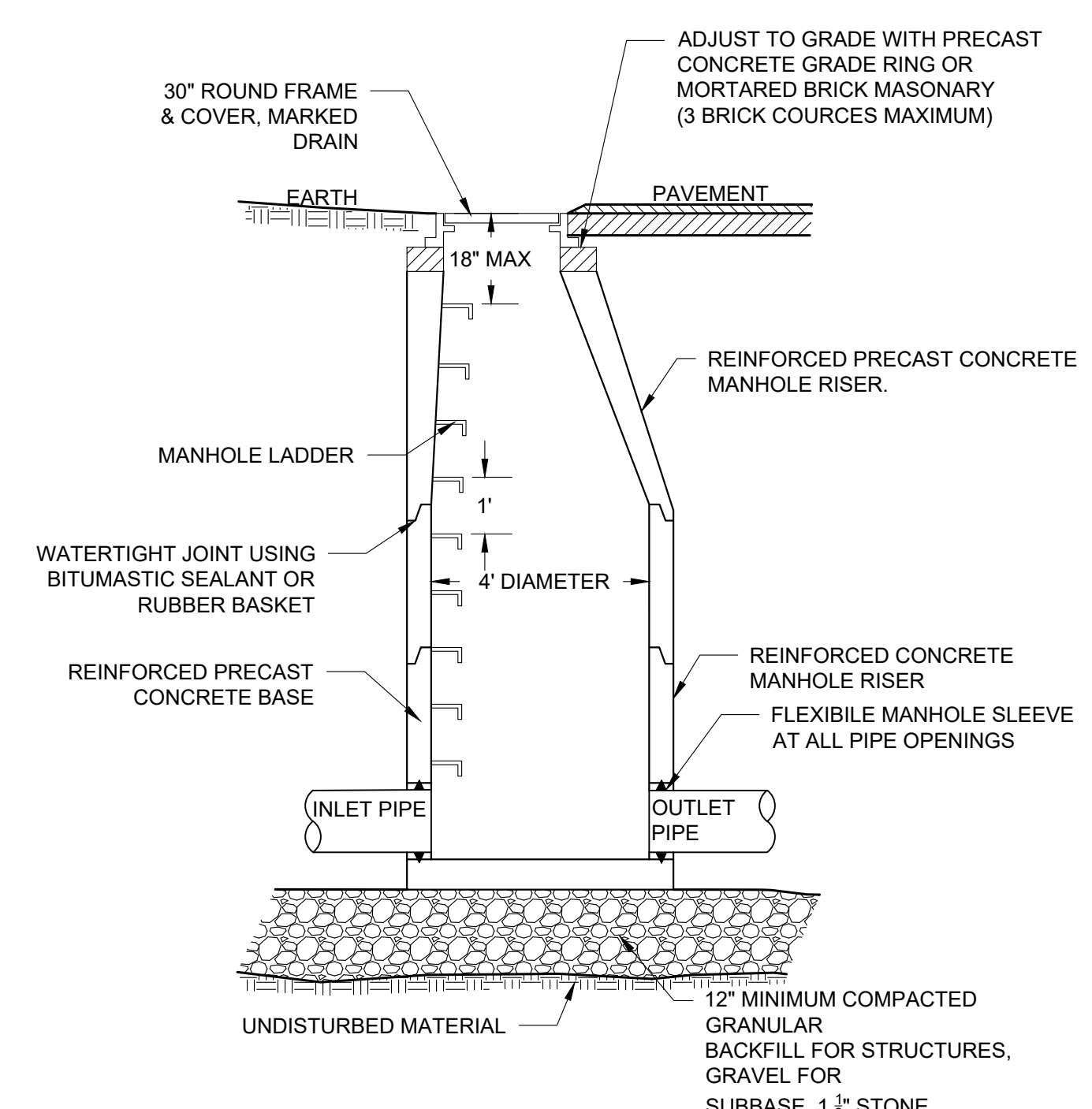
ENGINEER: ERIN R. LAMBERT
NH P.E. #11057



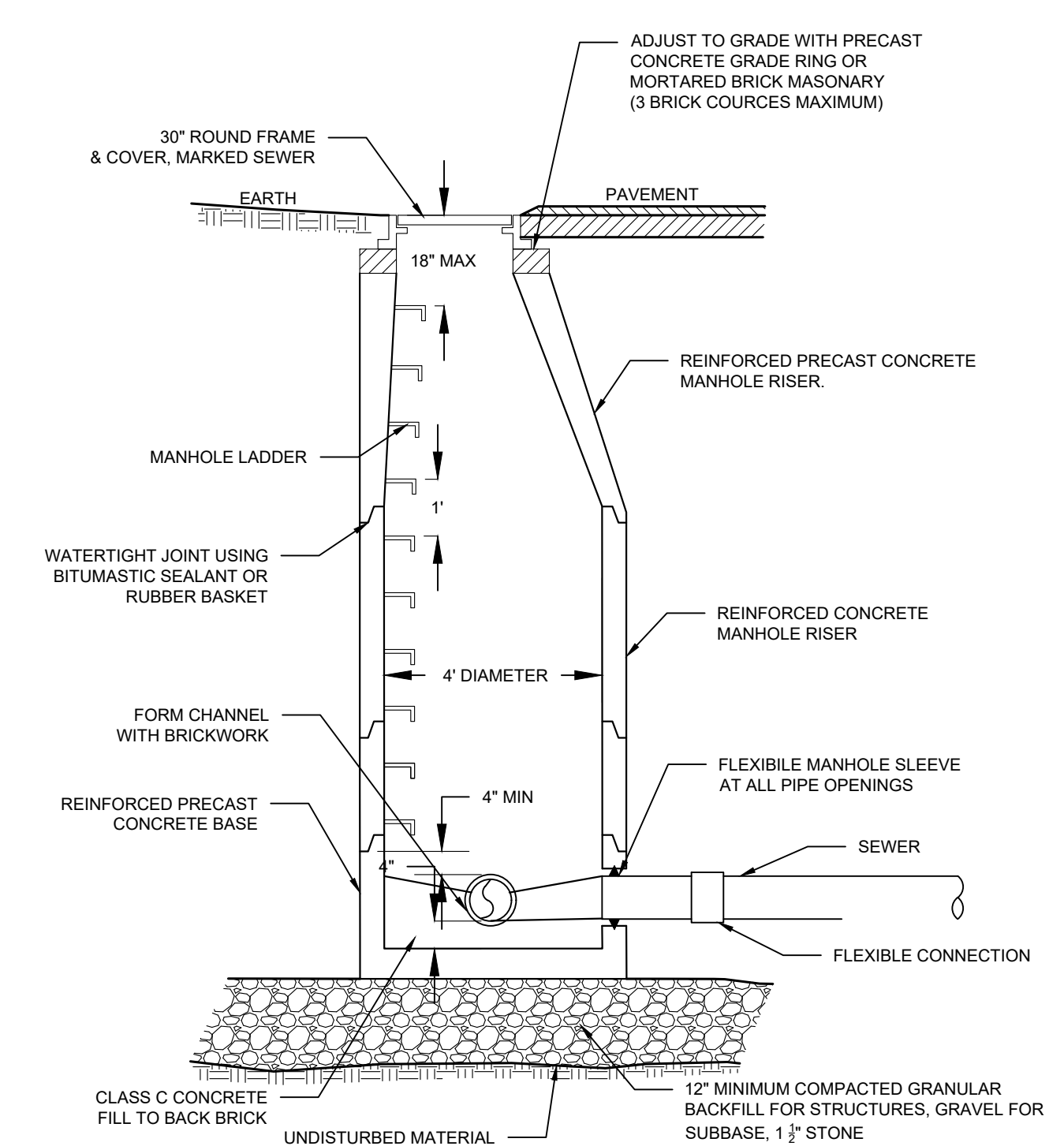
TYPICAL UTILITY PIPE TRENCH DETAIL
NOT TO SCALE



NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION:	STORM DRAIN
1	DRAFTING	11/11		DRAWING NO.	SD-6
2	SUMP DIM.	3/19		DATE:	12/08
				PAGE:	1



DRAINAGE MANHOLE
NOT TO SCALE



SEWER MANHOLE
NOT TO SCALE

SC-310 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-310.
- CHAMBERS SHALL BE ARCH SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE OR POLYETHYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT², THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2922 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310 SYSTEM

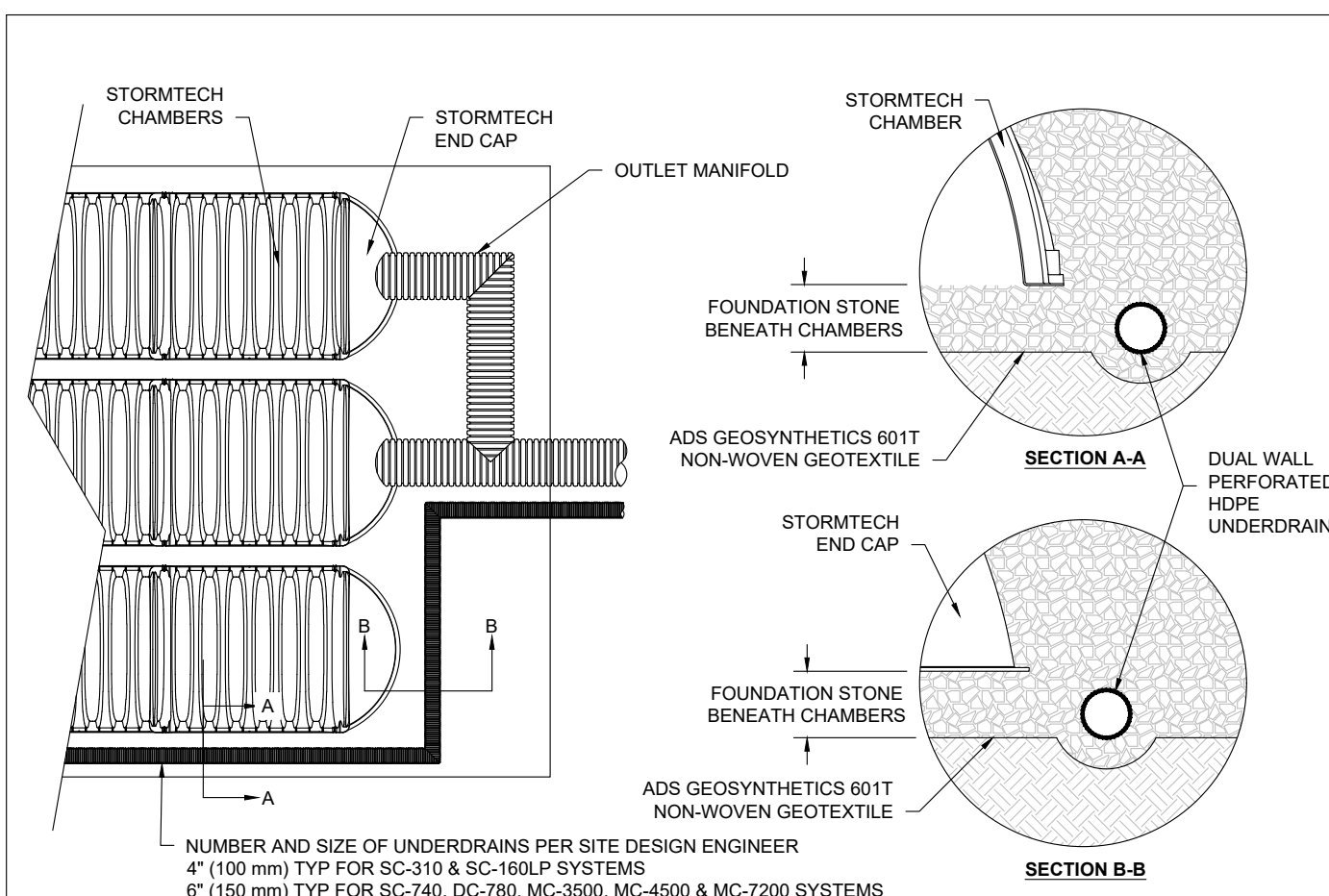
- STORMTECH SC-310 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOTTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4"-2" (20-50 mm).
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

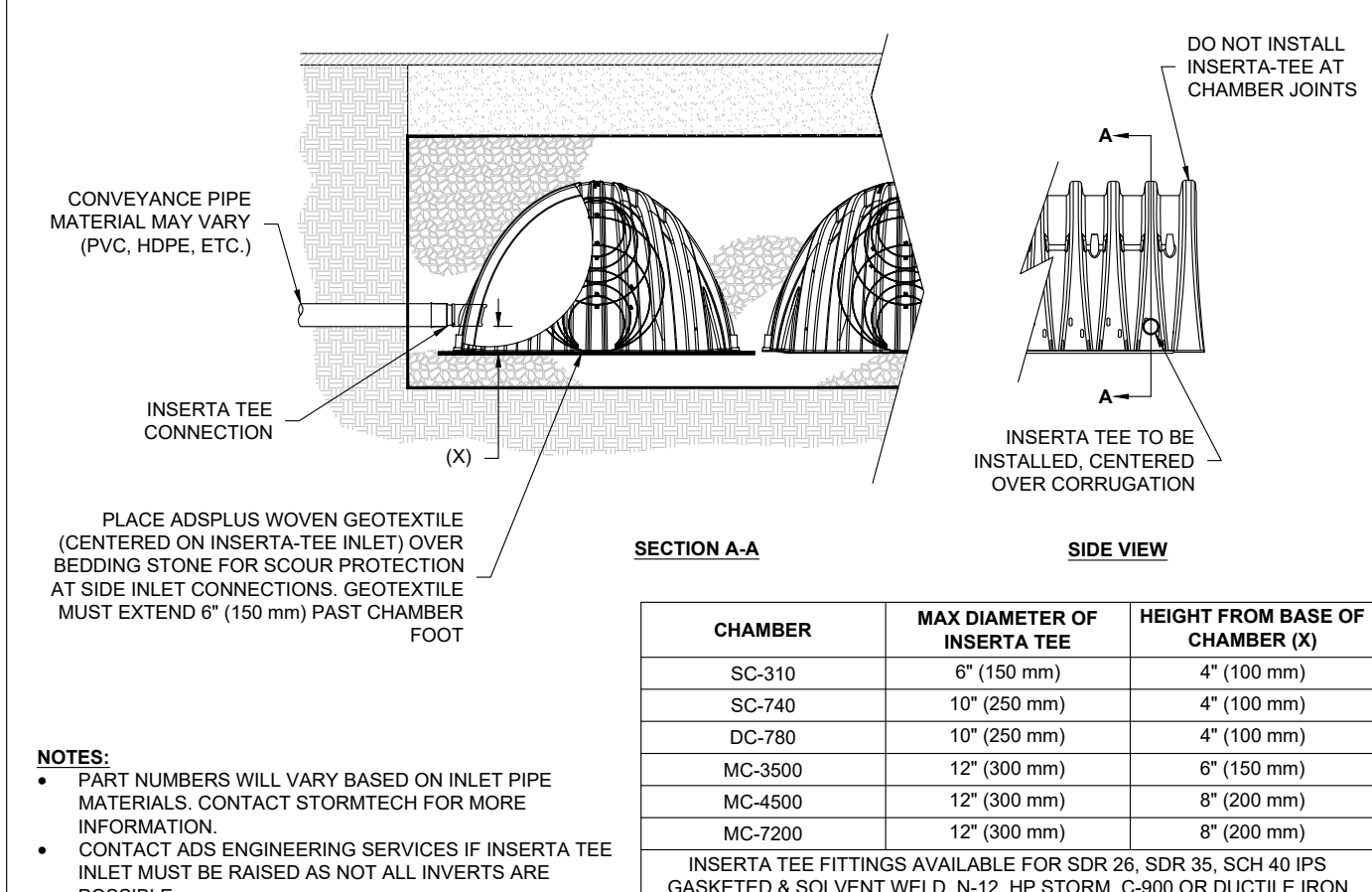
- STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

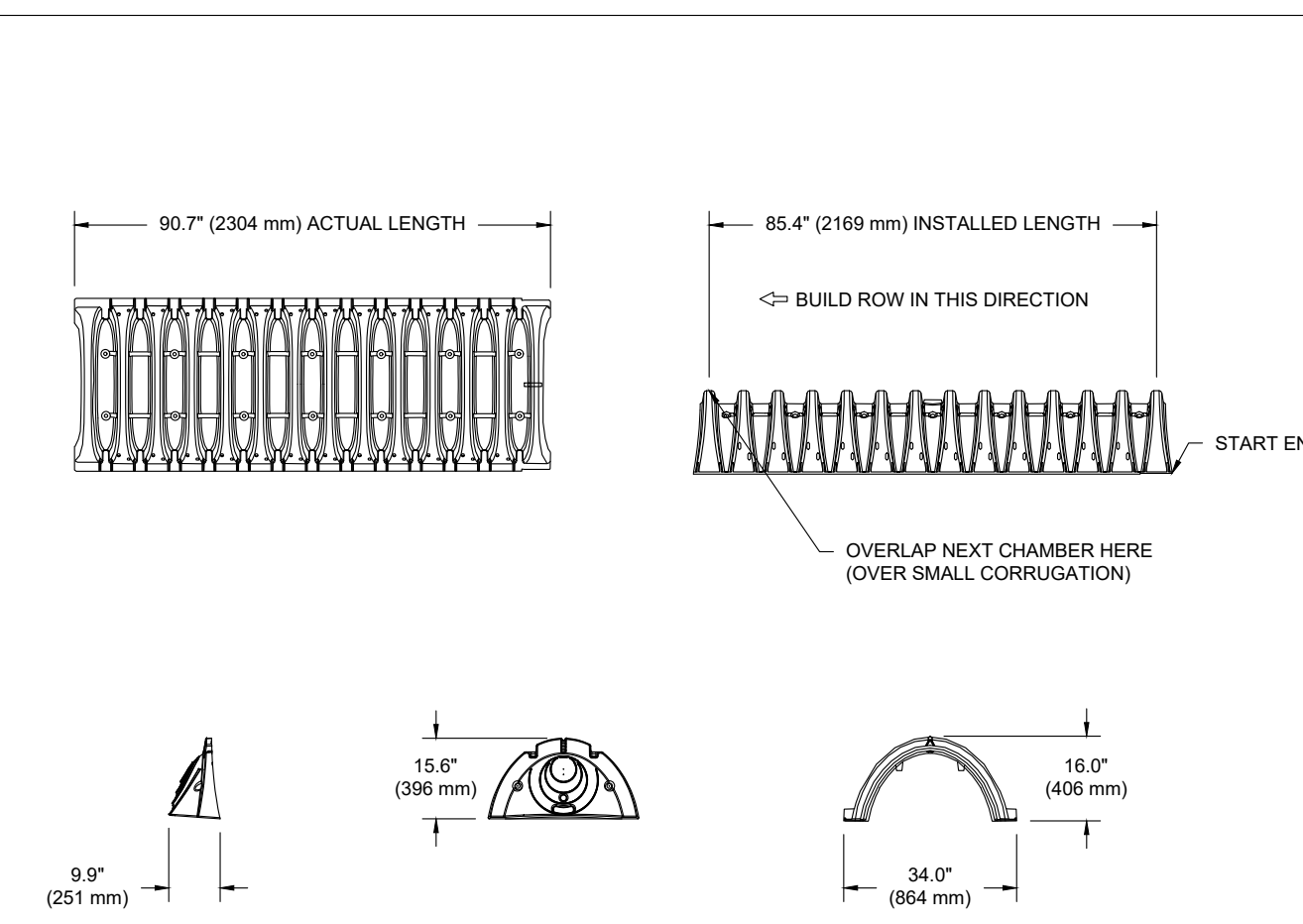
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



5 UNDERDRAIN DETAIL



6 INSERTA-TEE SIDE INLET DETAIL



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	34.0" X 16.0" X 85.4"	(864 mm X 406 mm X 2169 mm)
CHAMBER STORAGE	14.7 CUBIC FEET (0.42 m ³)	14.7 CUBIC FEET (0.42 m ³)
MINIMUM INSTALLED STORAGE*	31.0 CUBIC FEET (0.88 m ³)	31.0 CUBIC FEET (0.88 m ³)
WEIGHT	35.0 lbs. (16.8 kg)	35.0 lbs. (16.8 kg)

*ASSUMES 6" (152 mm) ABOVE, BELOW, AND BETWEEN CHAMBERS

PRE-FAB STUB AT BOTTOM OF END CAP WITH FLAM END WITH "BR" PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B" PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T" PRE-CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC310EPED6T / SC310EPED6PC	6" (150 mm)	9.6" (244 mm)	5.8" (147 mm)	---
SC310EPE6B / SC310EPE6BPC	6" (150 mm)	---	---	0.5" (13 mm)
SC310EPE8T / SC310EPE8TPC	8" (200 mm)	11.9" (302 mm)	3.5" (89 mm)	---
SC310EPE8B / SC310EPE8BPC	8" (200 mm)	---	---	0.8" (19 mm)
SC310EPE10T / SC310EPE10TPC	10" (250 mm)	12.7" (323 mm)	1.4" (36 mm)	---
SC310EPE10B / SC310EPE10BPC	10" (250 mm)	---	---	0.7" (18 mm)
SC310EPE12B	12" (300 mm)	13.5" (343 mm)	---	0.9" (23 mm)
SC310EPE12BR	12" (300 mm)	13.5" (343 mm)	---	0.9" (23 mm)

ALL STUBS, EXCEPT FOR THE SC310EPE12B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC310EPE12B THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

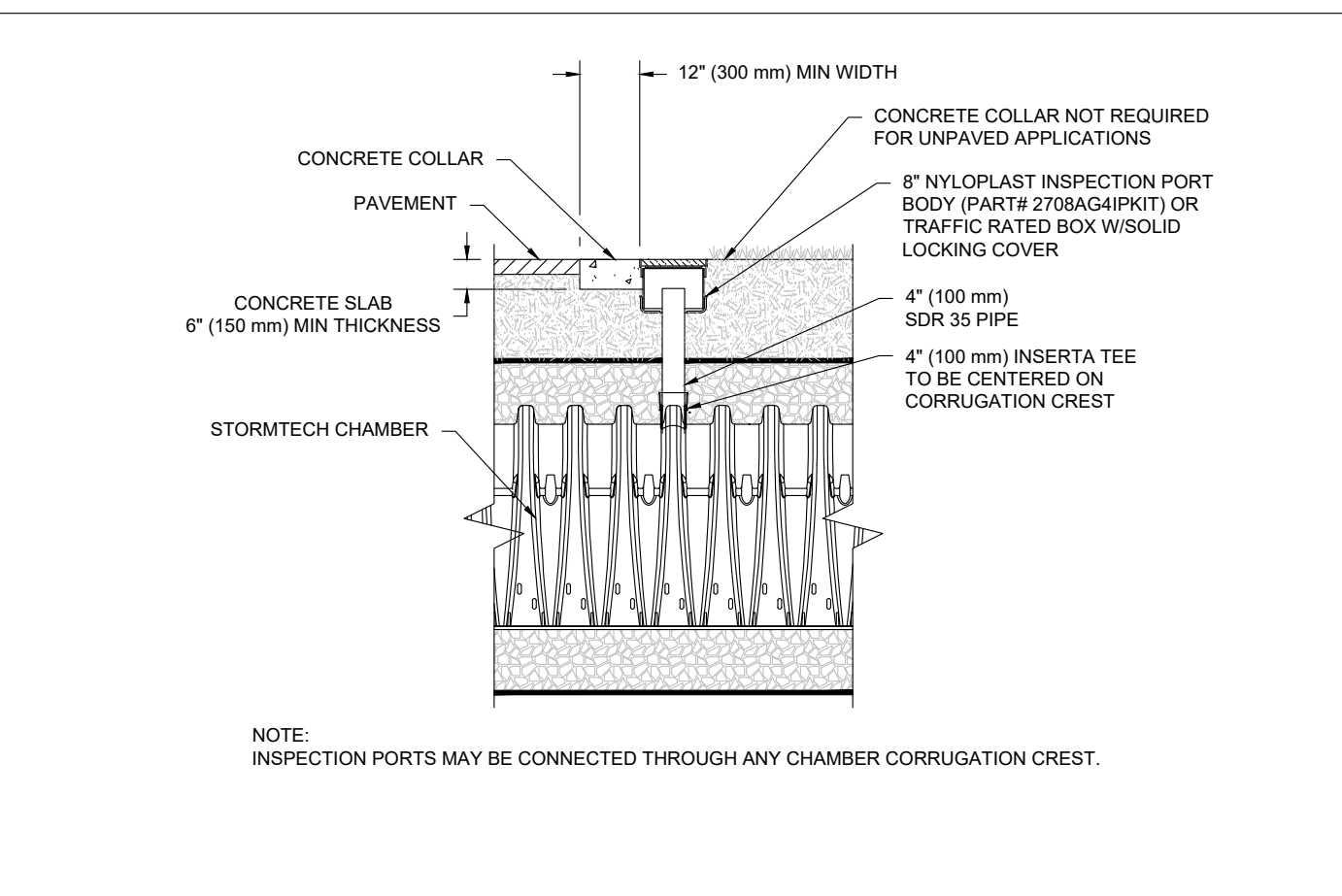
NOTE: ALL DIMENSIONS ARE NOMINAL.

2 SC-310 TECHNICAL SPECIFICATIONS

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ² 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) ABOVE.	AASHTO M43 ² 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 ² 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR, FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES WILL BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
 - ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



4 4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
 - REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIUM ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - ALL ISOLATOR PLUS ROWS
 - REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - MIRRORS OR POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PRODUCTS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS. RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

1 SC-310 CROSS SECTION DETAIL



REVISION HISTORY
1. REVISED IN RESPONSE TO TOWN COMMENTS (08/12/2024).

ISSUED FOR PERMITTING

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OWNER

JIN ESTHER
2 TWIN POND CIRCLE
EXETER, NH

DEVELOPER/APPLICANT

MR. PATRICK HOUGHTON
210 LEDGEWOOD RD
MANCHESTER, NH

SITE

46 MAIN RESIDENTIAL DEVELOPMENT
EXETER, NH 03833

TAX MAP 63, LOT 1

DRAWING TITLE CONSTRUCTION DETAILS

SCALE	N.T.S.	DATE	08/12/2024
DRAFTED BY	ERL	PROJECT MGR	ERL
CHECKED BY	ERL	PROJECT NO.	HOU0001

STATE OF NEW HAMPSHIRE
ERIN R. LAMBERT
No. 11057
REGISTERED PROFESSIONAL ENGINEER
ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

C5.4

SHEET NO.
12 OF 15

REVISION HISTORY
1. REVISED IN RESPONSE TO TOWN COMMENTS (08/12/2024).

ISSUED FOR
PERMITTING

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OWNER
**JIN ESTHER
2 TWIN POND CIRCLE
EXETER, NH**

DEVELOPER/APPLICANT
**MR. PATRICK HOUGHTON
210 LEDGEWOOD RD
MANCHESTER, NH**

SITE
**46 MAIN RESIDENTIAL
DEVELOPMENT
EXETER, NH 03833
TAX MAP 63, LOT 1**

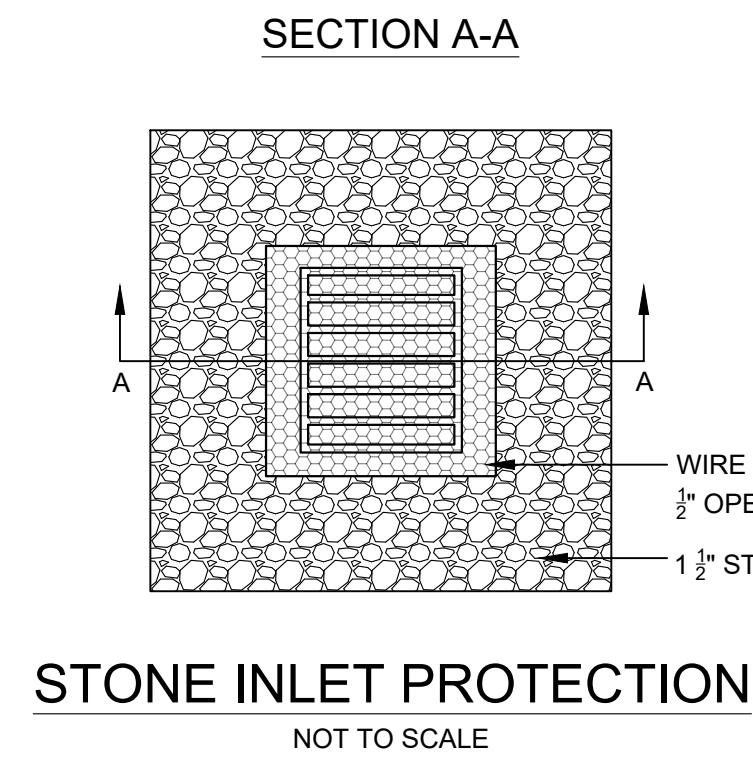
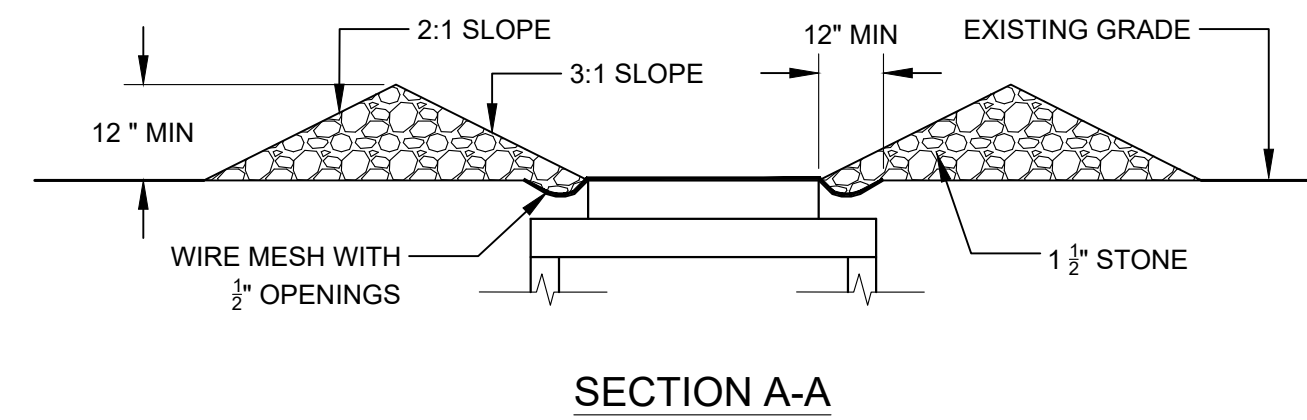
DRAWING TITLE
**EROSION
CONTROL DETAILS**

SCALE	N.T.S.	DATE	08/12/2024
DRAFTED BY	ERL	PROJECT MGR	ERL
PROJECT NO.	HOU0001		

STATE OF NEW HAMPSHIRE
ERIN R. LAMBERT
No. 11057
LICENSED PROFESSIONAL ENGINEER
ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

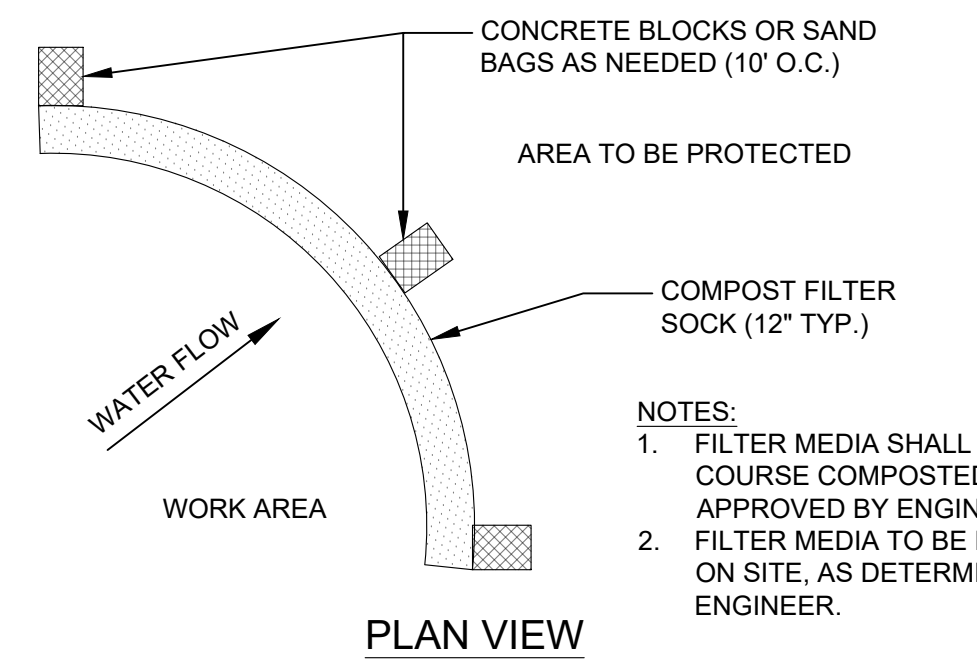
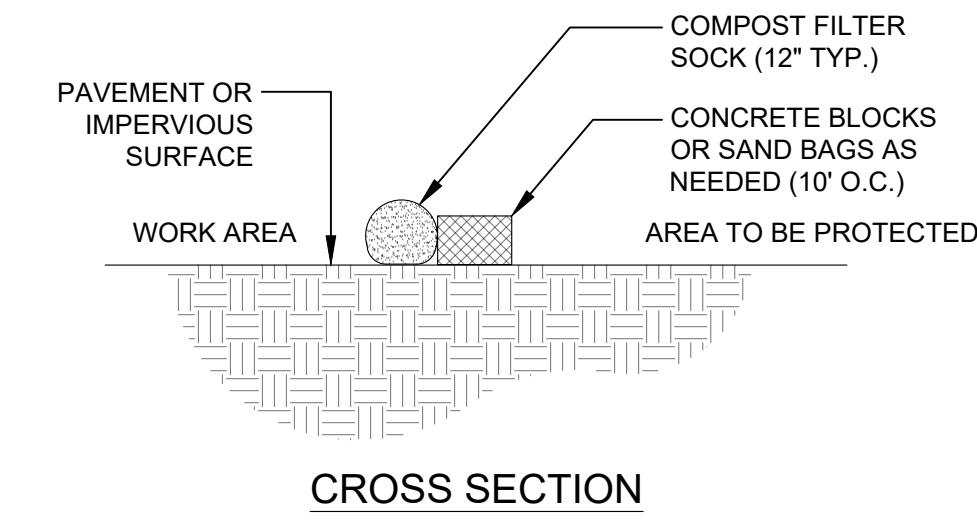
C5.5

13 OF 15

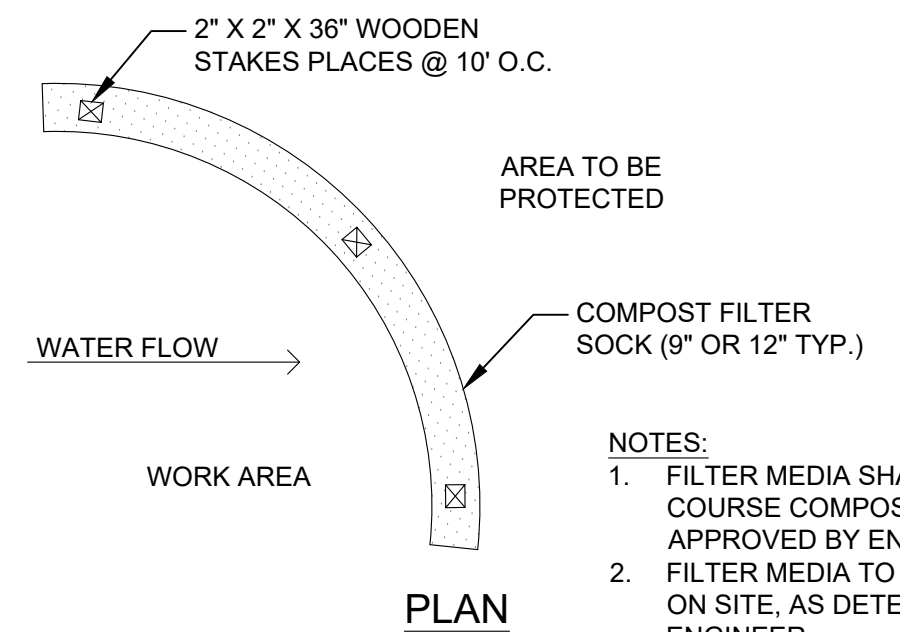
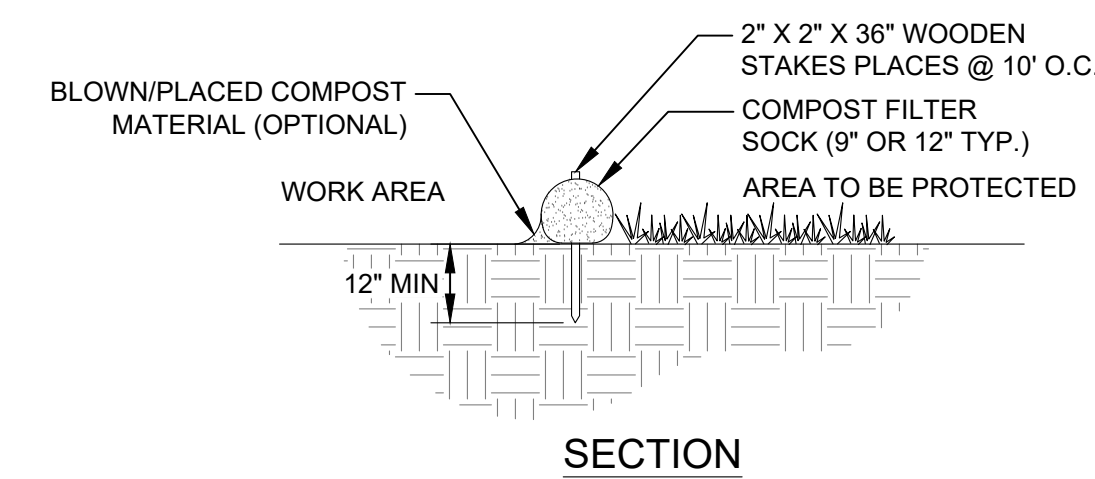


SECTION A-A

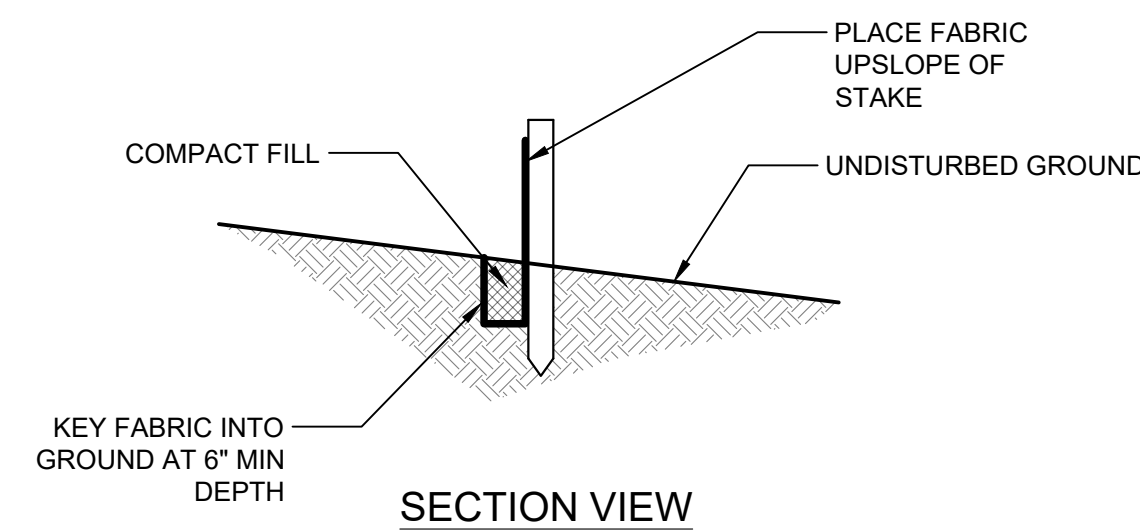
STONE INLET PROTECTION
NOT TO SCALE



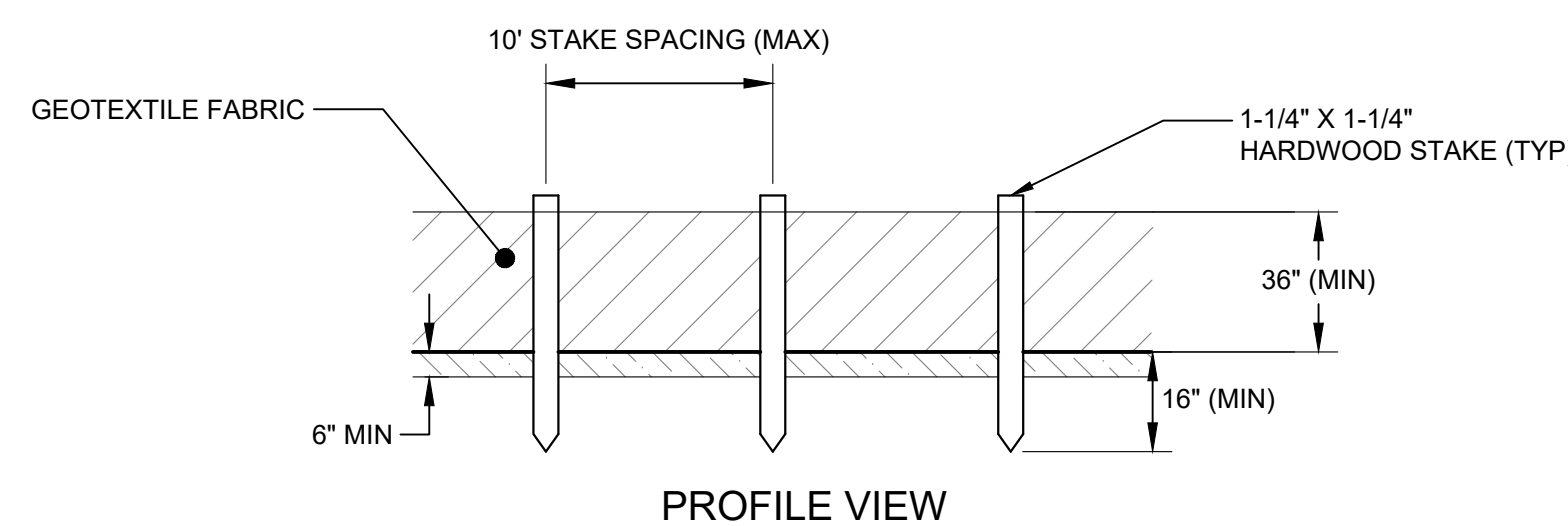
FILTER SOCK SEDIMENT CONTROL
ON PAVEMENT
NOT TO SCALE



FILTER SOCK SEDIMENT CONTROL
NOT TO SCALE



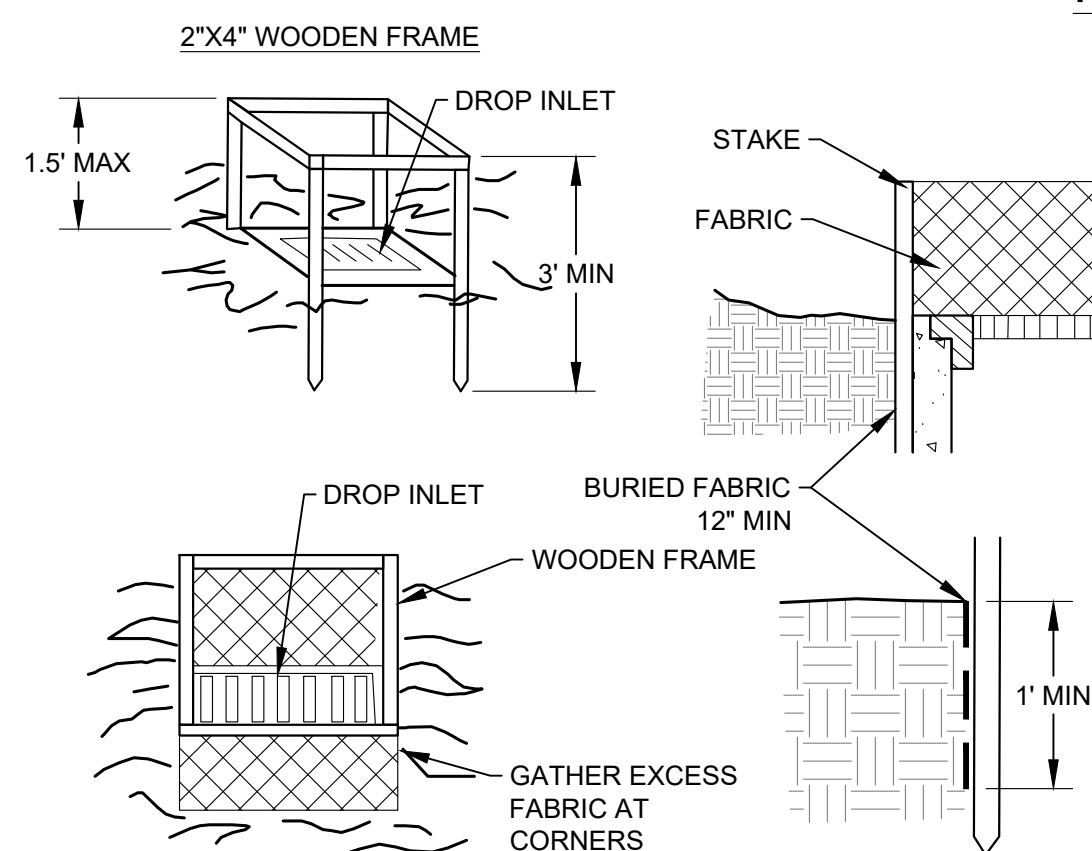
SECTION VIEW



PROFILE VIEW

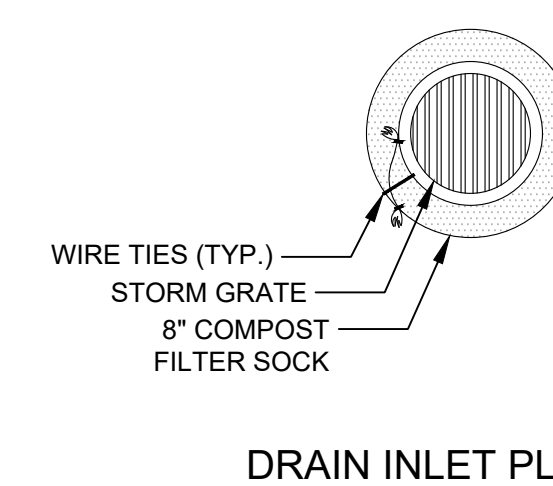
- NOTES:
1. DUE TO UV STABILITY OF FABRIC, SILT FENCE MAY NOT BE USED FOR A PERIOD LONGER THAN ONE (1) YEAR.
 2. SILT FENCE NOT TO BE USED IN AREAS OF CONCENTRATED FLOW (E.G. SWALES/DITCHES)
 3. WIRE FENCE SUPPORT (14 GAGE W/6" MESH OPENING MIN) IS REQUIRED FOR INSTALLATIONS WITHIN 100 FEET OF STREAMS, RIVERS, OR OTHER WATERS OF THE STATE.
 4. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
 5. ENDS OF FILTER CLOTH SHALL BE OVERLAPPED BY SIX INCHES, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
 6. APPROVED PREFABRICATED FENCING INCLUDES ENVIROFENCE, GEOFAB, MIRAFI 100X. OTHERS MAY BE SUITABLE BUT SUBJECT TO ENGINEER'S APPROVAL.
 7. INSPECT FENCE REGULARLY FOR DAMAGE DUE TO ANIMALS, EQUIPMENT, AND WIND
 8. REMOVE ACCUMULATED SEDIMENT WHEN LEVEL REACHES 1/2 THE HEIGHT OF FENCE

SILT FENCE DETAIL
NOT TO SCALE

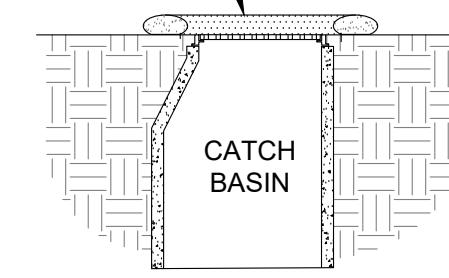


- CONSTRUCTION SPECIFICATIONS
1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85, AND HAVE WIRE MESH REINFORCEMENT.
 2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE REQUIRED THAT SHALL BE OVERLAPPED TO THE NEXT STAKE.
 3. STAKE MATERIALS WILL BE STANDARD 2"x4" WOOD OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3 FEET.
 4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM OF 18 INCHES DEEP.
 5. FABRIC SHALL BE EMBEDDED A MINIMUM OF 1 FOOT BELOW GRADE AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
 6. A 2"x4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVERFLOW STABILITY.

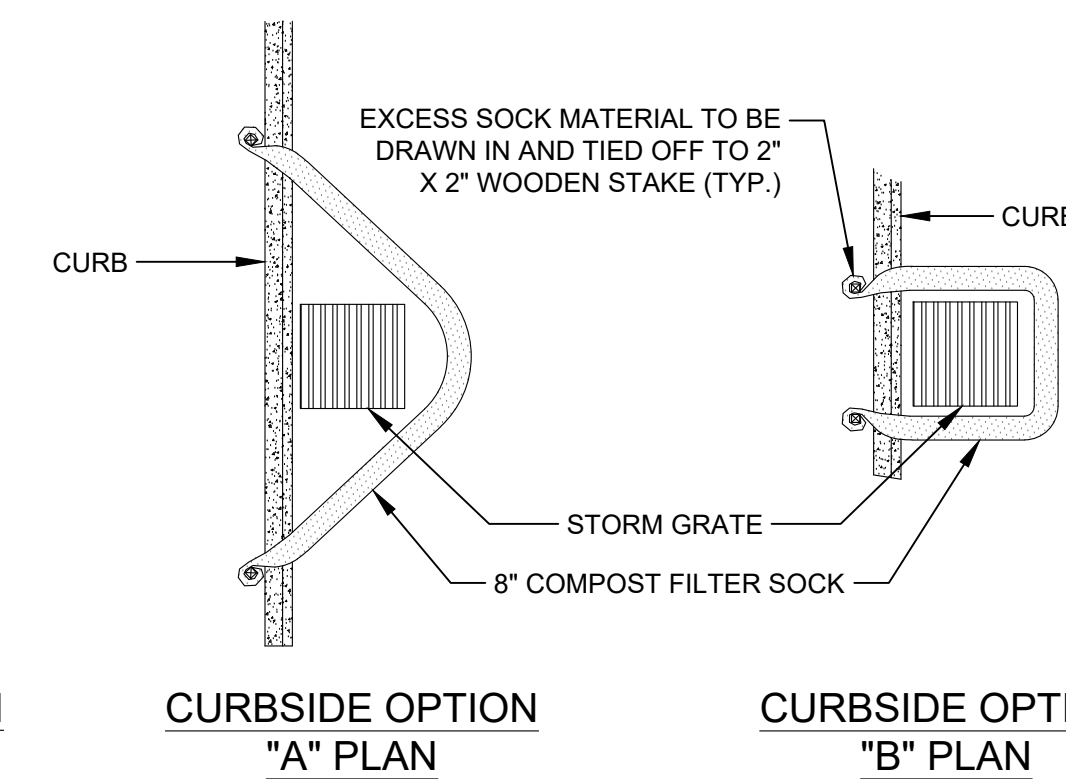
FILTER FABRIC DROP
INLET PROTECTION
NOT TO SCALE



DRAIN INLET PLAN

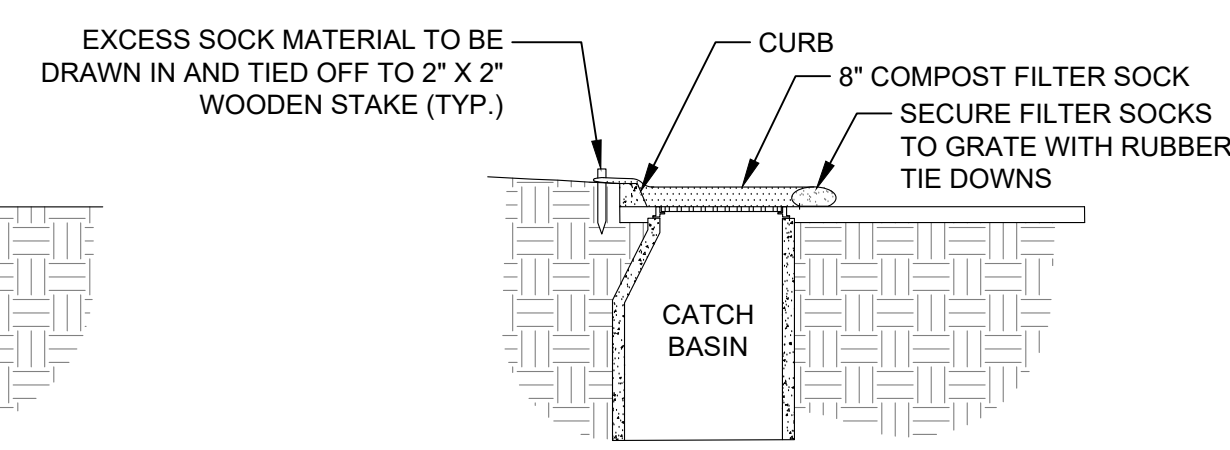


DRAIN INLET SECTION



CURBSIDE OPTION
"A" PLAN

CURBSIDE OPTION
"B" PLAN



CURBSIDE SECTION

FILTER SOCK SEDIMENT CONTROL INLET PROTECTION
NOT TO SCALE

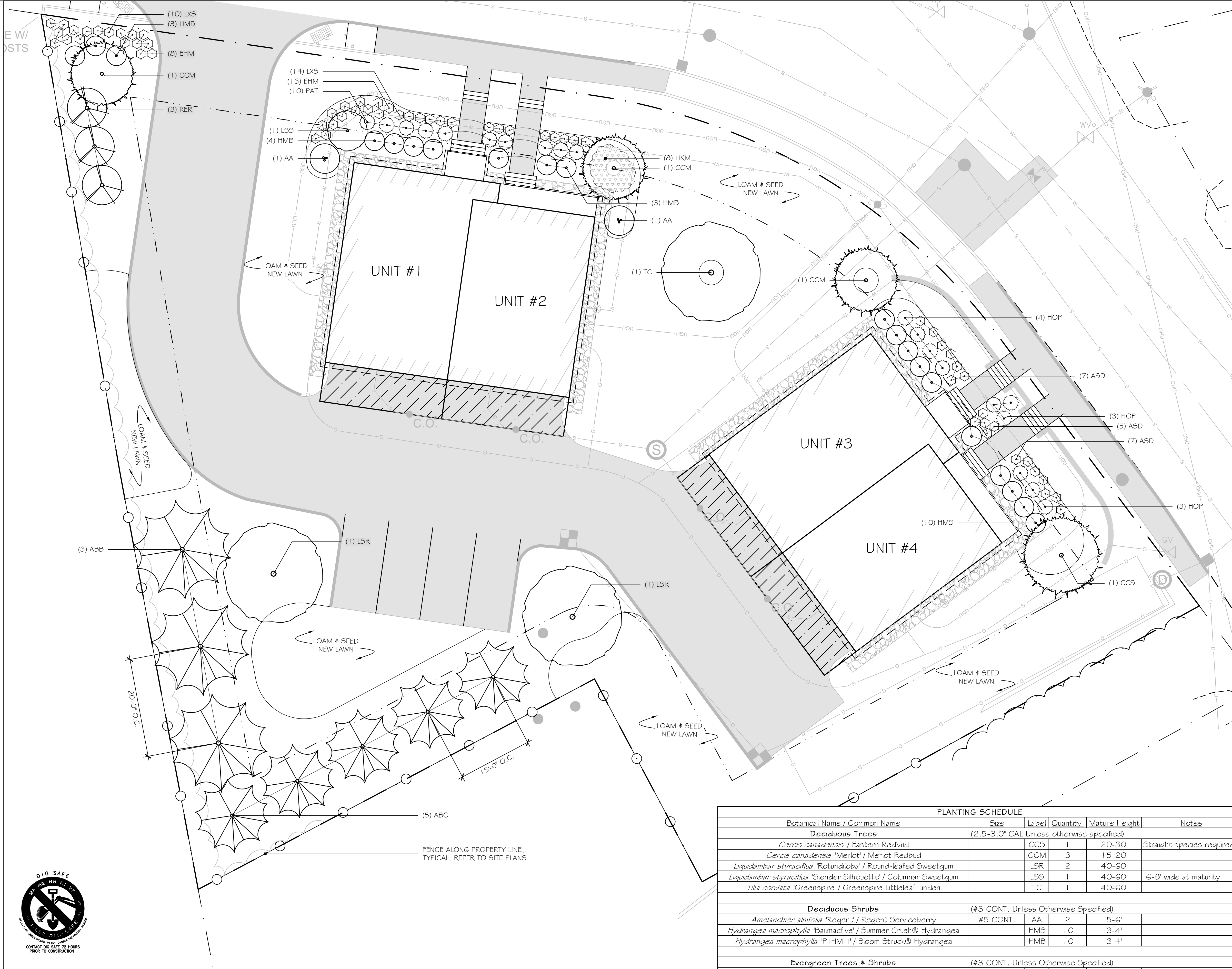
- NOTES:
1. FILTER MEDIA SHALL BE A COURSE COMPOSTED MATERIAL APPROVED BY ENGINEER.
 2. FILTER MEDIA TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

GENERAL NOTES

1. BASE PLAN DEVELOPED FROM INFORMATION PROVIDED ELECTRONICALLY BY WILCOX & BARTON INC., FILENAME: "HOUG0001.DWG" AND "UTILITY PLAN" FOR 46 MAIN RESIDENTIAL DEVELOPMENT EXETER, NH 03833, DATED 07/09/2024.
2. THIS PLAN WAS PRODUCED FOR LANDSCAPE DESIGN AND ASSOCIATED PERMITTING. THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINE LOCATION AND ORIENTATIONS PER ABOVE REFERENCED PLAN.
3. VERIFY LOCATIONS, ELEVATIONS, AND DIMENSIONS IN THE FIELD, PRIOR TO CONSTRUCTION. VERIFY FIELD CONDITIONS RELATING TO WORK TO BE INSTALLED. NOTIFY LANDSCAPE ARCHITECT OF ANY UNUSUAL OR DIFFICULT CONDITIONS IN A TIMELY FASHION PRIOR TO CONSTRUCTION CONCERNING THE CONDITION IN QUESTION.
4. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE TOWN OF EXETER AND STATE OF NEW HAMPSHIRE. NOTIFY APPROPRIATE AGENCIES AT LEAST 48 HOURS PRIOR TO PERFORMING THE WORK UNDER THEIR JURISDICTION.
5. NOTIFY LANDSCAPE ARCHITECT AT LEAST 72 HOURS PRIOR TO ANY ROUTINE REQUIRED FIELD OBSERVATION. OBTAIN LANDSCAPE ARCHITECT'S APPROVAL OF THE LAYOUT OF ALL IMPROVEMENTS PRIOR TO CONSTRUCTION.
6. CONTRACTOR IS RESPONSIBLE FOR REPAIR OF DAMAGE OR DISTURBANCE TO OTHER AREAS WHICH MAY OCCUR AS THE RESULT OF HIS/HER WORK WHETHER WITHIN OR OUTSIDE OF THE CONTRACT LIMIT LINES.
7. CONSTRUCTION SHALL FOLLOW THE SEQUENCES AND CONDITIONS ESTABLISHED IN THE SPECIFICATIONS AND PERMITS.
8. IT IS INTENDED THAT THE WORK BE EXECUTED IN ACCORDANCE WITH THE BEST CUSTOMARY BUILDING PRACTICES. IF WORK IS REQUIRED IN A MANNER TO MAKE IT IMPOSSIBLE TO PRODUCE FIRST-CLASS WORK OR IF ERRORS, CONFLICTS OR DISCREPANCIES APPEAR AMONG THE CONTRACT DOCUMENTS, INFORM THE LANDSCAPE ARCHITECT IMMEDIATELY AND REQUEST INTERPRETATION BEFORE PROCEEDING WITH THE WORK.
9. IF CONTRACTOR FAILS TO MAKE SUCH A STATEMENT AND REQUEST, NO EXCUSE WILL THEREAFTER BE ENTERTAINED, NOR ADDITIONAL EXPENSE BE ACCEPTED, FOR FAILURE TO CARRY OUT WORK IN A SATISFACTORY MANNER. SHOULD CONFLICT OCCUR IN OR BETWEEN DRAWINGS AND SPECIFICATIONS, CONTRACTOR IS DEEMED TO HAVE ESTIMATED ON THE MORE EXPENSIVE WAY OF DOING WORK UNLESS HE/SHE SHALL HAVE OBTAINED A WRITTEN DECISION, BEFORE SUBMITTING HIS BID, AS TO WHICH METHOD OR MATERIALS WILL BE REQUIRED.
10. CONTRACTOR IS RESPONSIBLE FOR ALL MATERIALS AND EQUIPMENT STORED AT SITE.
11. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE LANDSCAPE ARCHITECT FOR DIRECTION AND RESOLUTION PRIOR TO ANY FURTHER WORK.
12. VISIBLE EXISTING CONDITIONS WHERE FIELD LOCATED, AND UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE. SITE SUBCONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS, DIMENSIONS, AND GRADES PRIOR TO START OF ANY FOUNDATION OR UTILITY WORK.
13. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
14. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TERRAIN PLANNING & DESIGN LLC, DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR, ENGINEER OR LANDSCAPE ARCHITECT HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
15. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL EXISTING CONDITIONS SURROUNDING IT AND THEREON. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF HIS INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
16. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL LANDSCAPE ARCHITECT. TERRAIN PLANNING & DESIGN LLC ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT OF RECORD.
17. TERRAIN PLANNING & DESIGN LLC ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE LANDSCAPE ARCHITECT OF RECORD.
18. SITE CONTRACTOR IS RESPONSIBLE FOR CONTACTING DIG SAFE PRIOR TO ANY EXCAVATION, 1-888-DIG-SAFE.

PLANTING NOTES

1. CONTRACTOR SHALL OBTAIN APPROVAL FROM LANDSCAPE ARCHITECT PRIOR TO PURCHASING AND/OR INSTALLING SUBSTITUTE PLANT MATERIAL PRIOR TO PURCHASE OF ANY SUBSTITUTE MATERIALS.
2. CONSTRUCTION ACCESS WILL BE AS DIRECTED BY LANDSCAPE ARCHITECT. CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ACCESS ROUTE AND ALL AREAS DISTURBED BY PLANTING OPERATIONS UPON COMPLETION OF CONSTRUCTION OPERATIONS, AT NO ADDITIONAL COST TO THE OWNER.
3. LAYOUT OF ALL PLANTING BEDS AND LOCATION OF PLANTS TO BE APPROVED BY LANDSCAPE ARCHITECT ON SITE PRIOR TO CONSTRUCTION AND INSTALLATION.
4. CONTRACTOR TO REMOVE ALL DEBRIS GENERATED BY PLANT INSTALLATION. DEBRIS TO BE DISPOSED OF IN A LEGAL MANNER.
5. ALL PLANT MATERIAL SHALL BE GUARANTEED TO BE IN GOOD, HEALTHY AND FLOURISHING CONDITION FOR ONE YEAR FROM THE DATE OF FINAL INSTALLATION APPROVAL BY LANDSCAPE ARCHITECT. CONTRACTOR SHALL REPLACE, WITHOUT COST TO OWNER, AND AS SOON AS WEATHER CONDITIONS PERMIT, ALL DEAD AND NON-FLOURISHING PLANTS AS DETERMINED BY THE LANDSCAPE ARCHITECT. REPLACEMENT PLANTS SHALL BE GUARANTEED IDENTICALLY TO ORIGINAL PLANTS, TIME PERIOD COMMENCING FROM DATE OF REPLACEMENT PLANTING APPROVAL BY LANDSCAPE ARCHITECT.
6. ALL BEDS TO BE MULCHED WITH 4" DEPTH SHREDDED BARK MULCH UNLESS NOTED OTHERWISE.
7. CONTRACTOR TO PROVIDE NECESSARY TEMPORARY IRRIGATION IF NEEDED BASED ON TIME OF YEAR THE PROJECT IS IMPLEMENTED. REFER TO L-2 FOR PLANTING SCHEDULE AND DETAILS. ALL PLANT MATERIAL TO BE INSTALLED PER THE APPLICABLE DETAIL. CONTRACTOR TO REPLACE ALL IMPROPERLY INSTALLED PLANT MATERIAL IN KIND, WITHOUT COST TO OWNER.



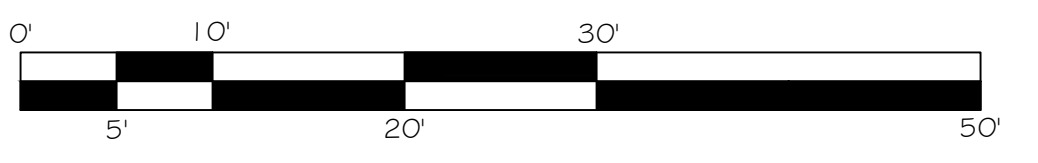
LINETYPE LEGEND	
	PROPERTY LINE (SUBJECT PARCEL)
	PROPERTY LINE (ABUTTER)
	PROPERTY SETBACK LINE
	PROPOSED FENCE
	PROPOSED TREELINE

APPROVED

TOWN PLANNING BOARD

TOWN OF EXETER, NEW HAMPSHIRE

Chairman
Date



311 kast hill road
hopkinton nh 03229
603.746.3512
terrainplanning.com

46 MAIN RESIDENTIAL DEVELOPMENT

Site Location:
46 Main St
Exeter, NH 03833
Tax Map: 63
Lot #: 1

Prepared For:
Wilcox & Barton Inc.
2 Home Avenue
Concord, NH 03301

PLANTING PLAN

DATE: 07-11-2024

SCALE: 1" = 10'

PROJECT #: 24047

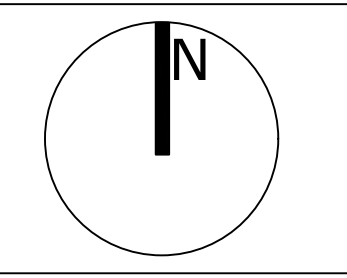
Drawn By: BDW

Checked By: ERB

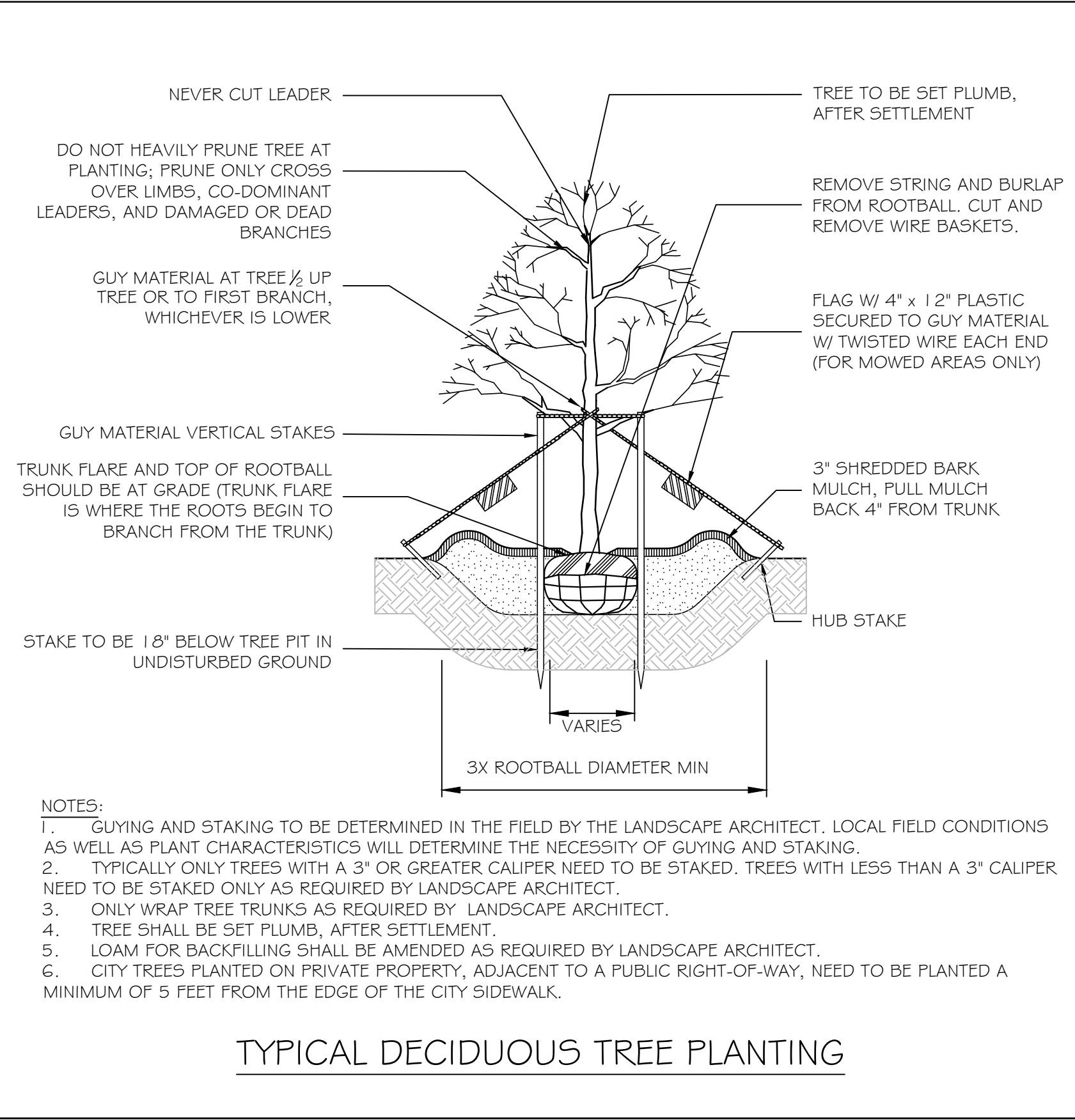
REVISIONS: DATE:
Revised per client comments
07/31/24

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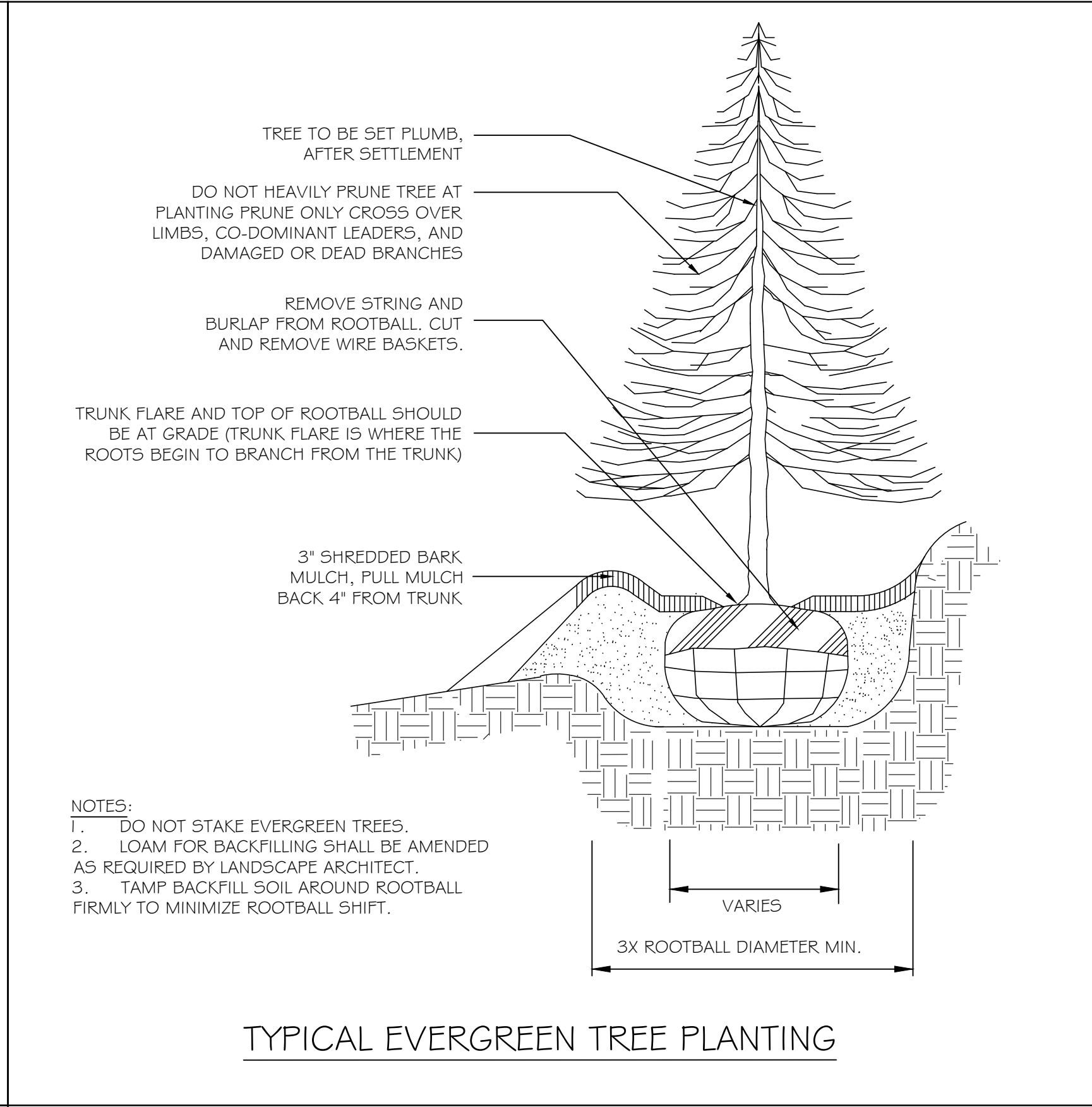
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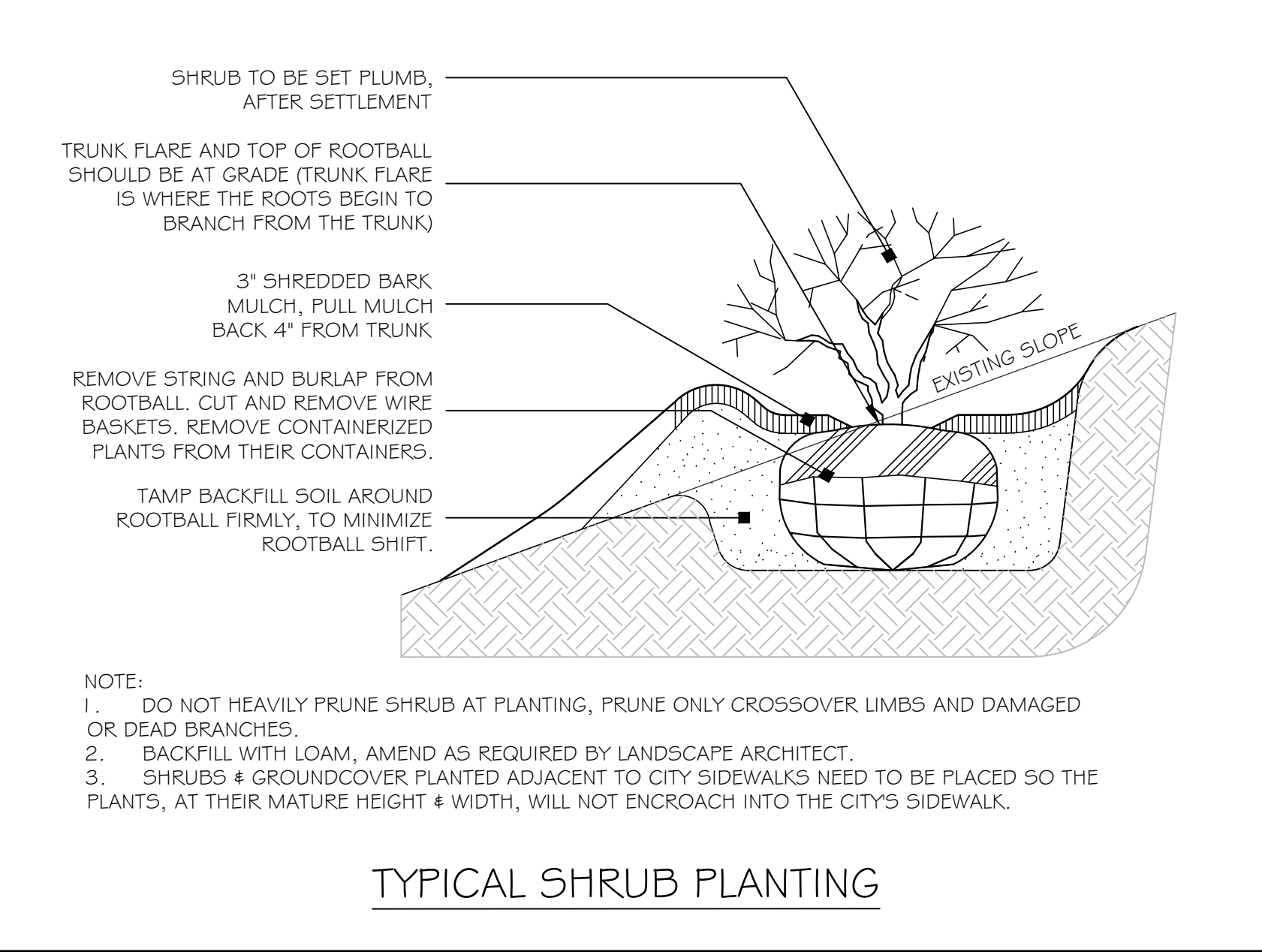
PLANTING SCHEDULE						
Botanical Name / Common Name	Size	Label	Quantity	Mature Height	Notes	
Deciduous Trees (2.5-3.0" CAL Unless otherwise specified)						
<i>Cercis canadensis</i> / Eastern Redbud		CCS	1	20-30'	Straight species required	
<i>Cercis canadensis</i> 'Merlot' / Merlot Redbud		CCM	3	15-20'		
<i>Liquidambar styraciflua</i> 'Rotundiloba' / Round-leaved Sweetgum		LSR	2	40-60'		
<i>Liquidambar styraciflua</i> 'Slender Silhouette' / Columnar Sweetgum		LSS	1	40-60'	6-8' wide at maturity	
<i>Tilia cordata</i> 'Greenspire' / Greenspire Littleleaf Linden		TC	1	40-60'		
Deciduous Shrubs (#3 CONT. Unless Otherwise Specified)						
<i>Amelanchier alnifolia</i> 'Regent' / Regent Serviceberry		AA	2	5-6'		
<i>Hydrangea macrophylla</i> 'Balmactive' / Summer Crush® Hydrangea		HMS	10	3-4'		
<i>Hydrangea macrophylla</i> 'Pillim-II' / Bloom Struck® Hydrangea		HMB	10	3-4'		
Evergreen Trees & Shrubs (#3 CONT. Unless Otherwise Specified)						
<i>Abies balsamea</i> / Balsam Fir	7-8' B4B	ABB	3	40-60'		
<i>Abies concolor</i> / White Fir	6-7' B4B	ABC	5	30-40'		
<i>Rhododendron</i> x 'English Roseum' / Hybnd Rhododendron		RER	3	8-12'		
Perennials & Ornamental Grasses (#1 CONT. # 30" O.C. Spacing Unless Otherwise Specified)						
<i>Astilbe</i> 'Snowdrift' / White Astilbe		ASD	19	18-24"		
<i>Echinacea</i> 'Harvest Moon' / Yellow Coneflower		EHM	22	30-36"		
<i>Hosta</i> 'Patnot' / Plantain Lily		HOP	10	18-24"		
<i>Leucanthemum x superbum</i> 'Becky' / Upnright Shasta Daisy		LXB	16	2-3"		
<i>Leucanthemum x superbum</i> 'Snowcap' / Dwarf Shasta Daisy		LXS	8	9-12"		
<i>Perovskia atriplicifolia</i> 'Crazy Blue' / Crazy Blue Russian Sage		PAT	10	12-18"		
Groundcover (2 QT. CONT. # 24" O.C. Spacing)						
<i>Hakonechloa macra</i> / Japanese Forest Grass		HKM	8	12-18"		



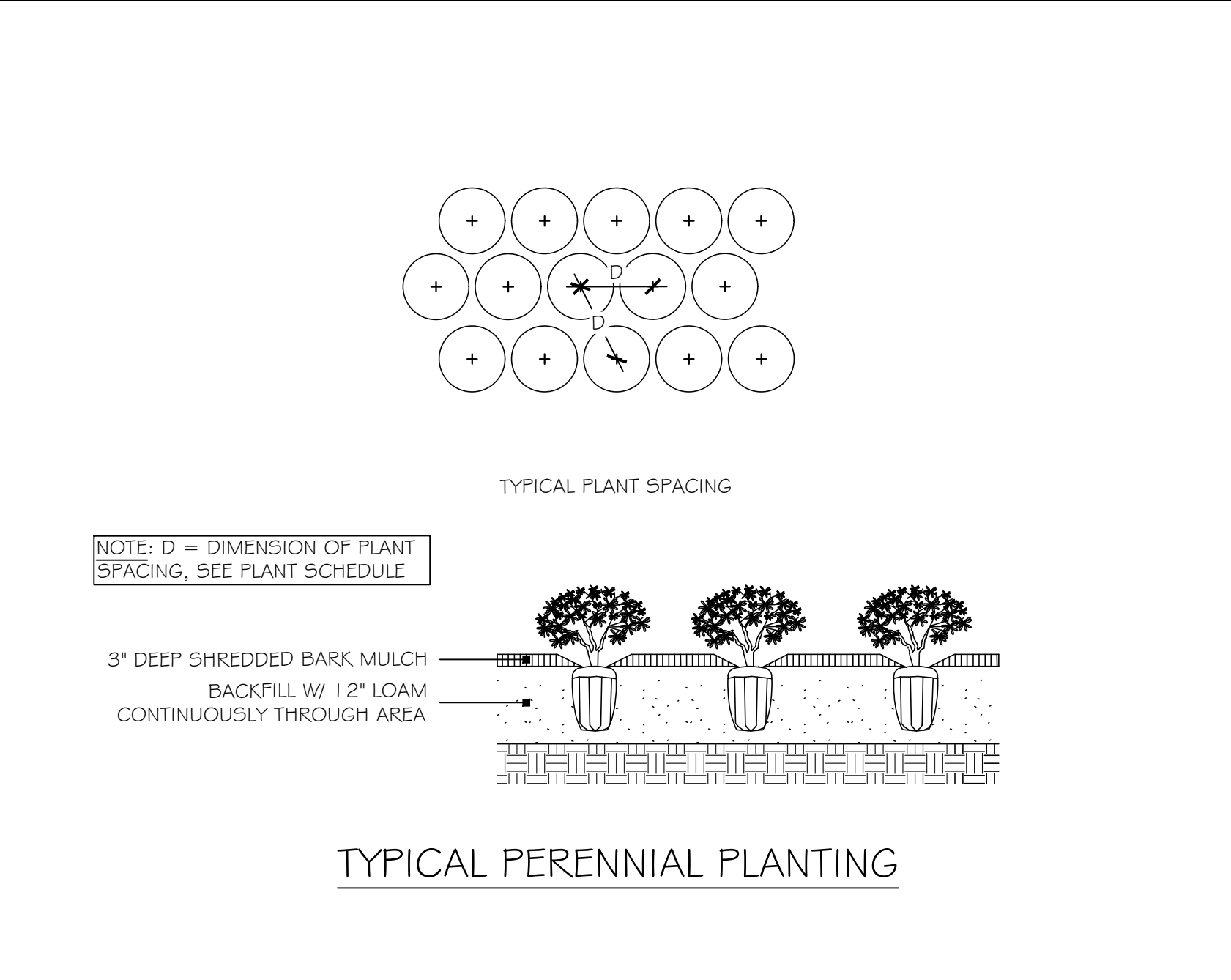
TYPICAL DECIDUOUS TREE PLANTING



TYPICAL EVERGREEN TREE PLANTING



TYPICAL SHRUB PLANTING

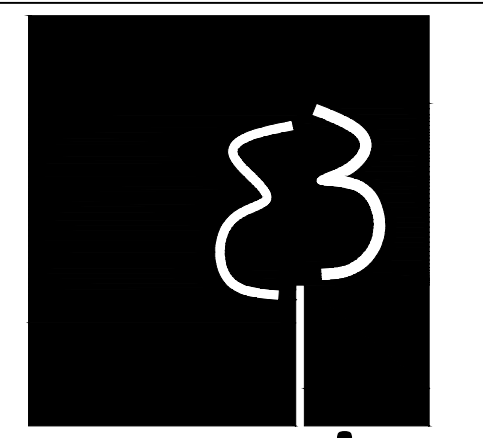


APPROVED

TOWN PLANNING BOARD
TOWN OF EXETER, NEW HAMPSHIRE

Chairman

Date



terrain
planning & design llc

311 kast hill road
hopkinton nh 03229
603. 746. 3512
terrainplanning.com

**46 MAIN
RESIDENTIAL
DEVELOPMENT**

Site Location:
46 Main St
Exeter, NH 03833
Tax Map: 63
Lot #: 1

Prepared For:
Wilcox & Barton Inc.
2 Home Avenue
Concord, NH 03301

**PLANTING SCHEDULE &
DETAILS**

DATE: 07-11-2024

SCALE: NTS

PROJECT #: 24047

Drawn By: BDW

Checked By: ERB

REVISIONS: DATE:
Revised per client comments
07/31/24

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L - 2



Gable & Wing Duplex

724.224 (7/8/2024)

NOTE: To scale as noted only if printed on 11x17 paper with "no scaling" (do not "Fit").

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Art Form Architecture, LLC

603-431-9559



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This design may not yet have Construction Drawings (as defined in the Terms), and is, therefore, only available as a Design Drawing (as defined in the Terms and together with Construction Drawings, "Drawings"). It is possible that during the conversion of a Design Drawing to a final Construction Drawing, changes may be necessary including, but not limited to, dimensional changes. Please see Plan Data Explained on www.artform.us to understand room sizes, dimensions and other data provided. We are not responsible for typographical errors.

Art Form Architecture ("Art Form") requires that our home designs be built substantially as designed. Art Form will not be obligated by or liable for use of this design with markups as part of any builder agreement. While we attempt to accommodate where possible and reasonable, and where the changes do not denigrate our design, any and all changes to Drawings must be approved in writing by Art Form. It is recommended that you have your Drawing updated by Art Form prior to attaching any Drawing to any builder agreement. Art Form shall not be responsible for the misuse of or unauthorized alterations to any of its Drawings.

Facade Changes:

- To maintain design integrity, we pay particular attention to features on the front facade, including but not limited to door surrounds, window casings, finished porch column sizes, and roof friezes. While we may allow builders to add their own flare to aesthetic elements, we don't allow our designs to be stripped of critical details. Any such alterations require the express written consent of Art Form.
- Increasing ceiling heights usually requires adjustments to window sizes and other exterior elements.

Floor plan layout and/or Structural Changes:

- Structural changes always require the express written consent of Art Form
- If you wish to move or remove walls or structural elements (such as removal of posts, increases in house size, ceiling height changes, addition of dormers, etc), please do not assume it can be done without other additional changes (even if the builder or lumber yard says you can).

7/8/2024

Gable & Wing Duplex

724.224 (7/8/2024)

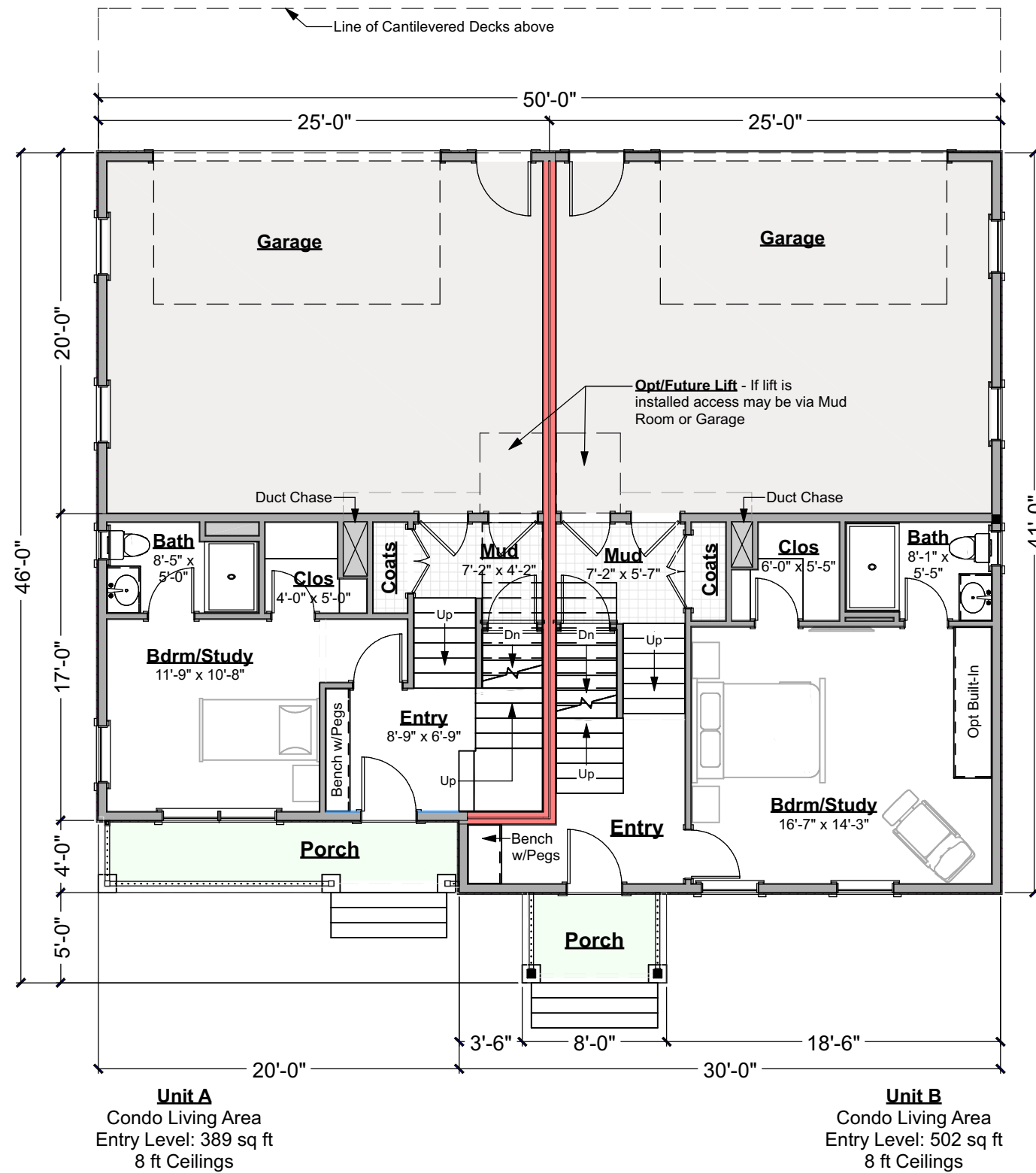
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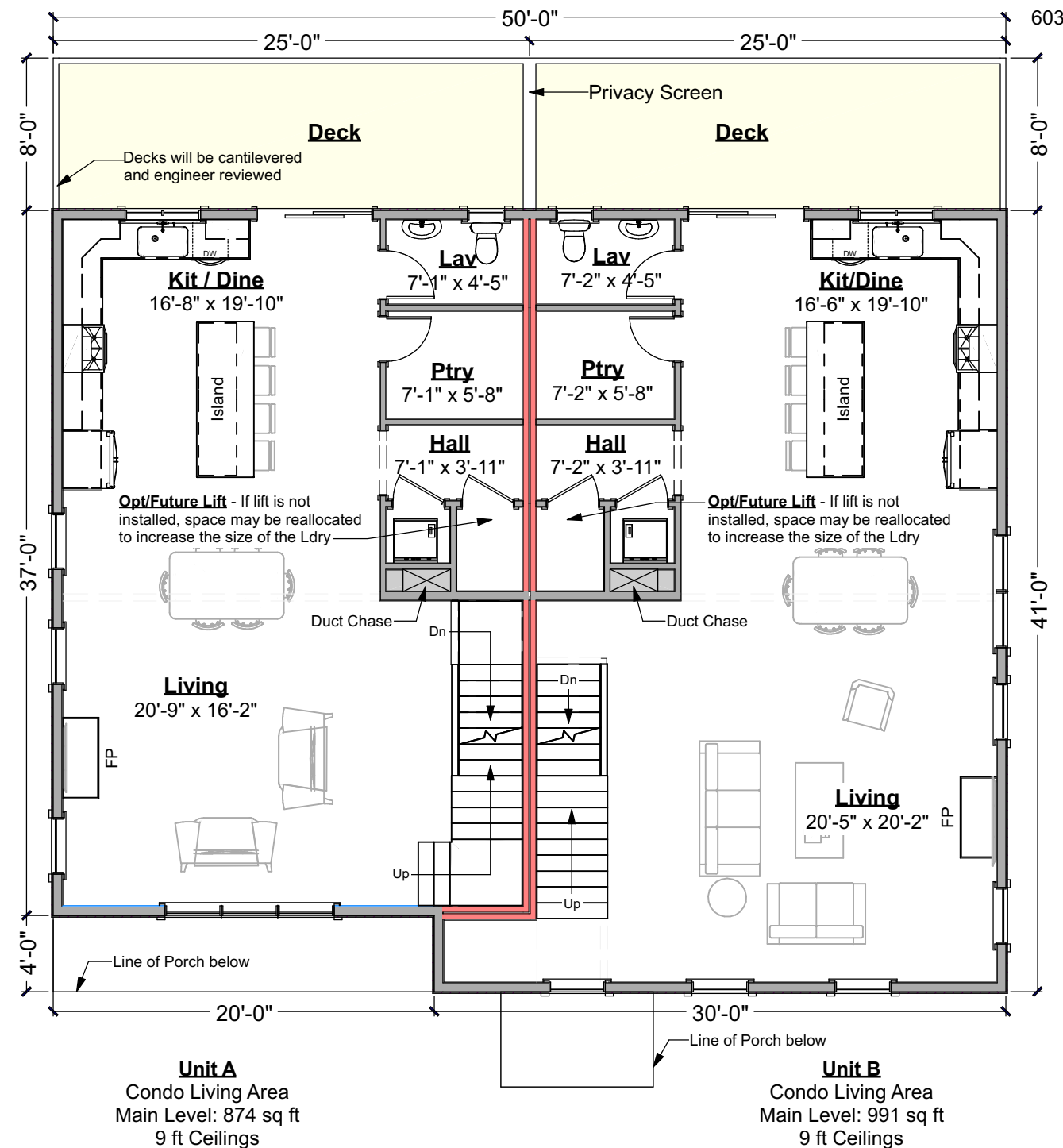
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603-431-9559



First Floor Plan

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



Second Floor Plan

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

Gable & Wing Duplex

724.224 (7/8/2024)

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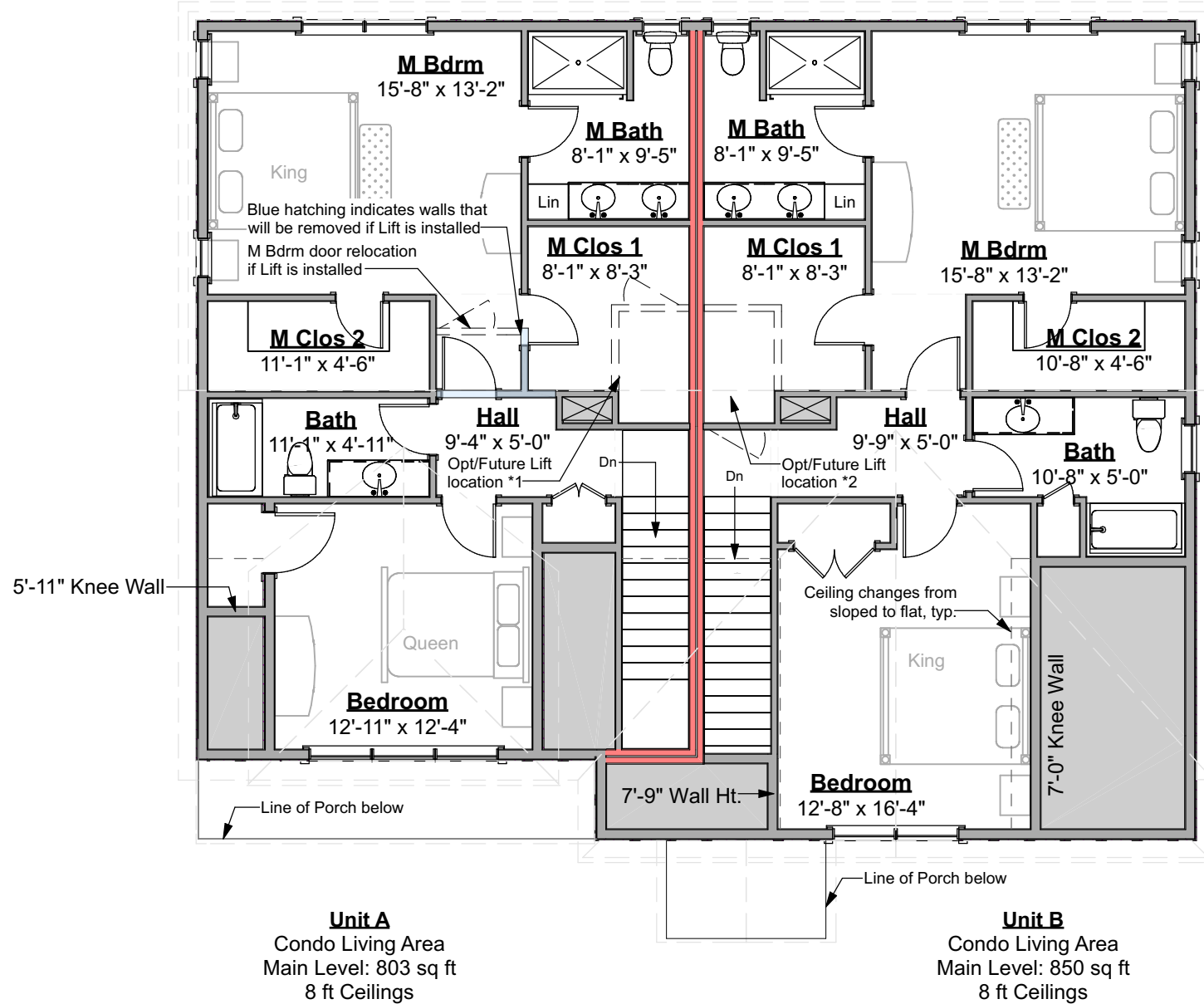
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*1 If Opt/Future lift is not installed the space allocated for M Clos 1 will become a Hallway and the door to the M Bdrm will be relocated in order to provide access from Lift to existing Hall.

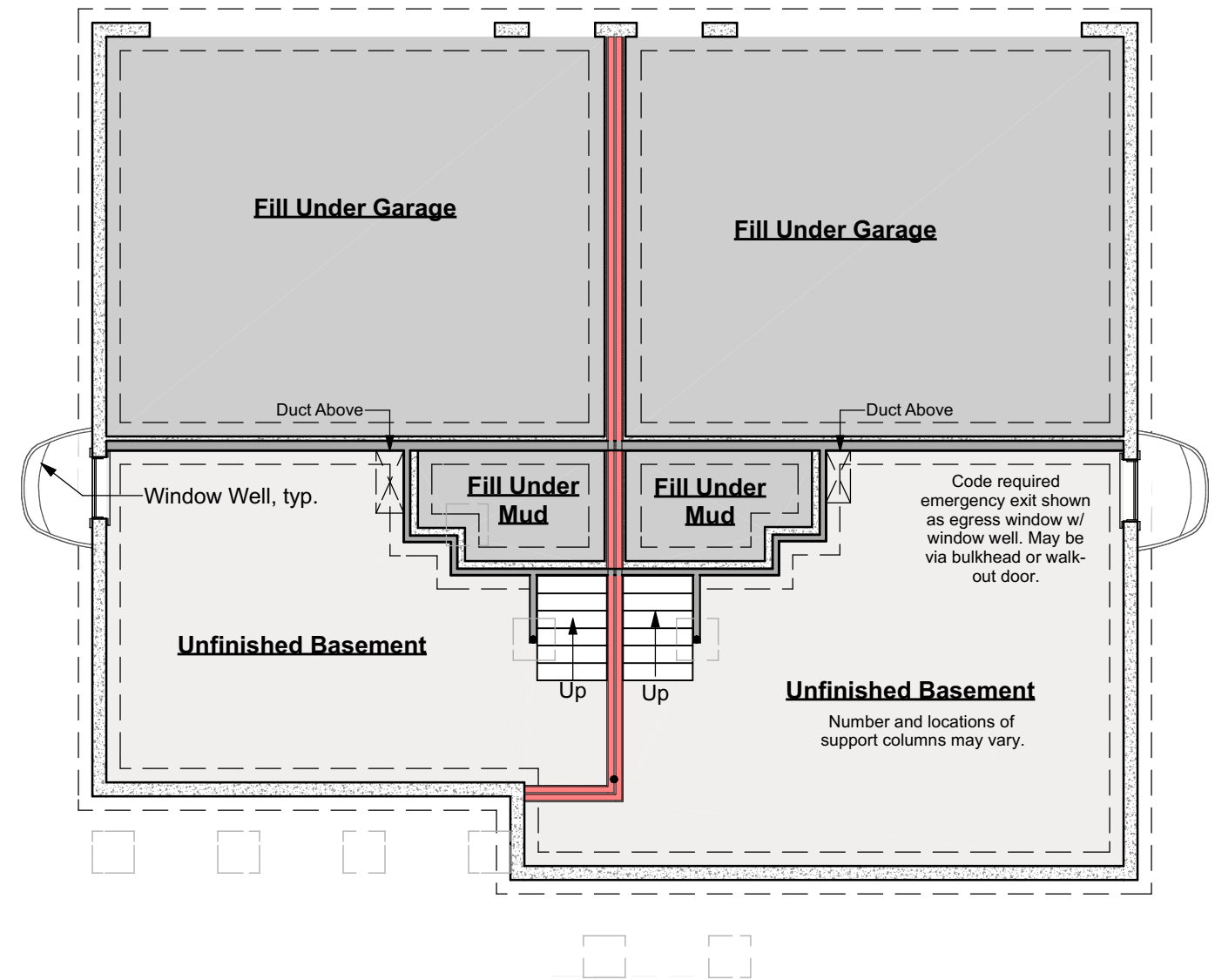
*2 If Opt/Future lift is installed M Clos space will be decreased to accommodate

Ceiling Heights May Vary: 8 ft Forms



Third Floor Plan

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



Foundation Plan

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

7/8/2024

Gable & Wing Duplex

724.224 (7/8/2024)

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603-431-9559



Front



Right

Front & Right Elevations
Scale: 1/8" = 1'-0"

7/8/2024

Gable & Wing Duplex

724.224 (7/8/2024)

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Art Form Architecture, LLC

603-431-9559



Rear



Left

Rear & Left Elevations
Scale: 1/8" = 1'-0"



Project No. 3079

August 5, 2024

Mr. David Sharples, Town Planner
Town Planning Office, Town of Exeter
10 Front Street
Exeter, NH 03833

*Re: Residences at 46 Main Street
Design Review Engineering Services
Exeter, New Hampshire*

Site Information:

Tax Map/Lot#:	63 / 1
Address:	46 Main Street
Lot Area:	0.68 Acres
Proposed Use:	Multi-Family Residential
Water:	Town
Sewer:	Town
Zoning District:	R-2 (Single-Family Residential)
Applicant:	Patrick Houghton
Design Engineer:	Wilcox & Barton, Inc.

Review No. 1

Application Materials Received:

- Site plan set entitled "46 Main Street Residential Development", dated July 9, 2024, prepared by Wilcox & Barton
- Site plan application materials prepared by Wilcox & Barton
- Stormwater Management Plan prepared by Wilcox & Barton

Dear Mr. Sharples:

Based on our review of the above information, in addition to comments provided by the Town, we offer the following comments in accordance with the Town of Exeter Regulations and standard engineering practice. Please note most of the items were discussed at the Technical Review Committee (TRC) meeting held on July 31, 2024.

General

1. The site has a history of soil and groundwater contamination per the historical use as a service station with fuel sales. NHDES OneStop shows a prior round of groundwater/soil remediation closed as of 2014. The design engineer indicated a recent Phase 1A environmental assessment has been completed. Any recommendations for soil or groundwater remediation, if any, should be performed prior to redevelopment.
2. In addition to the local permits listed on sheet C0.2, a Sewer Connection Permit is required from NHDES.
3. A connection to the existing municipal storm drain system is not allowed per section 9.3.2 of the Exeter site plan regulations. This connection must be removed, or a waiver request submitted.

Existing Conditions Plan

4. Label existing sewer information (inverts, size, materials) where known.
5. Add information regarding significant trees.
6. Label existing water main information.

Demolition Plan

7. Add a label directing the abandonment/removal the monitoring wells, as applicable, by a licensed well installation contractor in accordance with appropriate regulations.
8. We note the infiltration gallery will be installed next to the existing stone retaining wall in the northeast corner. Given that the stone retaining wall is proposed to remain in place, confirm it has been inspected to verify condition and stability,
9. Please note existing water and sewer services that will not be reused must be abandoned at the main.
10. Granite curb removed from the Town ROW should be salvaged to the Town DPW.

Site Plan

11. As discussed during the TRC meeting relocate the sidewalk to the ROW line.
12. Replace the sidewalk and curb in the area that will be disturbed to install new utility services.
13. Will the new 6' tall fence extend along the section of property line next to the infiltration gallery? Please clarify the intent of the limits of the fence.



Grading and Drainage Plan

14. Please add additional labels to the existing contours.
15. Please add a label indicating the existing TMH and valve box cover should be adjusted to finished grade.
16. Add a label on the plan for OSC-1.
17. Please add existing CB #4 to the drainage schedule or label the proposed invert in at CB #4.

Utility Plan

18. The proposed water and sewer services (next to Unit #3) do not maintain 10' of horizontal separation.
19. Please add notes/details indicating:
 - Buffalo boxes are required on the water services
 - The Contractor must always have an employee with an Exeter Utility Installer License onsite during installation of utilities within the Town's ROW.

Landscaping Plan

20. We recommend the plan be reviewed keeping in mind the following:
 - Headlights from cars at the intersection across the street (it was noted that the elevation of the building's first floor may be high enough that headlights may not be an issue)
 - Keeping a clear sight distance for cars leaving the driveway (it appears it will be clear per the current plan, just recommend confirming)
 - Conflicts with water/sewer service lines.

Stormwater Design and Modeling

21. Provide a narrative regarding pollutant loading and removal volumes.
22. As drip edges are often undermaintained by property owners and are subject to clogging, please discuss the level of conservativeness in the design.
23. A source document on NHDES OneStop indicates the water table is between 5.5' and 7' below grade in the area of the proposed infiltration gallery. Please confirm minimum separation will be achieved.
24. PTAP Database: This project requires registration with the PTAP Database. The Applicant is requested to enter project related stormwater tracking information contained in the site plan application documents using the Great Bay Pollution Tracking and Accounting Program (PTAP) database (www.unh.edu/unhsc/ptapp) and submit the information with the resubmitted response to comments.



A written response is required to facilitate future reviews. Please contact us if you have any questions.

Very truly yours,

UNDERWOOD ENGINEERS, INC.

Allison M. Rees, P.E. (NH)
Project Manager



Robert J. Saunders, P.E. (NH, ME, VT)
Senior Project Engineer



August 12, 2024

Town of Exeter Planning Board
Town Planning Office, Town of Exeter
10 Front Street
Exeter, NH 03833

**RE: Response to Comments – 46 Main Residential Development
46 Main Street, Exeter, NH**

Dear Planning Board:

Wilcox & Barton, Inc. is pleased to submit this letter addressing the comments provided at the Technical Review Committee meeting on July 31, 2024, and in a letter from Underwood Engineers, Inc., dated August 5, 2024. Enclosed please find electronic copies of the revised plans in response to the Town of Exeter comments and a copy of the revised Stormwater Management Plan. The plans have been revised as follows:

Technical Review Committee Comments:

1. Request the applicant bring the sidewalk in the center of the site towards the property line to create additional space in the bike lane.
Response: The sidewalk has been revised as requested.
2. Consider installing electric conduit under Main Street rather than installing a new pole on the edge of the property with overhead wires.
Response: We have reached out to Utili to request input on the request to install underground conduit in Main Street. We revised the plan to show the proposed underground installation and will work with Utili to determine if it is feasible.
3. The project is subject to the Multi-family Section of the Site Plan Regulations. Review the section to ensure compliance.
Response: The site plan has been revised to designate 1,600 SF of common recreational space.
4. The sidewalk currently has a double granite curbline. Any excess granite curb from the sidewalk reconstruction shall be returned to the Town of Exeter.
Response: A note has been added to the Demolition Plan.
5. The Town will assign building numbers.
Response: We will update the building numbers once provided by the town.

Underwood Engineers Letter dated August 5, 2024:

1. The site has a history of soil and groundwater contamination per the historical use as a service station with fuel sales. NHDES OneStop shows a prior round of groundwater/soil remediation closed as of 2014. The design engineer indicated a recent Phase 1A environmental assessment has been completed. Any recommendations for soil or groundwater remediation, if any, should be performed prior to redevelopment.

Response: Wilcox & Barton, Inc. performed a file review on behalf of the applicant, though a formal Phase I ESA was not prepared. As noted, the remediation was closed as of 2014. A note has been added to the plan on Sheet C0.2 indicating that construction will be performed in accordance with state and federal regulations. If soil and/or groundwater contamination is encountered, it will be managed in accordance with NH Code of Administrative Rules, Env-Or 600, *Contaminated Site Management*.

2. In addition to the local permits listed on sheet C0.2, a Sewer Connection Permit is required from NHDES. A permit appl

Response: A note has been added to sheet C0.2 stating that a Sewer Connection Permit is required from NHDES.

3. A connection to the existing municipal storm drain system is not allowed per Section 9.3.2 of the Exeter site plan regulations. This connection must be removed, or a waiver request submitted.

Response: A waiver has been requested to connect to the existing municipal storm drain system and a note has been added to the site plan indicating as such.

4. Label existing sewer information (inverts, size, materials) where known.

Response: Existing Conditions Plan now includes labels for existing sewer information.

5. Add information regarding significant trees.

Response: Existing tree information will be provided in the near future.

6. Label existing water main information.

Response: The Existing Conditions Plan will be updated in the near future.

7. Add a label directing the abandonment/removal of the monitoring wells, as applicable, by a licensed well installation contractor in accordance with appropriate regulations.

Response: A label has been added to the Demolition Plan directing the removal of existing monitoring wells by a licensed well installation contractor.

8. We note the infiltration gallery will be installed next to the existing stone retaining wall in the northwest corner. Given that the stone retaining wall is proposed to remain in place, confirm it has been inspected to verify condition and stability.

Response: The stone retaining wall is now proposed to be demolished prior to construction.

9. Please note existing water and sewer services that will not be reused must be abandoned at the main.

Response: The Demolition Plan now notes that the water service that will not be reused shall be abandoned at the main.

10. Granite curb removed from the Town ROW should be salvaged to the Town DPW.

Response: A label has been added to the Demolition Plan indicating that existing granite curb removed from the Town ROW shall be salvaged to the Town DPW.

11. As discussed during the TRC meeting, relocate the sidewalk to the ROW line.

Response: The sidewalk has been relocated to the ROW line.

12. Replace the sidewalk and curb in the area that will be disturbed to install new utility services.

Response: The Site Plan now indicates that the sidewalk and curb shall be replaced in the area that will be disturbed to install new utility services.

13. Will the new 6' tall fence extend along the section of property line next to the infiltration gallery? Please clarify the intent of the limits of the fence.

Response: We have extended the fence along the length of the infiltration gallery.

14. Please add additional labels to the existing contours.

Response: Additional labels have been added to the existing contours.

15. Please add a label indicating the existing TMH and valve box cover should be adjusted to finished grade.

Response: Labels have been added to the Grading & Drainage Plan indicating that the TMH and valve box shall be adjusted to finished grade.

16. Add a label on the plan for OCS-1.

Response: A label for OCS-1 has been added to the Grading & Drainage Plan.

17. Please add existing CB #4 to the drainage schedule or label the proposed invert in at CB #4.

Response: Existing CB #4 has been added to the drainage schedule.

18. The proposed water and sewer services (next to Unit #3) do not maintain 10' of horizontal separation.

Response: A note has been added to the Sewer Schedule indicating that schedule 26 sewer service shall be utilized where water and sewer have less than 10' of horizontal separation.

19. Please add notes/details indicating:

- Buffalo boxes are required on the water services.
- The Contractor must always have an employee with an Exeter Utility Installer License onsite during installation of utilities within the Town's ROW.

Response: A note has been added to the Utility Plan indicating that an employee with an Exeter Utility Installer License must be onsite during installation of utilities within the Town's ROW. A label has also been added indicating that buffalo boxes shall be installed on the water services.

20. We recommend the plan be reviewed keeping in mind the following:

- Headlights from cars at the intersection across the street (it was noted that the elevation of the building's first floor may be high enough that headlights may not be an issue).
- Keeping a clear sight distance for cars leaving the driveway (it appears it will be

clear per the current plan, just recommend confirming).

- Conflicts with water/sewer service lines.

Response: All above recommendations have been reviewed and taken into consideration.

21. Provide a narrative regarding pollutant loading and removal volumes.

Response: The Stormwater Management Plan has been revised to include the Pollutant Loading and Removal Volumes within Section 5.0 of the plan.

22. As drip edges are often undermaintained by property owners and are subject to clogging, please discuss the level of conservativeness in the design.

Response: The drip edges have been sized with the minimum required dimensions of 4' x 4', ensuring that they effectively manage incoming runoff without overflowing during all applicable stormwater events – up to the 50-year storm event. Additionally, a safety factor of 2 has been applied to the maximum infiltration rate in the design. The information has been included in the revised stormwater narrative.

23. A source document on NHDES OneStop indicates the water table is between 5.5' and 7' below grade in the area of the proposed infiltration gallery. Please confirm minimum separation will be achieved.

Response: The infiltration gallery is positioned 3 feet above the estimated water table per the NRCS soil information and 2 feet below the finish grade, meeting the minimum requirements for both separation and cover. Before construction begins, a qualified CPESC, soil geologist, or engineer will conduct a confirmatory test pit at the location of the infiltration practice to ensure adequate separation. The confirmatory test pit log will be submitted to the Town of Exeter to confirm the site conditions meet regulatory requirements.

24. PTAP Database: This project requires registration with the PTAP Database. The Applicant is requested to enter project related stormwater tracking information contained in the site plan application documents using the Great Bay Pollution Tracking and Accounting Program (PTAP) database (www.unh.edu/unhsc/ptapp) and submit the information with the resubmitted response to comments.

Response: This registration has been submitted on the PTAP Database. This requirement has been noted on sheet C0.2, Notes & Legend.

If you have any questions, or require additional information, please contact me at (603) 731-9883.

Very truly yours,
WILCOX & BARTON, INC.



Erin R. Lambert, P.E, LEED AP
Senior Vice President of Civil Engineering

Wilcox & Barton INC.

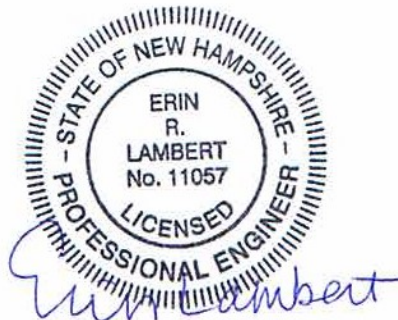
CIVIL • ENVIRONMENTAL • GEOTECHNICAL

STORMWATER MANAGEMENT PLAN for

46 Main Residential Development
46 Main Street
Exeter, NH 03833

Prepared for:
Patrick Houghton
210 LedgeWood Rd.
Manchester, NH 03104

Prepared by:
Wilcox & Barton, Inc.
2 Home Ave.
Concord, New Hampshire 03301
Contact: Erin R. Lambert, PE, (603) 369-4190 x527



Wilcox & Barton, Inc.
Project No.: HOUG0001

July 9, 2024
Revised: August 12, 2024

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1.0 PROJECT NARRATIVE

1.1 Project Description

The project consists of developing the existing parcel (Tax Map 63, Lot 1) with the construction of four new 2-story residential units. Work involved includes the construction of paved driveway, parking lot, sidewalks, retaining wall, snow storage, and the implementation of stormwater and erosion control measures. Currently, the project parcel is fully developed with a total lot size of 26,389-SF (0.6 acres) with an impervious area coverage of 7,889-SF (0.18 acres) for a commercial garage. The parcel currently includes a fully developed area with an operational automobile repair garage with a supporting storage container. As part of this project, the current building, paved areas, concrete pad, and stone walkway will be demolished, and the existing storage container will be removed from the premises. Construction activities are expected to increase the impervious area coverage to approximately 11,200-SF (0.26 acres). The area of disturbance is less than 100,000-SF, which therefore does not necessitate an Alteration of Terrain permit. The project seeks to effectively control stormwater runoff from the buildings by employing stone drip edges to capture and infiltrate runoff from the roofs. The goal is to eliminate pollutants and regulate peak flows to levels below pre-development conditions. Runoff from pavement and sidewalks will be collected through two proposed catch basin structures and routed to the proposed infiltration gallery. Overflow from the infiltration gallery is directed to the off-site stormwater system on Main Street. Sediment control will be achieved through the application of a silt fencing and/or filter sock during construction.

1.2 Site Soils

On-site soils consist of Urban land-Hoosic complex, 3 to 15 percent slopes classified as hydrologic soil group A. The Urban land-Hoosic soils located on-site, and in the report, have an infiltration rate measured at 2.0-20 inches/hour. The proposed drainage system locations are fully within the Urban land-Hoosic complex, so the infiltration rate was modeled at 1.0 inches/hour after a safety factor of 2 was implemented. Confirmatory test pits will be performed prior to the start of construction at the location of each infiltration practice. Test pit logs will be submitted to the Town of Exeter to confirm the relevant design assumptions. A qualified CPESC, soil scientist geologist, or engineer shall be retained to perform the confirmatory test pits to confirm the minimum separation of 3-feet from the bottom of the practice to the elevation of seasonal high water and bedrock. Refer to the NRCS Soil Information report (Section 2.0) for more soil information.

1.3 Pre-Development Watershed

The pre-development watershed consists of the entire project area. The existing lot features impervious surfaces, consisting of pavement, concrete, gravel, and one garage building. The area surrounding the developed area includes landscaped areas and woods. No drainage systems currently exist on-site. The terrain of the parcel slopes in four directions: towards the northeast and southeast side facing Main Street, south towards the abutter at 44 Main Street, and southwest towards 10 Ash Street abutter. As a result, the pre-development watershed has been depicted with three points of interest (POI) considering Main Street as one point of interest. Please refer to the

pre-development stormwater plan for delineations of sub-watershed boundaries and the precise location of the POIs.

POI #1- The POI#1 pre-development watershed will include the northern portions of the property, including: the existing garage building, storage container, concrete pad, a portion of the pavement, retaining wall, and landscaped and wooded areas. Runoff from this area is directed towards Main Street.

POI #2- The POI#2 pre-development watershed area will include part of the landscaped and wooded areas to the southwest of existing developed area. Runoff is directed via overland flow to the southwestern property boundary line.

POI #3- The POI#3 pre-development watershed area will include part of the retaining wall and most part of the landscaped area along the eastern property boundary line. Runoff is directed via overland flow to the eastern property boundary line.

1.4 Post-Development Watershed

The post-development watershed consists of the same cumulative area as the pre-development watershed. Post-development cover will consist of pavement, proposed residential buildings, and landscaped areas. Construction of the project will not change the locations of the POIs, though the drainage areas to each will change.

The project proposes an overall increase to the impervious cover on-site. The post-development watershed provides peak flows to levels below the pre-development watershed conditions. To the maximum extent feasible, the proposed development runoff will be directed to either the two building drip edges or to the two proposed catch basins and connected infiltration gallery prior to reaching the points of interest. The building drip edges and infiltration gallery allows for infiltration into the native materials below, providing treatment and peak flow control.

POI #1- The POI#1 post-development watershed will include the entirety of the property's redevelopment area including the proposed buildings, driveway, parking spaces, and sidewalks. Runoff from the developed area is directed to the building drip edges or to the infiltration gallery prior to ultimately discharging to the closed drainage system on Main Street.

POI #2- The POI#2 pre-development watershed area will include part of the landscaped and wooded areas to the west of existing developed area. Runoff is directed via overland flow to the southwestern property boundary line.

POI #3- The POI#3 point of interest will have no runoff directed to this location (western property boundary line) during post-development conditions as a result of the proposed stormwater management systems in POI#1.

1.5 Schedule

Construction is planned to commence upon approval from the Town of Exeter in Fall 2024 and is anticipated to be completed by Spring 2025.

1.6 Points of Interest

There are three points of interest in the hydraulic model. Please see the pre-development and post-development watershed section for a description of the point of interest.

1.7 Erosion Sediment Control/Site Stabilization

The methods to be used to control sediment migration and erosion of the site include use of filter socks, silt fencing, and landscaping in accordance with best management practices. The contractor will be responsible for all temporary erosion and sediment control measures during construction, while the property owner will be ultimately responsible for maintaining all permanent erosion and sediment control measures as may be required.

1.8 Water Quality

During construction activities, filter sock and silt fencing will maintain the quality of stormwater leaving the site. Runoff from disturbed areas shall be directed to depressions to infiltrate into the groundwater and allow for settling of sediments/pollutants. After construction is completed and the site is stabilized, stormwater quality will be maintained by soil infiltration at the building drip edges and infiltration gallery. The post-development stormwater controls provide pollutant load reductions as required by the Town and New Hampshire Department of Environmental Services. Please see Section 5.0, Pollutant Loading and Removal Volumes, for more information.

1.9 Summary of Results

POI		Peak Discharge					
		2-yr		10-yr		25-yr	50-yr
		Peak Q	Discharged Volume	Peak Q	Discharged Volume	Peak Q	Peak Q
#1	Pre	0.43 cfs	0.04 ac-ft	0.66 cfs	0.07 ac-ft	0.85 cfs	1.06 cfs
	Post	0.07 cfs	0.01 ac-ft	0.21 cfs	0.02 ac-ft	0.55 cfs	1.03 cfs
#2	Pre	0.00 cfs	0.00 ac-ft	0.00 cfs	0.00 ac-ft	0.01 cfs	0.03 cfs
	Post	0.00 cfs	0.00 ac-ft	0.00 cfs	0.00 ac-ft	0.01 cfs	0.02 cfs
#3	Pre	0.00 cfs	0.00 ac-ft	0.00 cfs	0.00 ac-ft	0.01 cfs	0.03 cfs
	Post	0.00 cfs	0.00 ac-ft	0.00 cfs	0.00 ac-ft	0.00 cfs	0.00 cfs

1.10 Conclusions

The preceding table and following calculations indicate that the post-development peak flow rates of the property decrease when compared to the pre-development peak flow in the 2-year, 10-year, 25-year, and 50-year storm events for all points of interest. The post-development discharged

volume shows a decrease when compared to the pre-development discharged volumes in all storm events. The rates show a decrease for POI #1 due to the proposed stormwater management systems in the redevelopment area.

Stormwater from the proposed development area is directed to the two building drip edges and to the proposed infiltration gallery. The building drip edges have been designed to confirm that no overtopping occurs during the 50-year storm event. Overflow from the infiltration gallery is ultimately directed to the off-site closed drainage network at Main Street (POI #1).

The proposed design meets the Env-Wq 1507.05 Channel Protection Requirement. The 2-year, 24-hour post-development peak flow rates at the points of interest are less than the 2-year, 24-hour pre-development peak flow rate.

Calculations are included for the 2-year, 10-year, 25-year, and 50-year events.

2.0 NRCS SOIL INFORMATION





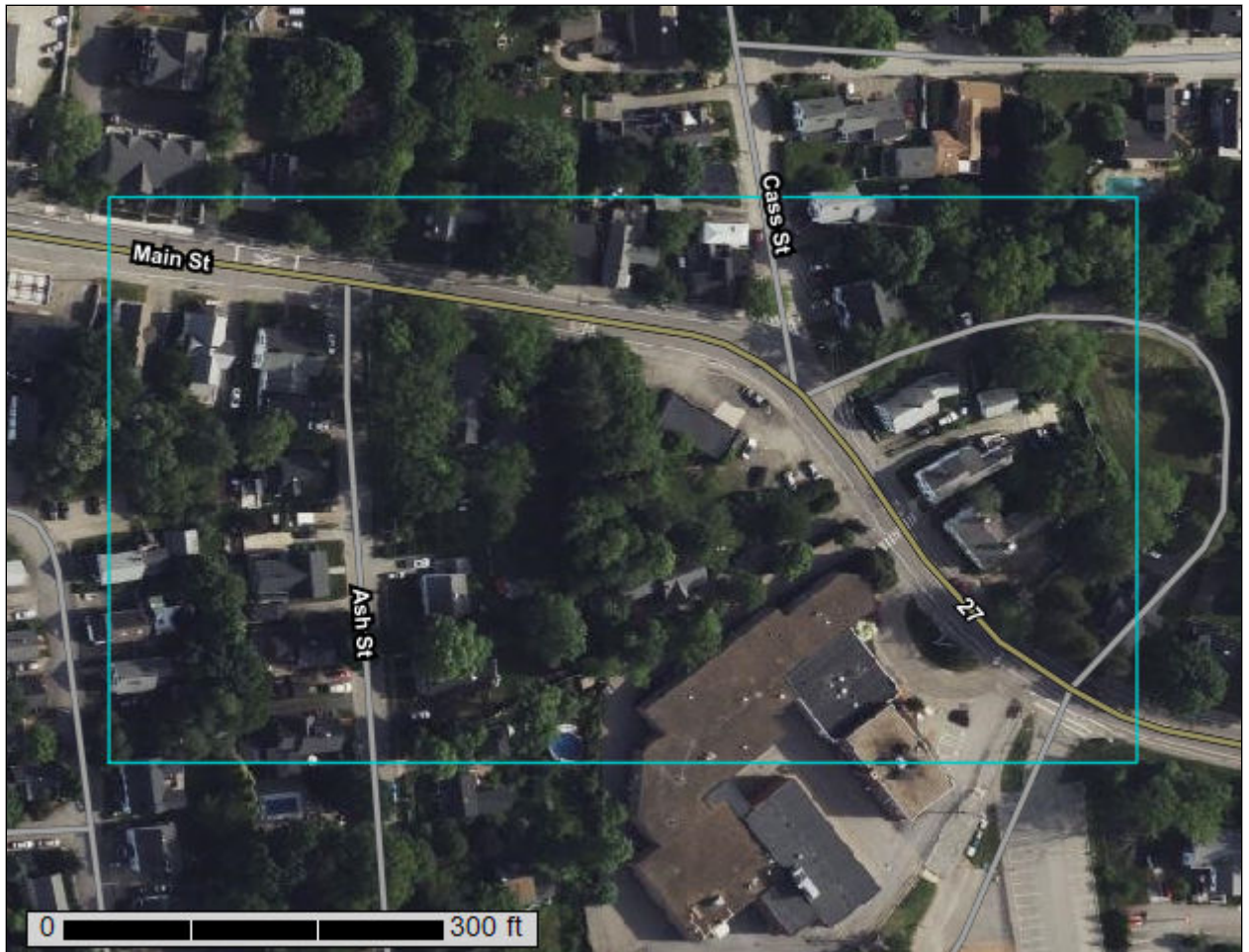
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Rockingham County, New Hampshire



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

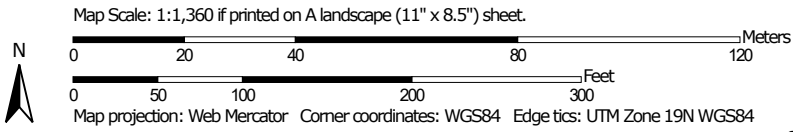
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
 Survey Area Data: Version 26, Aug 22, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
599	Urban land-Hoosic complex, 3 to 15 percent slopes	7.5	90.0%
699	Urban land	0.8	10.0%
Totals for Area of Interest		8.4	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

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onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

599—Urban land-Hoosic complex, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9cpg
Elevation: 90 to 1,100 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 120 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 55 percent
Hoosic and similar soils: 25 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hoosic

Setting

Parent material: Outwash

Typical profile

H1 - 0 to 8 inches: gravelly fine sandy loam
H2 - 8 to 15 inches: very gravelly fine sandy loam
H3 - 15 to 60 inches: very gravelly coarse sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Udorthents

Percent of map unit: 4 percent
Hydric soil rating: No

Scitico

Percent of map unit: 4 percent
Landform: Marine terraces

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Hydric soil rating: Yes

Eldridge

Percent of map unit: 4 percent

Hydric soil rating: No

Squamscott

Percent of map unit: 4 percent

Landform: Marine terraces

Hydric soil rating: Yes

Newfields

Percent of map unit: 4 percent

Hydric soil rating: No

699—Urban land

Map Unit Composition

Urban land: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Not named

Percent of map unit: 15 percent

Hydric soil rating: No

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3.0 HYDRAULIC CALCULATIONS

- 3.1 Extreme Precipitations
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 - 3.5.8 10-yr Storm Full Summary



Extreme Precipitation Tables

Northeast Regional Climate Center

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

Metadata for Point	
Smoothing	Yes
State	
Location	
Latitude	42.982 degrees North
Longitude	70.955 degrees West
Elevation	10 feet
Date/Time	Thu Jun 27 2024 09:02:46 GMT-0400 (Eastern Daylight Time)

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	0.66	0.82	1.04	1yr	0.71	0.99	1.22	1.57	2.05	2.68	2.90	1yr	2.37	2.79	3.20	3.91	4.53	1yr
2yr	0.32	0.50	0.62	0.82	1.03	1.30	2yr	0.89	1.18	1.52	1.94	2.49	3.21	3.56	2yr	2.84	3.43	3.94	4.67	5.32	2yr
5yr	0.38	0.58	0.73	0.98	1.26	1.62	5yr	1.08	1.47	1.90	2.45	3.16	4.09	4.58	5yr	3.62	4.41	5.04	5.96	6.74	5yr
10yr	0.42	0.66	0.83	1.13	1.46	1.91	10yr	1.26	1.73	2.25	2.92	3.78	4.90	5.55	10yr	4.34	5.33	6.08	7.18	8.06	10yr
25yr	0.49	0.77	0.98	1.35	1.80	2.37	25yr	1.55	2.16	2.81	3.67	4.79	6.24	7.14	25yr	5.52	6.87	7.78	9.19	10.22	25yr
50yr	0.55	0.87	1.12	1.57	2.11	2.80	50yr	1.82	2.55	3.34	4.39	5.75	7.49	8.65	50yr	6.63	8.32	9.39	11.07	12.24	50yr
100yr	0.61	0.99	1.27	1.81	2.47	3.32	100yr	2.13	3.01	3.98	5.25	6.89	8.99	10.49	100yr	7.96	10.08	11.33	13.35	14.66	100yr
200yr	0.69	1.13	1.46	2.10	2.89	3.92	200yr	2.50	3.56	4.72	6.26	8.24	10.81	12.71	200yr	9.56	12.22	13.68	16.11	17.57	200yr
500yr	0.81	1.34	1.75	2.55	3.57	4.90	500yr	3.08	4.44	5.93	7.92	10.48	13.78	16.39	500yr	12.20	15.76	17.55	20.67	22.34	500yr

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.61	0.75	0.89	1yr	0.65	0.87	0.95	1.25	1.53	2.29	2.53	1yr	2.03	2.44	2.89	3.44	4.02	1yr
2yr	0.32	0.49	0.60	0.82	1.01	1.19	2yr	0.87	1.16	1.37	1.82	2.33	3.11	3.48	2yr	2.75	3.35	3.84	4.55	5.13	2yr
5yr	0.36	0.55	0.68	0.94	1.19	1.42	5yr	1.03	1.39	1.62	2.12	2.73	3.80	4.24	5yr	3.36	4.08	4.68	5.61	6.29	5yr
10yr	0.40	0.61	0.75	1.05	1.36	1.63	10yr	1.17	1.59	1.82	2.40	3.07	4.37	4.92	10yr	3.87	4.73	5.43	6.53	7.22	10yr
25yr	0.46	0.69	0.86	1.23	1.62	1.95	25yr	1.40	1.91	2.12	2.78	3.58	4.94	5.97	25yr	4.37	5.74	6.58	7.98	8.90	25yr
50yr	0.51	0.77	0.96	1.38	1.86	2.25	50yr	1.60	2.20	2.36	3.12	4.01	5.59	6.89	50yr	4.94	6.63	7.61	9.29	10.28	50yr
100yr	0.57	0.86	1.08	1.56	2.13	2.58	100yr	1.84	2.53	2.65	3.49	4.48	6.30	7.95	100yr	5.58	7.64	8.80	10.80	11.86	100yr
200yr	0.64	0.96	1.21	1.76	2.45	2.97	200yr	2.12	2.90	2.95	3.89	5.01	7.07	9.71	200yr	6.26	9.34	10.18	12.56	13.71	200yr
500yr	0.75	1.12	1.44	2.08	2.96	3.59	500yr	2.56	3.51	3.42	4.49	5.83	8.21	11.89	500yr	7.26	11.43	12.33	15.30	16.57	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	0.76	1.06	1.26	1.71	2.16	2.96	3.13	1yr	2.62	3.01	3.55	4.27	4.97	1yr
2yr	0.33	0.51	0.63	0.86	1.05	1.26	2yr	0.91	1.23	1.48	1.94	2.48	3.38	3.67	2yr	2.99	3.53	4.06	4.85	5.61	2yr
5yr	0.40	0.62	0.77	1.06	1.34	1.61	5yr	1.16	1.58	1.87	2.48	3.16	4.38	4.94	5yr	3.88	4.75	5.43	6.34	7.22	5yr
10yr	0.48	0.73	0.91	1.27	1.64	1.97	10yr	1.41	1.93	2.26	3.02	3.80	5.46	6.21	10yr	4.83	5.97	6.80	7.86	8.91	10yr
25yr	0.59	0.90	1.11	1.59	2.09	2.56	25yr	1.81	2.50	2.93	3.91	4.87	7.60	8.42	25yr	6.73	8.10	9.15	10.47	11.51	25yr
50yr	0.69	1.05	1.31	1.88	2.53	3.11	50yr	2.18	3.04	3.56	4.76	5.89	9.53	10.62	50yr	8.43	10.22	11.49	13.02	14.15	50yr
100yr	0.81	1.23	1.54	2.23	3.05	3.78	100yr	2.63	3.70	4.33	5.82	7.14	11.95	13.40	100yr	10.58	12.89	14.39	16.23	17.42	100yr
200yr	0.96	1.44	1.82	2.64	3.68	4.61	200yr	3.18	4.51	5.29	7.10	8.63	15.04	16.05	200yr	13.31	15.43	18.08	20.20	21.45	200yr
500yr	1.19	1.77	2.28	3.31	4.71	5.97	500yr	4.06	5.84	6.87	9.27	11.13	20.41	21.62	500yr	18.07	20.79	24.40	27.04	28.32	500yr



REVISION HISTORY

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OWNER

**JIN ESTHER
2 TWIN POND CIRCLE
EXETER, NH**

DEVELOPER/APPLICANT

**MR. PATRICK HOUGHTON
210 LEDGEWOOD RD
MANCHESTER, NH**

SITE

**46 MAIN RESIDENTIAL
DEVELOPMENT
EXETER, NH 03833**

TAX MAP 63, LOT 1

DRAWING TITLE

**PRE-DEVELOPMENT
WATERSHED PLAN**

SCALE

1" = 20'

DATE

07/09/2024

DRAFTED BY

DRW

CHECKED BY

ERL

PROJECT MGR

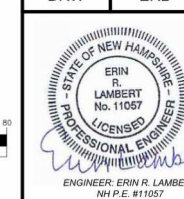
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PROJECT NO.

HOUG0001

SHEET NO.

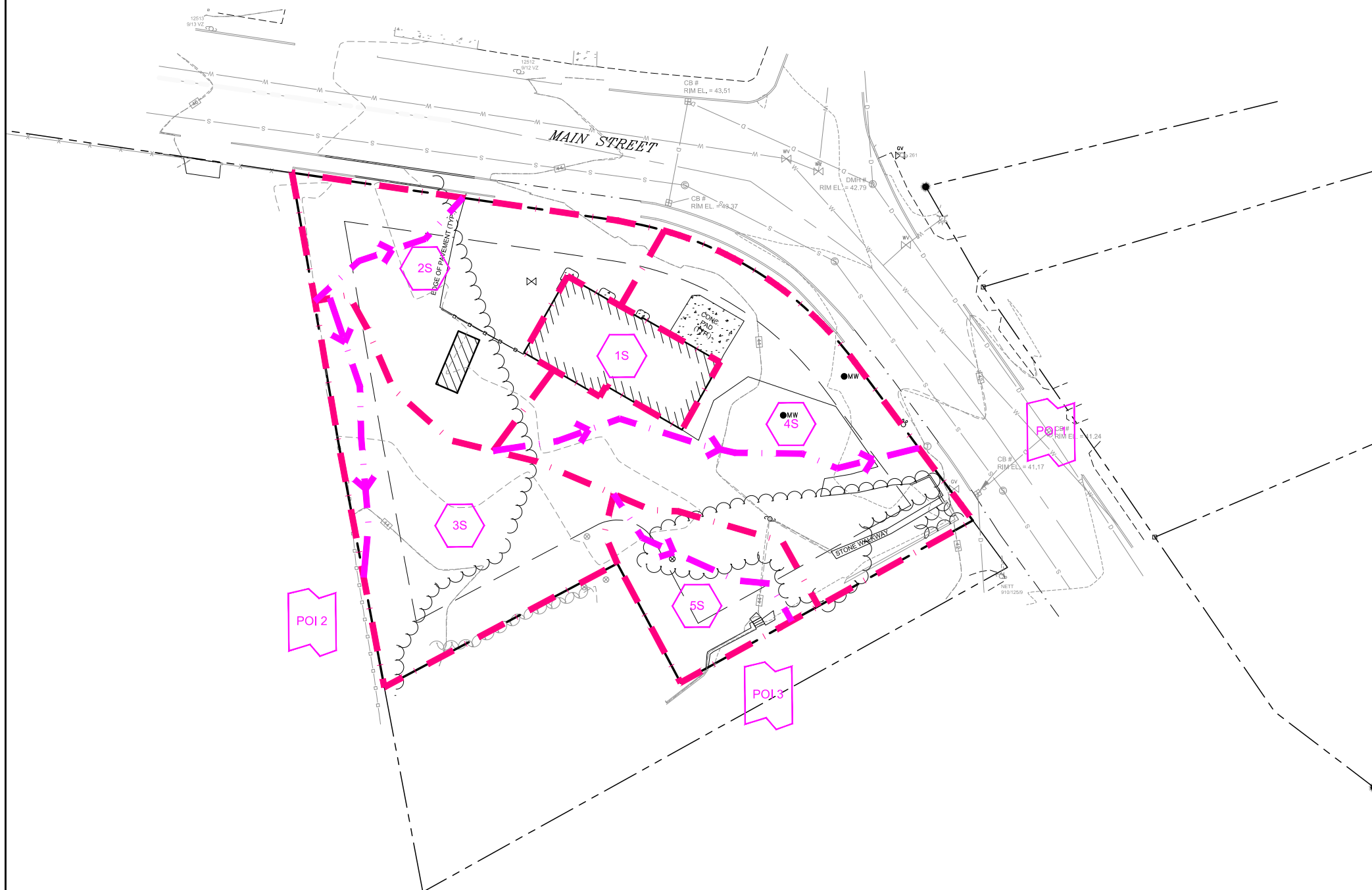
01 OF 02



SW.1

ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

01 OF 02



PLAN NOTES:

1. REFER TO SURVEYOR'S PLAN FOR BASE PLAN REFERENCES AND ADDITIONAL NOTES.
2. ALL ELEVATIONS SHOWN ARE IN REFERENCE TO THE SURVEY PLAN AND MUST BE VERIFIED BY THE GENERAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
3. CONTRACTOR SHALL NOTIFY OWNER & ENGINEER IMMEDIATELY IF SITE CONDITIONS DIFFER FROM WHAT IS SHOWN ON PLAN.
4. SPOT ELEVATIONS SHOWN AT BUILDING CORNERS ARE PROPOSED GROUND ELEVATIONS.
5. FINISH WALK AND CURB ELEVATIONS SHALL BE 6" ABOVE FINISH PAVEMENT.
6. ALL STORM DRAIN PIPING WITH LESS THAN 3.0 FEET OF COVER SHALL BE OVERLAID WITH 2" THICK RIGID INSULATION FOR THE FULL WIDTH OF PIPE TRENCH.

GRAPHIC SCALE



(IN FEET)
1 inch = 20 ft.

REVISION HISTORY

1.

ISSUED FOR

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**JIN ESTHER
2 TWIN POND CIRCLE
EXETER, NH**

DEVELOPER/APPLICANT

**MR. PATRICK HOUGHTON
210 LEDGEWOOD RD
MANCHESTER, NH**

SITE

**46 MAIN RESIDENTIAL
DEVELOPMENT
EXETER, NH 03833
TAX MAP 63, LOT 1**

DRAWING TITLE

**POST-DEVELOPMENT
WATERSHED PLAN**

SCALE

1" = 20'

DATE

07/09/2024

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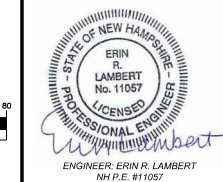
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PROJECT NO.

HOUG001

SHEET NO.



SW.2

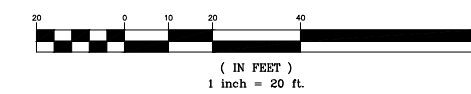
02 OF 02

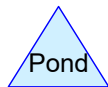
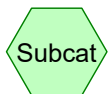
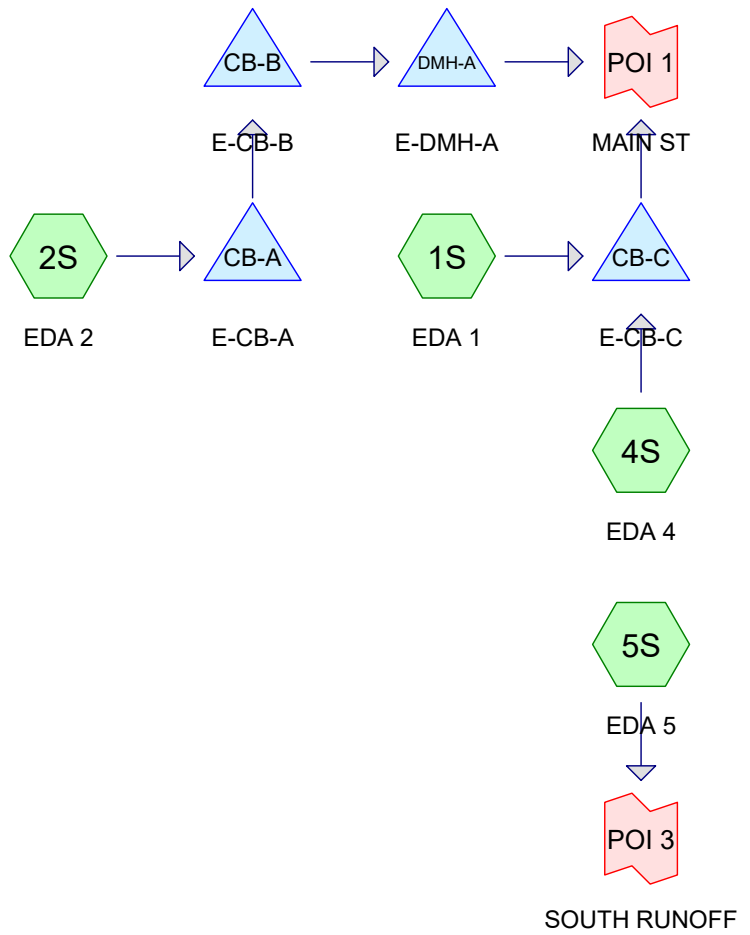
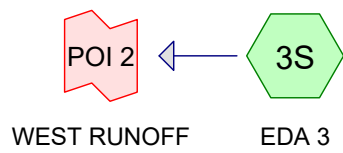


PLAN NOTES:

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GRAPHIC SCALE





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Page 2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
8,733	39	>75% Grass cover, Good, HSG A (2S, 3S, 4S, 5S)
1,734	98	BUILDING (1S)
375	98	CONCRETE (2S, 4S)
5,337	98	PAVEMENT (2S, 4S)
101	98	RETAINING WALL (4S, 5S)
158	98	STORAGE CONTAINER (2S)
9,950	30	Woods, Good, HSG A (2S, 3S, 4S, 5S)
26,388	53	TOTAL AREA

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Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
18,683	HSG A	2S, 3S, 4S, 5S
0	HSG B	
0	HSG C	
0	HSG D	
7,705	Other	1S, 2S, 4S, 5S
26,388		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
8,733	0	0	0	0	8,733	>75% Grass cover, Good	
0	0	0	0	1,734	1,734	BUILDING	
0	0	0	0	375	375	CONCRETE	
0	0	0	0	5,337	5,337	PAVEMENT	
0	0	0	0	101	101	RETAINING WALL	
0	0	0	0	158	158	STORAGE CONTAINER	
9,950	0	0	0	0	9,950	Woods, Good	
18,683	0	0	0	7,705	26,388	TOTAL AREA	

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Type III 24-hr 2-yr Rainfall=3.21"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: EDA 1	Runoff Area=1,734 sf 100.00% Impervious Runoff Depth=2.98" Tc=5.0 min CN=98 Runoff=0.13 cfs 430 cf
Subcatchment 2S: EDA 2	Runoff Area=6,433 sf 37.01% Impervious Runoff Depth=1.10" Flow Length=64' Tc=15.9 min CN=WQ Runoff=0.13 cfs 591 cf
Subcatchment 3S: EDA 3	Runoff Area=6,391 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=98' Tc=19.1 min CN=WQ Runoff=0.00 cfs 0 cf
Subcatchment 4S: EDA 4	Runoff Area=9,154 sf 38.64% Impervious Runoff Depth=1.15" Flow Length=152' Tc=10.2 min CN=WQ Runoff=0.22 cfs 878 cf
Subcatchment 5S: EDA 5	Runoff Area=2,676 sf 1.98% Impervious Runoff Depth=0.06" Flow Length=80' Tc=11.5 min CN=WQ Runoff=0.00 cfs 13 cf
Pond CB-A: E-CB-A	Inflow=0.13 cfs 591 cf Primary=0.13 cfs 591 cf
Pond CB-B: E-CB-B	Inflow=0.13 cfs 591 cf Primary=0.13 cfs 591 cf
Pond CB-C: E-CB-C	Inflow=0.33 cfs 1,308 cf Primary=0.33 cfs 1,308 cf
Pond DMH-A: E-DMH-A	Inflow=0.13 cfs 591 cf Primary=0.13 cfs 591 cf
Link POI 1: MAIN ST	Inflow=0.43 cfs 1,899 cf Primary=0.43 cfs 1,899 cf
Link POI 2: WEST RUNOFF	Inflow=0.00 cfs 0 cf Primary=0.00 cfs 0 cf
Link POI 3: SOUTH RUNOFF	Inflow=0.00 cfs 13 cf Primary=0.00 cfs 13 cf

Total Runoff Area = 26,388 sf Runoff Volume = 1,912 cf Average Runoff Depth = 0.87"
70.80% Pervious = 18,683 sf 29.20% Impervious = 7,705 sf

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Type III 24-hr 10-yr Rainfall=4.90"

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Page 1

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: EDA 1	Runoff Area=1,734 sf 100.00% Impervious Runoff Depth=4.66" Tc=5.0 min CN=98 Runoff=0.20 cfs 674 cf
Subcatchment 2S: EDA 2	Runoff Area=6,433 sf 37.01% Impervious Runoff Depth=1.74" Flow Length=64' Tc=15.9 min CN=WQ Runoff=0.20 cfs 930 cf
Subcatchment 3S: EDA 3	Runoff Area=6,391 sf 0.00% Impervious Runoff Depth=0.07" Flow Length=98' Tc=19.1 min CN=WQ Runoff=0.00 cfs 35 cf
Subcatchment 4S: EDA 4	Runoff Area=9,154 sf 38.64% Impervious Runoff Depth=1.89" Flow Length=152' Tc=10.2 min CN=WQ Runoff=0.34 cfs 1,438 cf
Subcatchment 5S: EDA 5	Runoff Area=2,676 sf 1.98% Impervious Runoff Depth=0.22" Flow Length=80' Tc=11.5 min CN=WQ Runoff=0.00 cfs 50 cf
Pond CB-A: E-CB-A	Inflow=0.20 cfs 930 cf Primary=0.20 cfs 930 cf
Pond CB-B: E-CB-B	Inflow=0.20 cfs 930 cf Primary=0.20 cfs 930 cf
Pond CB-C: E-CB-C	Inflow=0.50 cfs 2,112 cf Primary=0.50 cfs 2,112 cf
Pond DMH-A: E-DMH-A	Inflow=0.20 cfs 930 cf Primary=0.20 cfs 930 cf
Link POI 1: MAIN ST	Inflow=0.66 cfs 3,042 cf Primary=0.66 cfs 3,042 cf
Link POI 2: WEST RUNOFF	Inflow=0.00 cfs 35 cf Primary=0.00 cfs 35 cf
Link POI 3: SOUTH RUNOFF	Inflow=0.00 cfs 50 cf Primary=0.00 cfs 50 cf

Total Runoff Area = 26,388 sf Runoff Volume = 3,127 cf Average Runoff Depth = 1.42"
70.80% Pervious = 18,683 sf 29.20% Impervious = 7,705 sf

Summary for Subcatchment 1S: EDA 1

Runoff = 0.20 cfs @ 12.07 hrs, Volume= 674 cf, Depth= 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (sf)	CN	Description
* 1,734	98	BUILDING
1,734		100.00% Impervious Area

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

Summary for Subcatchment 2S: EDA 2

Runoff = 0.20 cfs @ 12.21 hrs, Volume= 930 cf, Depth= 1.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (sf)	CN	Description
* 158	98	STORAGE CONTAINER
* 2,187	98	PAVEMENT
* 36	98	CONCRETE
3,777	30	Woods, Good, HSG A
275	39	>75% Grass cover, Good, HSG A
6,433		Weighted Average
4,052		62.99% Pervious Area
2,381		37.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0140	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.78"
0.6	14	0.0070	0.42		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.9	64	Total			

Summary for Subcatchment 3S: EDA 3

Runoff = 0.00 cfs @ 13.77 hrs, Volume= 35 cf, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

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Type III 24-hr 10-yr Rainfall=4.90"

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Area (sf)	CN	Description
2,275	39	>75% Grass cover, Good, HSG A
4,116	30	Woods, Good, HSG A
6,391		Weighted Average
6,391		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	50	0.0092	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.78"
1.0	48	0.0240	0.77		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
19.1	98	Total			

Summary for Subcatchment 4S: EDA 4

Runoff = 0.34 cfs @ 12.14 hrs, Volume= 1,438 cf, Depth= 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (sf)	CN	Description
1,389	30	Woods, Good, HSG A
4,228	39	>75% Grass cover, Good, HSG A
* 3,150	98	PAVEMENT
* 339	98	CONCRETE
* 48	98	RETAINING WALL
9,154		Weighted Average
5,617		61.36% Pervious Area
3,537		38.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	11	0.0270	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.78"
5.2	39	0.0180	0.13		Sheet Flow, Grass: Short n= 0.150 P2= 2.78"
1.4	86	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.1	16	0.0440	4.26		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.2	152	Total			

Summary for Subcatchment 5S: EDA 5

Runoff = 0.00 cfs @ 12.15 hrs, Volume= 50 cf, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (sf)	CN	Description
668	30	Woods, Good, HSG A
1,955	39	>75% Grass cover, Good, HSG A
* 53	98	RETAINING WALL
2,676		Weighted Average
2,623		98.02% Pervious Area
53		1.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	22	0.0140	0.10		Sheet Flow, Grass: Short n= 0.150 P2= 2.78"
6.9	23	0.0217	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.78"
0.7	5	0.0400	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 2.78"
0.3	30	0.0570	1.67		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.5	80	Total			

Summary for Pond CB-A: E-CB-A

Inflow Area = 6,433 sf, 37.01% Impervious, Inflow Depth = 1.74" for 10-yr event
 Inflow = 0.20 cfs @ 12.21 hrs, Volume= 930 cf
 Primary = 0.20 cfs @ 12.21 hrs, Volume= 930 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB-B: E-CB-B

Inflow Area = 6,433 sf, 37.01% Impervious, Inflow Depth = 1.74" for 10-yr event
 Inflow = 0.20 cfs @ 12.21 hrs, Volume= 930 cf
 Primary = 0.20 cfs @ 12.21 hrs, Volume= 930 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB-C: E-CB-C

Inflow Area = 10,888 sf, 48.41% Impervious, Inflow Depth = 2.33" for 10-yr event
 Inflow = 0.50 cfs @ 12.11 hrs, Volume= 2,112 cf
 Primary = 0.50 cfs @ 12.11 hrs, Volume= 2,112 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond DMH-A: E-DMH-A

Inflow Area = 6,433 sf, 37.01% Impervious, Inflow Depth = 1.74" for 10-yr event
 Inflow = 0.20 cfs @ 12.21 hrs, Volume= 930 cf
 Primary = 0.20 cfs @ 12.21 hrs, Volume= 930 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 1: MAIN ST

Inflow Area = 17,321 sf, 44.18% Impervious, Inflow Depth = 2.11" for 10-yr event
Inflow = 0.66 cfs @ 12.12 hrs, Volume= 3,042 cf
Primary = 0.66 cfs @ 12.12 hrs, Volume= 3,042 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 2: WEST RUNOFF

Inflow Area = 6,391 sf, 0.00% Impervious, Inflow Depth = 0.07" for 10-yr event
Inflow = 0.00 cfs @ 13.77 hrs, Volume= 35 cf
Primary = 0.00 cfs @ 13.77 hrs, Volume= 35 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 3: SOUTH RUNOFF

Inflow Area = 2,676 sf, 1.98% Impervious, Inflow Depth = 0.22" for 10-yr event
Inflow = 0.00 cfs @ 12.15 hrs, Volume= 50 cf
Primary = 0.00 cfs @ 12.15 hrs, Volume= 50 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

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Type III 24-hr 25-yr Rainfall=6.24"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: EDA 1 Runoff Area=1,734 sf 100.00% Impervious Runoff Depth=6.00"
Tc=5.0 min CN=98 Runoff=0.25 cfs 867 cf

Subcatchment 2S: EDA 2 Runoff Area=6,433 sf 37.01% Impervious Runoff Depth=2.30"
Flow Length=64' Tc=15.9 min CN=WQ Runoff=0.25 cfs 1,234 cf

Subcatchment 3S: EDA 3 Runoff Area=6,391 sf 0.00% Impervious Runoff Depth=0.25"
Flow Length=98' Tc=19.1 min CN=WQ Runoff=0.01 cfs 132 cf

Subcatchment 4S: EDA 4 Runoff Area=9,154 sf 38.64% Impervious Runoff Depth=2.57"
Flow Length=152' Tc=10.2 min CN=WQ Runoff=0.44 cfs 1,962 cf

Subcatchment 5S: EDA 5 Runoff Area=2,676 sf 1.98% Impervious Runoff Depth=0.52"
Flow Length=80' Tc=11.5 min CN=WQ Runoff=0.01 cfs 116 cf

Pond CB-A: E-CB-A Inflow=0.25 cfs 1,234 cf
Primary=0.25 cfs 1,234 cf

Pond CB-B: E-CB-B Inflow=0.25 cfs 1,234 cf
Primary=0.25 cfs 1,234 cf

Pond CB-C: E-CB-C Inflow=0.65 cfs 2,830 cf
Primary=0.65 cfs 2,830 cf

Pond DMH-A: E-DMH-A Inflow=0.25 cfs 1,234 cf
Primary=0.25 cfs 1,234 cf

Link POI 1: MAIN ST Inflow=0.85 cfs 4,064 cf
Primary=0.85 cfs 4,064 cf

Link POI 2: WEST RUNOFF Inflow=0.01 cfs 132 cf
Primary=0.01 cfs 132 cf

Link POI 3: SOUTH RUNOFF Inflow=0.01 cfs 116 cf
Primary=0.01 cfs 116 cf

Total Runoff Area = 26,388 sf Runoff Volume = 4,312 cf Average Runoff Depth = 1.96"
70.80% Pervious = 18,683 sf 29.20% Impervious = 7,705 sf

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Type III 24-hr 50-yr Rainfall=7.49"

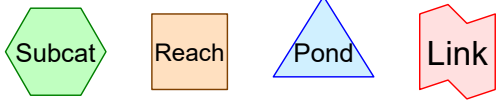
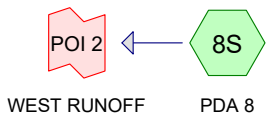
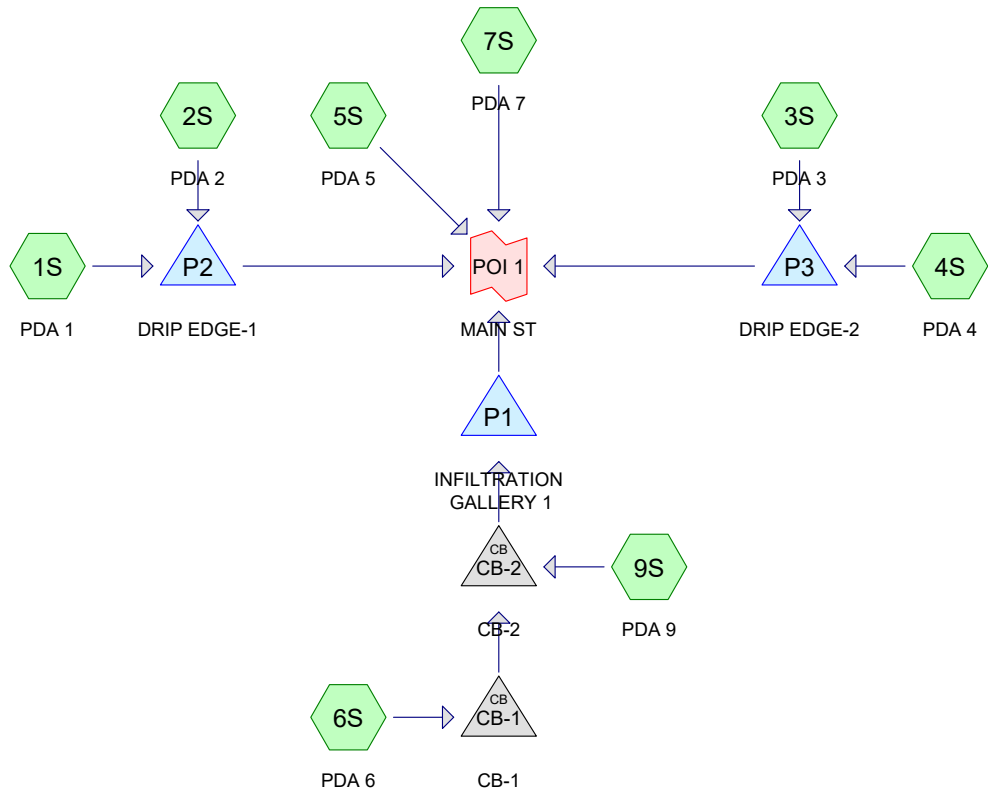
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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: EDA 1	Runoff Area=1,734 sf 100.00% Impervious Runoff Depth=7.25" Tc=5.0 min CN=98 Runoff=0.30 cfs 1,048 cf
Subcatchment 2S: EDA 2	Runoff Area=6,433 sf 37.01% Impervious Runoff Depth=2.90" Flow Length=64' Tc=15.9 min CN=WQ Runoff=0.30 cfs 1,556 cf
Subcatchment 3S: EDA 3	Runoff Area=6,391 sf 0.00% Impervious Runoff Depth=0.53" Flow Length=98' Tc=19.1 min CN=WQ Runoff=0.03 cfs 285 cf
Subcatchment 4S: EDA 4	Runoff Area=9,154 sf 38.64% Impervious Runoff Depth=3.29" Flow Length=152' Tc=10.2 min CN=WQ Runoff=0.57 cfs 2,507 cf
Subcatchment 5S: EDA 5	Runoff Area=2,676 sf 1.98% Impervious Runoff Depth=0.91" Flow Length=80' Tc=11.5 min CN=WQ Runoff=0.03 cfs 204 cf
Pond CB-A: E-CB-A	Inflow=0.30 cfs 1,556 cf Primary=0.30 cfs 1,556 cf
Pond CB-B: E-CB-B	Inflow=0.30 cfs 1,556 cf Primary=0.30 cfs 1,556 cf
Pond CB-C: E-CB-C	Inflow=0.81 cfs 3,555 cf Primary=0.81 cfs 3,555 cf
Pond DMH-A: E-DMH-A	Inflow=0.30 cfs 1,556 cf Primary=0.30 cfs 1,556 cf
Link POI 1: MAIN ST	Inflow=1.06 cfs 5,112 cf Primary=1.06 cfs 5,112 cf
Link POI 2: WEST RUNOFF	Inflow=0.03 cfs 285 cf Primary=0.03 cfs 285 cf
Link POI 3: SOUTH RUNOFF	Inflow=0.03 cfs 204 cf Primary=0.03 cfs 204 cf

Total Runoff Area = 26,388 sf Runoff Volume = 5,600 cf Average Runoff Depth = 2.55"
70.80% Pervious = 18,683 sf 29.20% Impervious = 7,705 sf



Routing Diagram for Post-development_HOUG0001
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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
12,705	39	>75% Grass cover, Good, HSG A (5S, 6S, 7S, 8S, 9S)
4,033	98	PROPOSED BUILDING (1S, 2S, 3S, 4S)
154	98	PROPOSED CURB (5S, 6S, 9S)
984	98	PROPOSED DECK (5S, 6S, 7S, 9S)
390	85	PROPOSED GRAVEL (1S, 2S, 3S, 4S)
5,586	98	PROPOSED PAVEMENT (5S, 6S, 9S)
80	98	PROPOSED RETAINING WALL (7S)
377	98	PROPOSED WALKWAY (5S, 7S)
2,079	30	Woods, Good, HSG A (8S)
26,388	64	TOTAL AREA

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Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
14,784	HSG A	5S, 6S, 7S, 8S, 9S
0	HSG B	
0	HSG C	
0	HSG D	
11,604	Other	1S, 2S, 3S, 4S, 5S, 6S, 7S, 9S
26,388		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
12,705	0	0	0	0	12,705	>75% Grass cover, Good
0	0	0	0	4,033	4,033	PROPOSED BUILDING
0	0	0	0	154	154	PROPOSED CURB
0	0	0	0	984	984	PROPOSED DECK
0	0	0	0	390	390	PROPOSED GRAVEL
0	0	0	0	5,586	5,586	PROPOSED PAVEMENT
0	0	0	0	80	80	PROPOSED RETAINING WALL
0	0	0	0	377	377	PROPOSED WALKWAY
2,079	0	0	0	0	2,079	Woods, Good
14,784	0	0	0	11,604	26,388	TOTAL AREA

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	CB-1	40.40	39.70	55.0	0.0127	0.012	12.0	0.0	0.0
2	CB-2	39.60	39.60	6.0	0.0000	0.012	12.0	0.0	0.0
3	P1	37.50	37.17	13.0	0.0254	0.012	12.0	0.0	0.0

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Type III 24-hr 2-yr Rainfall=3.21"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PDA 1	Runoff Area=1,074 sf 91.90% Impervious Runoff Depth=2.88" Tc=5.0 min CN=WQ Runoff=0.08 cfs 258 cf
Subcatchment 2S: PDA 2	Runoff Area=1,137 sf 90.50% Impervious Runoff Depth=2.86" Tc=5.0 min CN=WQ Runoff=0.08 cfs 271 cf
Subcatchment 3S: PDA 3	Runoff Area=1,094 sf 91.96% Impervious Runoff Depth=2.88" Tc=5.0 min CN=WQ Runoff=0.08 cfs 263 cf
Subcatchment 4S: PDA 4	Runoff Area=1,118 sf 90.43% Impervious Runoff Depth=2.86" Tc=5.0 min CN=WQ Runoff=0.08 cfs 267 cf
Subcatchment 5S: PDA 5	Runoff Area=1,757 sf 31.42% Impervious Runoff Depth=0.94" Tc=5.0 min CN=WQ Runoff=0.04 cfs 137 cf
Subcatchment 6S: PDA 6	Runoff Area=8,425 sf 54.67% Impervious Runoff Depth=1.63" Flow Length=126' Tc=6.4 min CN=WQ Runoff=0.32 cfs 1,143 cf
Subcatchment 7S: PDA 7	Runoff Area=4,005 sf 9.06% Impervious Runoff Depth=0.27" Tc=5.0 min CN=WQ Runoff=0.03 cfs 90 cf
Subcatchment 8S: PDA 8	Runoff Area=3,983 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=181' Tc=21.3 min CN=WQ Runoff=0.00 cfs 0 cf
Subcatchment 9S: PDA 9	Runoff Area=3,795 sf 43.74% Impervious Runoff Depth=1.30" Tc=5.0 min CN=WQ Runoff=0.12 cfs 412 cf
Pond CB-1: CB-1	Peak Elev=40.68' Inflow=0.32 cfs 1,143 cf 12.0" Round Culvert n=0.012 L=55.0' S=0.0127 '/' Outflow=0.32 cfs 1,143 cf
Pond CB-2: CB-2	Peak Elev=40.03' Inflow=0.45 cfs 1,555 cf 12.0" Round Culvert n=0.012 L=6.0' S=0.0000 '/' Outflow=0.45 cfs 1,555 cf
Pond P1: INFILTRATION GALLERY 1	Peak Elev=39.72' Storage=673 cf Inflow=0.45 cfs 1,555 cf Discarded=0.03 cfs 1,555 cf Primary=0.00 cfs 0 cf Outflow=0.03 cfs 1,555 cf
Pond P2: DRIP EDGE-1	Peak Elev=42.03' Storage=187 cf Inflow=0.16 cfs 529 cf Discarded=0.02 cfs 529 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 529 cf
Pond P3: DRIP EDGE-2	Peak Elev=41.03' Storage=187 cf Inflow=0.16 cfs 529 cf Discarded=0.02 cfs 529 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 529 cf
Link POI 1: MAIN ST	Inflow=0.07 cfs 227 cf Primary=0.07 cfs 227 cf
Link POI 2: WEST RUNOFF	Inflow=0.00 cfs 0 cf Primary=0.00 cfs 0 cf

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Type III 24-hr 2-yr Rainfall=3.21"

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Link POI 3: SOUTH RUNOFF

Primary=0.00 cfs 0 cf

**Total Runoff Area = 26,388 sf Runoff Volume = 2,840 cf Average Runoff Depth = 1.29"
57.50% Pervious = 15,174 sf 42.50% Impervious = 11,214 sf**

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Type III 24-hr 10-yr Rainfall=4.90"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PDA 1	Runoff Area=1,074 sf 91.90% Impervious Runoff Depth=4.55" Tc=5.0 min CN=WQ Runoff=0.12 cfs 407 cf
Subcatchment 2S: PDA 2	Runoff Area=1,137 sf 90.50% Impervious Runoff Depth=4.53" Tc=5.0 min CN=WQ Runoff=0.13 cfs 429 cf
Subcatchment 3S: PDA 3	Runoff Area=1,094 sf 91.96% Impervious Runoff Depth=4.55" Tc=5.0 min CN=WQ Runoff=0.12 cfs 415 cf
Subcatchment 4S: PDA 4	Runoff Area=1,118 sf 90.43% Impervious Runoff Depth=4.53" Tc=5.0 min CN=WQ Runoff=0.12 cfs 422 cf
Subcatchment 5S: PDA 5	Runoff Area=1,757 sf 31.42% Impervious Runoff Depth=1.59" Tc=5.0 min CN=WQ Runoff=0.06 cfs 233 cf
Subcatchment 6S: PDA 6	Runoff Area=8,425 sf 54.67% Impervious Runoff Depth=2.63" Flow Length=126' Tc=6.4 min CN=WQ Runoff=0.50 cfs 1,847 cf
Subcatchment 7S: PDA 7	Runoff Area=4,005 sf 9.06% Impervious Runoff Depth=0.59" Tc=5.0 min CN=WQ Runoff=0.04 cfs 196 cf
Subcatchment 8S: PDA 8	Runoff Area=3,983 sf 0.00% Impervious Runoff Depth=0.09" Flow Length=181' Tc=21.3 min CN=WQ Runoff=0.00 cfs 29 cf
Subcatchment 9S: PDA 9	Runoff Area=3,795 sf 43.74% Impervious Runoff Depth=2.14" Tc=5.0 min CN=WQ Runoff=0.19 cfs 677 cf
Pond CB-1: CB-1	Peak Elev=40.75' Inflow=0.50 cfs 1,847 cf 12.0" Round Culvert n=0.012 L=55.0' S=0.0127 '/' Outflow=0.50 cfs 1,847 cf
Pond CB-2: CB-2	Peak Elev=40.26' Inflow=0.69 cfs 2,524 cf 12.0" Round Culvert n=0.012 L=6.0' S=0.0000 '/' Outflow=0.69 cfs 2,524 cf
Pond P1: INFILTRATION GALLERY 1	Peak Elev=40.26' Storage=950 cf Inflow=0.69 cfs 2,524 cf Discarded=0.03 cfs 2,097 cf Primary=0.18 cfs 428 cf Outflow=0.20 cfs 2,525 cf
Pond P2: DRIP EDGE-1	Peak Elev=42.85' Storage=337 cf Inflow=0.25 cfs 837 cf Discarded=0.02 cfs 837 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 837 cf
Pond P3: DRIP EDGE-2	Peak Elev=41.85' Storage=337 cf Inflow=0.25 cfs 837 cf Discarded=0.02 cfs 837 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 837 cf
Link POI 1: MAIN ST	Inflow=0.21 cfs 856 cf Primary=0.21 cfs 856 cf
Link POI 2: WEST RUNOFF	Inflow=0.00 cfs 29 cf Primary=0.00 cfs 29 cf

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Type III 24-hr 10-yr Rainfall=4.90"

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Link POI 3: SOUTH RUNOFF

Primary=0.00 cfs 0 cf

Total Runoff Area = 26,388 sf Runoff Volume = 4,656 cf Average Runoff Depth = 2.12"
57.50% Pervious = 15,174 sf 42.50% Impervious = 11,214 sf

Summary for Subcatchment 1S: PDA 1

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 407 cf, Depth= 4.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (sf)	CN	Description
* 987	98	PROPOSED BUILDING
* 87	85	PROPOSED GRAVEL
1,074		Weighted Average
87		8.10% Pervious Area
987		91.90% Impervious Area

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

Summary for Subcatchment 2S: PDA 2

Runoff = 0.13 cfs @ 12.07 hrs, Volume= 429 cf, Depth= 4.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (sf)	CN	Description
* 1,029	98	PROPOSED BUILDING
* 108	85	PROPOSED GRAVEL
1,137		Weighted Average
108		9.50% Pervious Area
1,029		90.50% Impervious Area

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

Summary for Subcatchment 3S: PDA 3

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 415 cf, Depth= 4.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (sf)	CN	Description
* 1,006	98	PROPOSED BUILDING
* 88	85	PROPOSED GRAVEL
1,094		Weighted Average
88		8.04% Pervious Area
1,006		91.96% Impervious Area

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Type III 24-hr 10-yr Rainfall=4.90"

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

Summary for Subcatchment 4S: PDA 4

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 422 cf, Depth= 4.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (sf)	CN	Description
* 1,011	98	PROPOSED BUILDING
* 107	85	PROPOSED GRAVEL
1,118		Weighted Average
107		9.57% Pervious Area
1,011		90.43% Impervious Area

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

Summary for Subcatchment 5S: PDA 5

Runoff = 0.06 cfs @ 12.07 hrs, Volume= 233 cf, Depth= 1.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (sf)	CN	Description
1,205	39	>75% Grass cover, Good, HSG A
* 262	98	PROPOSED PAVEMENT
* 12	98	PROPOSED CURB
* 160	98	PROPOSED WALKWAY
* 26	98	PROPOSED WALKWAY
* 92	98	PROPOSED DECK
1,757		Weighted Average
1,205		68.58% Pervious Area
552		31.42% Impervious Area

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

Summary for Subcatchment 6S: PDA 6

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 1,847 cf, Depth= 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

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Type III 24-hr 10-yr Rainfall=4.90"

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Area (sf)	CN	Description
3,819	39	>75% Grass cover, Good, HSG A
* 4,093	98	PROPOSED PAVEMENT
* 113	98	PROPOSED CURB
* 400	98	PROPOSED DECK
8,425		Weighted Average
3,819		45.33% Pervious Area
4,606		54.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.0200	0.14		Sheet Flow, Grass: Short n= 0.150 P2= 2.78"
0.4	76	0.0210	2.94		Shallow Concentrated Flow, Paved Kv= 20.3 fps
6.4	126	Total			

Summary for Subcatchment 7S: PDA 7

Runoff = 0.04 cfs @ 12.07 hrs, Volume= 196 cf, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (sf)	CN	Description
* 120	98	PROPOSED WALKWAY
* 71	98	PROPOSED WALKWAY
* 92	98	PROPOSED DECK
3,642	39	>75% Grass cover, Good, HSG A
* 80	98	PROPOSED RETAINING WALL
4,005		Weighted Average
3,642		90.94% Pervious Area
363		9.06% Impervious Area

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

Summary for Subcatchment 8S: PDA 8

Runoff = 0.00 cfs @ 13.80 hrs, Volume= 29 cf, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

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Type III 24-hr 10-yr Rainfall=4.90"

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Area (sf)	CN	Description
1,904	39	>75% Grass cover, Good, HSG A
2,079	30	Woods, Good, HSG A
3,983		Weighted Average
3,983		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.2	50	0.0090	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.78"
3.1	131	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.3	181	Total			

Summary for Subcatchment 9S: PDA 9

Runoff = 0.19 cfs @ 12.07 hrs, Volume= 677 cf, Depth= 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.90"

Area (sf)	CN	Description
2,135	39	>75% Grass cover, Good, HSG A
* 1,231	98	PROPOSED PAVEMENT
* 29	98	PROPOSED CURB
* 400	98	PROPOSED DECK
3,795		Weighted Average
2,135		56.26% Pervious Area
1,660		43.74% Impervious Area

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

Summary for Pond CB-1: CB-1

Inflow Area = 8,425 sf, 54.67% Impervious, Inflow Depth = 2.63" for 10-yr event
 Inflow = 0.50 cfs @ 12.09 hrs, Volume= 1,847 cf
 Outflow = 0.50 cfs @ 12.09 hrs, Volume= 1,847 cf, Atten= 0%, Lag= 0.0 min
 Primary = 0.50 cfs @ 12.09 hrs, Volume= 1,847 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 40.75' @ 12.09 hrs
 Flood Elev= 43.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	40.40'	12.0" Round Culvert L= 55.0' Ke= 0.500 Inlet / Outlet Invert= 40.40' / 39.70' S= 0.0127 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.50 cfs @ 12.09 hrs HW=40.75' TW=40.14' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.50 cfs @ 2.02 fps)

Summary for Pond CB-2: CB-2

Inflow Area = 12,220 sf, 51.28% Impervious, Inflow Depth = 2.48" for 10-yr event
 Inflow = 0.69 cfs @ 12.08 hrs, Volume= 2,524 cf
 Outflow = 0.69 cfs @ 12.08 hrs, Volume= 2,524 cf, Atten= 0%, Lag= 0.0 min
 Primary = 0.69 cfs @ 12.08 hrs, Volume= 2,524 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 40.26' @ 12.41 hrs
 Flood Elev= 42.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	39.60'	12.0" Round Culvert L= 6.0' Ke= 0.500 Inlet / Outlet Invert= 39.60' / 39.60' S= 0.0000 1' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.68 cfs @ 12.08 hrs HW=40.14' TW=39.65' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 0.68 cfs @ 2.27 fps)

Summary for Pond P1: INFILTRATION GALLERY 1

Inflow Area = 12,220 sf, 51.28% Impervious, Inflow Depth = 2.48" for 10-yr event
 Inflow = 0.69 cfs @ 12.08 hrs, Volume= 2,524 cf
 Outflow = 0.20 cfs @ 12.41 hrs, Volume= 2,525 cf, Atten= 70%, Lag= 19.4 min
 Discarded = 0.03 cfs @ 12.41 hrs, Volume= 2,097 cf
 Primary = 0.18 cfs @ 12.41 hrs, Volume= 428 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 40.26' @ 12.41 hrs Surf.Area= 937 sf Storage= 950 cf
 Flood Elev= 40.90' Surf.Area= 937 sf Storage= 1,167 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 234.1 min (992.0 - 757.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	38.50'	680 cf	11.50'W x 81.52'L x 2.33'H Field A 2,187 cf Overall - 486 cf Embedded = 1,701 cf x 40.0% Voids
#2A	39.00'	486 cf	ADS_StormTech SC-310 +Cap x 33 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 33 Chambers in 3 Rows
		1,167 cf	Total Available Storage

Storage Group A created with Chamber Wizard

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Type III 24-hr 10-yr Rainfall=4.90"

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Device	Routing	Invert	Outlet Devices
#1	Discarded	38.50'	1.000 in/hr Exfiltration over Wetted area
#2	Primary	37.50'	12.0" Round Culvert L= 13.0' Ke= 0.500 Inlet / Outlet Invert= 37.50' / 37.17' S= 0.0254 ' S= 0.0254 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#3	Device 2	40.00'	6.0" Vert. Orifice/Grate C= 0.600
#4	Primary	40.60'	1.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.03 cfs @ 12.41 hrs HW=40.26' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.18 cfs @ 12.41 hrs HW=40.26' TW=0.00' (Dynamic Tailwater)

↑2=Culvert (Passes 0.18 cfs of 5.68 cfs potential flow)

↑3=Orifice/Grate (Orifice Controls 0.18 cfs @ 1.73 fps)

↑4=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond P2: DRIP EDGE-1

Inflow Area =	2,211 sf, 91.18% Impervious, Inflow Depth = 4.54" for 10-yr event
Inflow =	0.25 cfs @ 12.07 hrs, Volume= 837 cf
Outflow =	0.02 cfs @ 12.96 hrs, Volume= 837 cf, Atten= 92%, Lag= 53.6 min
Discarded =	0.02 cfs @ 12.96 hrs, Volume= 837 cf
Primary =	0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 42.85' @ 12.96 hrs Surf.Area= 456 sf Storage= 337 cf

Flood Elev= 45.00' Surf.Area= 456 sf Storage= 730 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 146.5 min (897.8 - 751.2)

Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	730 cf	4.00'W x 114.00'L x 4.00'H Prismatic 1,824 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	41.00'	1.000 in/hr Exfiltration over Wetted area
#2	Primary	45.00'	114.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.02 cfs @ 12.96 hrs HW=42.85' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.00' TW=0.00' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond P3: DRIP EDGE-2

Inflow Area = 2,212 sf, 91.18% Impervious, Inflow Depth = 4.54" for 10-yr event
 Inflow = 0.25 cfs @ 12.07 hrs, Volume= 837 cf
 Outflow = 0.02 cfs @ 12.96 hrs, Volume= 837 cf, Atten= 92%, Lag= 53.6 min
 Discarded = 0.02 cfs @ 12.96 hrs, Volume= 837 cf
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 41.85' @ 12.96 hrs Surf.Area= 456 sf Storage= 337 cf
 Flood Elev= 44.00' Surf.Area= 456 sf Storage= 730 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 146.7 min (897.9 - 751.2)

Volume	Invert	Avail.Storage	Storage Description
#1	40.00'	730 cf	4.00'W x 114.00'L x 4.00'H Prismatic 1,824 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	40.00'	1.000 in/hr Exfiltration over Wetted area
#2	Primary	44.00'	114.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.02 cfs @ 12.96 hrs HW=41.85' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=40.00' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Link POI 1: MAIN ST

Inflow Area = 22,405 sf, 50.05% Impervious, Inflow Depth = 0.46" for 10-yr event
 Inflow = 0.21 cfs @ 12.39 hrs, Volume= 856 cf
 Primary = 0.21 cfs @ 12.39 hrs, Volume= 856 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 2: WEST RUNOFF

Inflow Area = 3,983 sf, 0.00% Impervious, Inflow Depth = 0.09" for 10-yr event
 Inflow = 0.00 cfs @ 13.80 hrs, Volume= 29 cf
 Primary = 0.00 cfs @ 13.80 hrs, Volume= 29 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 3: SOUTH RUNOFF

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

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Type III 24-hr 25-yr Rainfall=6.24"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PDA 1	Runoff Area=1,074 sf 91.90% Impervious Runoff Depth=5.88" Tc=5.0 min CN=WQ Runoff=0.15 cfs 526 cf
Subcatchment 2S: PDA 2	Runoff Area=1,137 sf 90.50% Impervious Runoff Depth=5.86" Tc=5.0 min CN=WQ Runoff=0.16 cfs 555 cf
Subcatchment 3S: PDA 3	Runoff Area=1,094 sf 91.96% Impervious Runoff Depth=5.88" Tc=5.0 min CN=WQ Runoff=0.16 cfs 536 cf
Subcatchment 4S: PDA 4	Runoff Area=1,118 sf 90.43% Impervious Runoff Depth=5.86" Tc=5.0 min CN=WQ Runoff=0.16 cfs 546 cf
Subcatchment 5S: PDA 5	Runoff Area=1,757 sf 31.42% Impervious Runoff Depth=2.24" Tc=5.0 min CN=WQ Runoff=0.08 cfs 328 cf
Subcatchment 6S: PDA 6	Runoff Area=8,425 sf 54.67% Impervious Runoff Depth=3.52" Flow Length=126' Tc=6.4 min CN=WQ Runoff=0.64 cfs 2,468 cf
Subcatchment 7S: PDA 7	Runoff Area=4,005 sf 9.06% Impervious Runoff Depth=1.01" Tc=5.0 min CN=WQ Runoff=0.06 cfs 338 cf
Subcatchment 8S: PDA 8	Runoff Area=3,983 sf 0.00% Impervious Runoff Depth=0.30" Flow Length=181' Tc=21.3 min CN=WQ Runoff=0.01 cfs 99 cf
Subcatchment 9S: PDA 9	Runoff Area=3,795 sf 43.74% Impervious Runoff Depth=2.92" Tc=5.0 min CN=WQ Runoff=0.24 cfs 922 cf
Pond CB-1: CB-1	Peak Elev=40.82' Inflow=0.64 cfs 2,468 cf 12.0" Round Culvert n=0.012 L=55.0' S=0.0127 '/' Outflow=0.64 cfs 2,468 cf
Pond CB-2: CB-2	Peak Elev=40.51' Inflow=0.88 cfs 3,390 cf 12.0" Round Culvert n=0.012 L=6.0' S=0.0000 '/' Outflow=0.88 cfs 3,390 cf
Pond P1: INFILTRATION GALLERY 1	Peak Elev=40.49' Storage=1,039 cf Inflow=0.88 cfs 3,390 cf Discarded=0.03 cfs 2,329 cf Primary=0.47 cfs 1,061 cf Outflow=0.50 cfs 3,390 cf
Pond P2: DRIP EDGE-1	Peak Elev=43.55' Storage=466 cf Inflow=0.32 cfs 1,082 cf Discarded=0.02 cfs 1,082 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 1,082 cf
Pond P3: DRIP EDGE-2	Peak Elev=42.56' Storage=466 cf Inflow=0.32 cfs 1,082 cf Discarded=0.02 cfs 1,083 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 1,083 cf
Link POI 1: MAIN ST	Inflow=0.55 cfs 1,727 cf Primary=0.55 cfs 1,727 cf
Link POI 2: WEST RUNOFF	Inflow=0.01 cfs 99 cf Primary=0.01 cfs 99 cf

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Type III 24-hr 25-yr Rainfall=6.24"

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Link POI 3: SOUTH RUNOFF

Primary=0.00 cfs 0 cf

Total Runoff Area = 26,388 sf Runoff Volume = 6,320 cf Average Runoff Depth = 2.87"
57.50% Pervious = 15,174 sf 42.50% Impervious = 11,214 sf

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Type III 24-hr 50-yr Rainfall=7.49"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PDA 1	Runoff Area=1,074 sf 91.90% Impervious Runoff Depth=7.13" Tc=5.0 min CN=WQ Runoff=0.19 cfs 638 cf
Subcatchment 2S: PDA 2	Runoff Area=1,137 sf 90.50% Impervious Runoff Depth=7.11" Tc=5.0 min CN=WQ Runoff=0.20 cfs 673 cf
Subcatchment 3S: PDA 3	Runoff Area=1,094 sf 91.96% Impervious Runoff Depth=7.13" Tc=5.0 min CN=WQ Runoff=0.19 cfs 650 cf
Subcatchment 4S: PDA 4	Runoff Area=1,118 sf 90.43% Impervious Runoff Depth=7.10" Tc=5.0 min CN=WQ Runoff=0.19 cfs 662 cf
Subcatchment 5S: PDA 5	Runoff Area=1,757 sf 31.42% Impervious Runoff Depth=2.93" Tc=5.0 min CN=WQ Runoff=0.11 cfs 429 cf
Subcatchment 6S: PDA 6	Runoff Area=8,425 sf 54.67% Impervious Runoff Depth=4.40" Flow Length=126' Tc=6.4 min CN=WQ Runoff=0.81 cfs 3,086 cf
Subcatchment 7S: PDA 7	Runoff Area=4,005 sf 9.06% Impervious Runoff Depth=1.52" Tc=5.0 min CN=WQ Runoff=0.11 cfs 508 cf
Subcatchment 8S: PDA 8	Runoff Area=3,983 sf 0.00% Impervious Runoff Depth=0.61" Flow Length=181' Tc=21.3 min CN=WQ Runoff=0.02 cfs 204 cf
Subcatchment 9S: PDA 9	Runoff Area=3,795 sf 43.74% Impervious Runoff Depth=3.71" Tc=5.0 min CN=WQ Runoff=0.32 cfs 1,172 cf
Pond CB-1: CB-1	Peak Elev=41.00' Inflow=0.81 cfs 3,086 cf 12.0" Round Culvert n=0.012 L=55.0' S=0.0127 '/' Outflow=0.81 cfs 3,086 cf
Pond CB-2: CB-2	Peak Elev=40.80' Inflow=1.12 cfs 4,258 cf 12.0" Round Culvert n=0.012 L=6.0' S=0.0000 '/' Outflow=1.12 cfs 4,258 cf
Pond P1: INFILTRATION GALLERY 1	Peak Elev=40.75' Storage=1,135 cf Inflow=1.12 cfs 4,258 cf Discarded=0.03 cfs 2,512 cf Primary=0.85 cfs 1,746 cf Outflow=0.88 cfs 4,258 cf
Pond P2: DRIP EDGE-1	Peak Elev=44.23' Storage=590 cf Inflow=0.38 cfs 1,311 cf Discarded=0.03 cfs 1,311 cf Primary=0.00 cfs 0 cf Outflow=0.03 cfs 1,311 cf
Pond P3: DRIP EDGE-2	Peak Elev=43.24' Storage=590 cf Inflow=0.38 cfs 1,312 cf Discarded=0.03 cfs 1,312 cf Primary=0.00 cfs 0 cf Outflow=0.03 cfs 1,312 cf
Link POI 1: MAIN ST	Inflow=1.03 cfs 2,683 cf Primary=1.03 cfs 2,683 cf
Link POI 2: WEST RUNOFF	Inflow=0.02 cfs 204 cf Primary=0.02 cfs 204 cf

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Type III 24-hr 50-yr Rainfall=7.49"

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Link POI 3: SOUTH RUNOFF

Primary=0.00 cfs 0 cf

Total Runoff Area = 26,388 sf Runoff Volume = 8,021 cf Average Runoff Depth = 3.65"
57.50% Pervious = 15,174 sf 42.50% Impervious = 11,214 sf

4.0 INSPECTION AND MAINTENANCE MANUAL



Wilcox & Barton INC.

CIVIL • ENVIRONMENTAL • GEOTECHNICAL

INSPECTION AND MAINTENANCE MANUAL

for

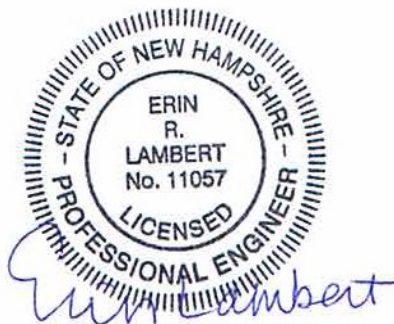
**46 Main Residential Development
46 Main Street
Exeter, NH 03833**

Prepared for:

Patrick Houghton
210 Ledgewood Rd.
Manchester, NH 03104

Prepared by:

Wilcox & Barton, Inc.
2 Home Ave.
Concord, New Hampshire 03301
Contact: Erin Lambert, PE, (603) 369-4190 x527



**Wilcox & Barton, Inc.
Project No.: HOUG0001**

August 12, 2024

INSPECTION AND MAINTENANCE PROCEDURES

RESPONSIBLE PARTIES

Inspection/Maintenance/Record Keeping:

Patrick Houghton
46 Main Residential Development
210 Ledge wood Rd.
Manchester, NH 03104
(603) 566-2000
patrickjhoughton@yahoo.com

INSPECTION SCHEDULE

Catch Basin	Each catch basin will be inspected when the system is installed and prior to directing stormwater to it. Structure inverts will be measured and documented at this time as a baseline reference for future inspections. Catch basins will be inspected every three months (minimum) and after major storm events exceeding 2.5 inches in a 24-hour period. Inspection results will be recorded using the Inspection Forms included at the end of this document.
Subsurface Infiltration Gallery	The infiltration gallery will be inspected when the system is installed and prior to directing storm water to it. The isolator row(s) will be inspected via the inspection port annually (minimum). If, upon visual inspection, it is found that sediment has accumulated, a stadia rod will be inserted to determine the depth of sediment. Inlet/outlet structures and manifolds will be inspected annually (minimum). Inspection results will be recorded using the Inspection Forms included at the end of this document.
Infiltration Trenches/Building Drip Edges	Each infiltration trench will be inspected when the system is installed and prior to directing stormwater to it. The infiltration trenches will be inspected twice annually (minimum) and after major storm events exceeding 2.5 inches in a 24-hour period. Trash and debris shall be removed at each inspection. At least once annually, the system shall be inspected for drawdown time. Inspection results will be recorded using the Inspection Forms included at the end of this document.

MAINTENANCE PROCEDURES

Catch Basins	Debris will be removed from catch basin inlet grates, and inlet/outlet pipes inside the structures. Sediment will be removed from the interior of the structures by vac truck when the depth of sediment exceeds 25% of the structure diameter. Water and sediment from cleanout procedures must be disposed of in accordance with federal, state, and local regulations at an approved off-site disposal facility, and must not be discharged into sanitary sewer systems. Maintenance will be recorded in the Inspection and Maintenance Log included at the end of this document.
Subsurface Infiltration Gallery	When the average depth of sediment in the isolator row exceeds 3 inches, clean out will be performed with the JetVac process. Trash and debris will be removed from the inlet/outlet structures when observed during inspections. Maintenance will be recorded in the Inspection and Maintenance Log included at the end of this document. If the infiltration system does not drain within 72 hours, a qualified professional shall be consulted.
Infiltration Trenches/Building Drip Edges	When the average depth of sediment in the infiltration trench exceeds half depth of trench, sediment laden material will be removed and replaced. Trash and debris will be removed from the area when observed during inspections. Maintenance will be recorded in the Inspection and Maintenance Log included at the end of this document. If dewatering times exceed 72 hours following a rainfall event, then a qualified professional shall assess the condition of the facility to determine measures required to restore filtration function.

RECORD KEEPING

Record keeping and inspection/maintenance activity will begin upon completion of all terrain activities that direct stormwater to the practices described herein. All records, including records from maintenance subcontractors, will be maintained by 46 Main Residential Development and shall be sent annually to New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain Bureau. 46 Main Residential Development will be responsible for ensuring the long-term effectiveness of the stormwater practices.

WINTER MAINTENANCE

The planned development at 46 Main Street, Exeter, NH entails building four three-story residential units across two separate structures, situated outside of all Groundwater Classification Areas. The project's goal is to efficiently manage stormwater runoff from these buildings using stone drip edges to capture and treat the runoff. Runoff from pavements and sidewalks will be channeled through drains into the existing stormwater system on Main Street.

All winter maintenance contractors shall record salt usage by vehicle for each storm and periodically compare the usage rates to confirm spreader calibrations. All winter maintenance contractors shall record storm response data, including date, air temperature, ground surface temperature, storm start

and end time, snow fall total, salt usage, application rates, application times, and plow times to be compared and analyzed by the applicators and property managers to improve and minimize salt use. The attached "Deicing and Anti-Icing Log" shall be used as a guide.

INVASIVE SPECIES MAINTENANCE

The site shall be inspected and monitored for the presence of invasive plants during maintenance activities. If invasive plants are found on-site, they will need to be controlled and removed of in a safe and effective manner. In order to determine how to effectively remove the invasive plant(s), the reproduction of that particular plant type needs to be determined. The methodology of removal and disposal shall adhere to the guidelines set forth by UNH Cooperative Extension, located in "Methods for Disposing Non-Native Invasive Plants," which is attached to this manual for reference.

Catch Basin/Drain Manhole Inspection Form

General Information	
Date of Inspection	
Inspector's Name(s)	
Inspector's Title(s)	
Type of Inspection:	<input type="checkbox"/> Routine (quarterly) <input type="checkbox"/> Post-storm event

Structure ID	Blockage?	Floatable Debris?	Visible Damage?	Depth of Buildup*	Odor?	Maintenance Required? Provide detail below
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Petroleum <input type="checkbox"/> Sewage <input type="checkbox"/> Other	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Petroleum <input type="checkbox"/> Sewage <input type="checkbox"/> Other	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Petroleum <input type="checkbox"/> Sewage <input type="checkbox"/> Other	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Petroleum <input type="checkbox"/> Sewage <input type="checkbox"/> Other	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Petroleum <input type="checkbox"/> Sewage <input type="checkbox"/> Other	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Petroleum <input type="checkbox"/> Sewage <input type="checkbox"/> Other	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Petroleum <input type="checkbox"/> Sewage <input type="checkbox"/> Other	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Petroleum <input type="checkbox"/> Sewage <input type="checkbox"/> Other	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Petroleum <input type="checkbox"/> Sewage <input type="checkbox"/> Other	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Petroleum <input type="checkbox"/> Sewage <input type="checkbox"/> Other	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Petroleum <input type="checkbox"/> Sewage <input type="checkbox"/> Other	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Petroleum <input type="checkbox"/> Sewage <input type="checkbox"/> Other	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Petroleum <input type="checkbox"/> Sewage <input type="checkbox"/> Other	<input type="checkbox"/> Yes <input type="checkbox"/> No

Corrective Action Needed and Notes

**If the depth of sediment buildup in the bottom of the structure has reached approximately 25% of the diameter of the structure, the unit requires cleaning.*

Subsurface Infiltration Gallery System Inspection Form

General Information	
Date of Inspection	
Inspector's Name(s)	
Inspector's Title(s)	
Type of Inspection:	<input type="checkbox"/> Routine (annually) <input type="checkbox"/> Other

Trash/Debris?	Visible Sediment?	Depth of Sediment Buildup*	Maintenance Required? Provide detail below
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No

Visible Damage:

Inlet

Outlet

None

Describe:

Corrective Action Needed and Notes

** If the average depth of sediment buildup exceeds 3 inches, **the unit requires cleaning.***

** If settlement, erosion, seepage, animal burrows, woody vegetation, and/or other conditions that could degrade the embankment and reduce its stability for impounding water, **immediate corrective action should be implemented.***

Infiltration Trench/Building Drip Edge Inspection Form

General Information	
Date of Inspection	
Inspector's Name(s)	
Inspector's Title(s)	
Type of Inspection:	<input type="checkbox"/> Routine (quarterly) <input type="checkbox"/> Post-storm event <input type="checkbox"/> Dewatering (Annually)

Trash/Debris?	Visible Sediment?	Depth of Sediment Buildup*	Maintenance Required? Provide detail below
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No

Visible Damage:

Inlet

Outlet

None

Describe:

Corrective Action Needed and Notes

** If the average depth of sediment buildup exceeds half the depth of the trench, **the unit requires cleaning.***

** If settlement, erosion, seepage, animal burrows, woody vegetation, and/or other conditions that could degrade the embankment and reduce its stability for impounding water, **immediate corrective action should be implemented.***

Inspection and Maintenance Log

Date:				
Performed by:				
Practice:	<u>Catch Basins/Drain Manholes</u>	<u>Infiltration Gallery</u>	<u>Infiltration Trenches</u>	<u>Other</u>
	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance
Date:				
Performed by:				
Practice:	<u>Catch Basins/Drain Manholes</u>	<u>Infiltration Gallery</u>	<u>Infiltration Trenches</u>	<u>Other</u>
	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance
Date:				
Performed by:				
Practice:	<u>Catch Basins/Drain Manholes</u>	<u>Infiltration Gallery</u>	<u>Infiltration Trenches</u>	<u>Other</u>
	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance
Date:				
Performed by:				
Practice:	<u>Catch Basins/Drain Manholes</u>	<u>Infiltration Gallery</u>	<u>Infiltration Trenches</u>	<u>Other</u>
	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance
Practice:	<u>Catch Basins/Drain Manholes</u>	<u>Infiltration Gallery</u>	<u>Infiltration Trenches</u>	<u>Other</u>
	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance	<input type="checkbox"/> Inspection <input type="checkbox"/> Maintenance

Winter Maintenance Policy Checklist for Contractors

Recommended Practice	Y	N	Comments
Develop a Winter Maintenance Policy Plan outlining procedures for the preservation of the surface facilities and stating the adopted practices for salt minimization.			
Use de-/anti-icing logs with noted application rates, material usage totals, equipment calibration record, and material specifications (brine mix ratio, ice melt manufacturer recommendations, etc.).			
Record and log site storm event data including date, air temperature, ground surface temperature, storm start and end time, and snow fall/rain fall totals.			
Record total salt usage, application rates, application times, and plow times to improve current and future salt minimization efforts on site.			
Develop Winter Maintenance Policy training program for applicators.			
Use anti-icing pretreatment where applicable prior to snowstorm events.			
Plow/shovel areas before beginning de-icing activities.			
Use wet materials. Establish pre-wetting procedures and inspection checks for quality control.			
Do not apply sodium chloride (road salt) for pavement temperatures below 15° F. If possible, wait for warmer temperatures before deicing. Consult manufacturer specifications for deicer applications below 0° F.			
Use salt for melting and only use sand for traction in hazardous areas.			
Outside storage of salt, sand, and other like winter maintenance materials shall not be permitted on the 46 Main Residential Development.			
Sweep up areas of sand application and dispose of properly.			

Checklist is adapted from UNH Technology Transfer Center's "Training Materials for Best Management Practices for Winter Road, Parking Lot, and Sidewalk Maintenance" dated January 31, 2014 in partnership with NHDES and NHDOT.

CONTROL OF INVASIVE PLANTS

During maintenance activities, check for the presence of invasive plants and remove in a safe manner as described on the following pages. They should be controlled as described on the following pages.

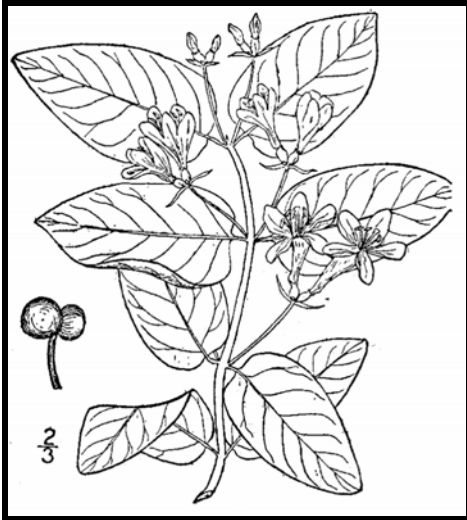
Background:

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants, seeds, packing materials, or fresh produce. Some exotic plants become invasive and cause harm by:

- becoming weedy and overgrown;
- killing established shade trees;
- obstructing pipes and drainage systems;
- forming dense beds in water;
- lowering water levels in lakes, streams, and wetlands;
- destroying natural communities;
- promoting erosion on stream banks and hillsides; and
- resisting control except by hazardous chemical.



Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle

Lonicera tatarica

USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine

the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag “head first” at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarpping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.






Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database /
Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Be diligent looking for seedlings for years in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

Woody Plants	Method of Reproducing	Methods of Disposal
Norway maple <i>(Acer platanoides)</i> European barberry <i>(Berberis vulgaris)</i> Japanese barberry <i>(Berberis thunbergii)</i> autumn olive <i>(Elaeagnus umbellata)</i> burning bush <i>(Euonymus alatus)</i> Morrow's honeysuckle <i>(Lonicera morrowii)</i> Tatarian honeysuckle <i>(Lonicera tatarica)</i> showy bush honeysuckle <i>(Lonicera x bella)</i> common buckthorn <i>(Rhamnus cathartica)</i> glossy buckthorn <i>(Frangula alnus)</i>	Fruit and Seeds 	<p>Prior to fruit/seed ripening</p> <p>Seedlings and small plants</p> <ul style="list-style-type: none"> ▪ Pull or cut and leave on site with roots exposed. No special care needed. <p>Larger plants</p> <ul style="list-style-type: none"> ▪ Use as firewood. ▪ Make a brush pile. ▪ Chip. ▪ Burn. <hr/> <p>After fruit/seed is ripe</p> <p>Don't remove from site.</p> <ul style="list-style-type: none"> ▪ Burn. ▪ Make a covered brush pile. ▪ Chip once all fruit has dropped from branches. ▪ Leave resulting chips on site and monitor.
oriental bittersweet <i>(Celastrus orbiculatus)</i> multiflora rose <i>(Rosa multiflora)</i>	Fruits, Seeds, Plant Fragments 	<p>Prior to fruit/seed ripening</p> <p>Seedlings and small plants</p> <ul style="list-style-type: none"> ▪ Pull or cut and leave on site with roots exposed. No special care needed. <p>Larger plants</p> <ul style="list-style-type: none"> ▪ Make a brush pile. ▪ Burn. <hr/> <p>After fruit/seed is ripe</p> <p>Don't remove from site.</p> <ul style="list-style-type: none"> ▪ Burn. ▪ Make a covered brush pile. ▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.

Non-Woody Plants	Method of Reproducing	Methods of Disposal
<p>garlic mustard (<i>Alliaria petiolata</i>)</p> <p>spotted knapweed (<i>Centaurea maculosa</i>)</p> <ul style="list-style-type: none"> ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. <p>black swallow-wort (<i>Cynanchum nigrum</i>)</p> <ul style="list-style-type: none"> ▪ May cause skin rash. Wear gloves and long sleeves when handling. <p>pale swallow-wort (<i>Cynanchum rossicum</i>)</p> <p>giant hogweed (<i>Heracleum mantegazzianum</i>)</p> <ul style="list-style-type: none"> ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. <p>dame's rocket (<i>Hesperis matronalis</i>)</p> <p>perennial pepperweed (<i>Lepidium latifolium</i>)</p> <p>purple loosestrife (<i>Lythrum salicaria</i>)</p> <p>Japanese stilt grass (<i>Microstegium vimineum</i>)</p> <p>mile-a-minute weed (<i>Polygonum perfoliatum</i>)</p>	<p>Fruits and Seeds</p> 	<p>Prior to flowering</p> <p>Depends on scale of infestation</p> <p>Small infestation</p> <ul style="list-style-type: none"> ▪ Pull or cut plant and leave on site with roots exposed. <p>Large infestation</p> <ul style="list-style-type: none"> ▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material. <hr/> <p>During and following flowering</p> <p>Do nothing until the following year or remove flowering heads and bag and let rot.</p> <p>Small infestation</p> <ul style="list-style-type: none"> ▪ Pull or cut plant and leave on site with roots exposed. <p>Large infestation</p> <ul style="list-style-type: none"> ▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material.
<p>common reed (<i>Phragmites australis</i>)</p> <p>Japanese knotweed (<i>Polygonum cuspidatum</i>)</p> <p>Bohemian knotweed (<i>Polygonum x bohemicum</i>)</p>	<p>Fruits, Seeds, Plant Fragments</p> <p>Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.</p>	<p>Small infestation</p> <ul style="list-style-type: none"> ▪ Bag all plant material and let rot. ▪ Never pile and use resulting material as compost. ▪ Burn. <p>Large infestation</p> <ul style="list-style-type: none"> ▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile. ▪ Monitor and remove any sprouting material. ▪ Pile, let dry, and burn.

January 2010

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5.0 POLLUTANT LOADING AND REMOVAL VOLUMES



nhdes-w-07-055
OVERALL SUMMARY

8/8/2024

Date (MM/DD/YYYY):	5/8/2024
Project Name:	46 Main Residential Development
Town/City:	Exeter
Impacted Surface Waters:	
Applicant:	Patrick Houghton
DES File #:	

TOTAL PRE -DEVELOPMENT (PRE-DEV) AREA (ACRES) =	0.61
TOTAL PRE-DEV EFFECTIVE IMPERVIOUS AREA (ACRES) =	0.18
TOTAL PRE-DEV PERCENT EFFECTIVE IMPERVIOUS (%) =	29.2%
TOTAL POST DEVELOPMENT (POST-DEV) AREA (ACRES) =	0.61
TOTAL POST-DEV EFFECTIVE IMPERVIOUS AREA (ACRES) =	0.26
TOTAL POST-DEV PERCENT EFFECTIVE IMPERVIOUS (%) =	42.5%
TOTAL POST-DEV AREA THAT IS FERTILIZED ANNUALLY (ACRES) =	0.00
TOTAL POST-DEV PERCENT OF AREA THAT IS FERTILIZED ANNUALLY (%) =	0.0%

	TSS (LBS/YR)	TP (LBS/YR)	TN (LBS/YR)
PRE DEVELOPMENT LOADS (NO BMPS)	55.6	0.4	4.1
PRE DEVELOPMENT LOADS (WITH BMPS)	55.6	0.4	4.1
PRE DEVELOPMENT LOAD REDUCTION DUE TO BMPS	0.0	0.0	0.0
PROPOSED PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	NA	0.0%	0.0%
POST DEVELOPMENT LOADS (NO BMPS)	84.2	0.7	5.4
POST DEVELOPMENT LOADS (WITH BMPS)	22.8	0.4	3.0
POST DEVELOPMENT LOAD REDUCTION DUE TO BMPS	61.4	0.3	2.4
POST DEVELOPMENT - PRE DEVELOPMENT (SHOULD BE 0 OR NEGATIVE)	-32.7	-0.1	-1.1
% DIFFERENCE FROM PRE DEVELOPMENT LOADS (SHOULD BE 0 OR NEGATIVE)	-58.9%	-14.8%	-26.6%
TOTAL REMOVAL EFFICIENCY NEEDED TO MEET PRE-DEVELOPMENT LOAD	34.0%	31.9%	23.7%

Date (MM/DD/YYYY): 5/8/2024
 Project Name: 46 Main Residential Development
 Town/City: Exeter
 Impacted Surface Waters:
 Applicant: Patrick Houghton
 DES File #:

TOTAL POST DEVELOPMENT - PRE DEVELOPMENT (SHOULD BE 0 OR NEGATIVE) (lbs/yr)	-32.7
% DIFFERENCE FROM PRE DEVELOPMENT LOADS (SHOULD BE 0 OR NEGATIVE)	-58.9%
TOTAL REMOVAL EFFICIENCY NEEDED TO MEET PRE-DEVELOPMENT LOAI	34.0%
CURRENTLY PROPOSED REMOVAL EFFICIENCY	72.9%
REMAINING REMOVAL EFFICIENCY NECESSARY TO MEET PRE-DEVELOPMENT LOAI	-38.9%

PRE-DEVELOPMENT

PRE OR POST - DEV	SUB-AREA	POINT OF ANALYSIS NUMBER	AREA (acres)	Effective Impervious Area (acres)	Area Fertilized Annually (acres)	POLLUTANT	PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	BMPS	LOAD (NO BMPS) (lbs/yr)	LOAD (WITH BMPS) (lbs/yr)	LOAD REDUCTION DUE TO BMPS (lbs/yr)	PERCENT REMOVAL
PRE	1-PRE	1S	0.04	0.04	NA	TSS	NA		3.2	3.2	0.0	0.0%
PRE	2-PRE	2S	0.15	0.05	NA	TSS	NA		17.4	17.4	0.0	0.0%
PRE	3-PRE	3S	0.15	0.00	NA	TSS	NA		4.2	4.2	0.0	0.0%
PRE	4-PRE	4S	0.21	0.08	NA	TSS	NA		27.8	27.8	0.0	0.0%
PRE	5-PRE	5S	0.06	0.00	NA	TSS	NA		2.9	2.9	0.0	0.0%
PRE	6-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	7-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	8-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	9-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	10-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	11-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	12-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	13-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	14-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	15-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	16-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	17-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	18-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	19-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	20-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	21-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	22-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	23-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	24-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	25-PRE		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
	TOTAL		0.61	0.18				TOTAL	55.6	55.6	0.0	0.0%

Date (MM/DD/YYYY): 5/8/2024
 Project Name: 46 Main Residential Development
 Town/City: Exeter
 Impacted Surface Waters:
 Applicant: Patrick Houghton
 DES File #:

TOTAL POST DEVELOPMENT - PRE DEVELOPMENT (SHOULD BE 0 OR NEGATIVE) (lbs/yr)	-32.7
% DIFFERENCE FROM PRE DEVELOPMENT LOADS (SHOULD BE 0 OR NEGATIVE)	-58.9%
TOTAL REMOVAL EFFICIENCY NEEDED TO MEET PRE-DEVELOPMENT LOAI	34.0%
CURRENTLY PROPOSED REMOVAL EFFICIENCY	72.9%
REMAINING REMOVAL EFFICIENCY NECESSARY TO MEET PRE-DEVELOPMENT LOAI	-38.9%

POST-DEVELOPMENT

PRE OR POST - DEV	SUB-AREA	POINT OF ANALYSIS NUMBER	AREA (acres)	Effective Impervious Area (acres)	Area Fertilized Annually (acres)	POLLUTANT	PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	BMPS	LOAD (NO BMPS) (lbs/yr)	LOAD (WITH BMPS) (lbs/yr)	LOAD REDUCTION DUE TO BMPS (lbs/yr)	PERCENT REMOVAL
POST	1-POST	1S	0.03	0.02	0.00	TSS	NA	DRIP EDGE	4.0	0.4	3.6	90.0%
POST	2-POST	2S	0.03	0.02	0.00	TSS	NA	DRIP EDGE	4.2	0.4	3.8	90.0%
POST	3-POST	3S	0.03	0.02	0.00	TSS	NA	DRIP EDGE	4.0	0.4	3.6	90.0%
POST	4-POST	4S	0.03	0.02	0.00	TSS	NA	DRIP EDGE	4.1	0.4	3.7	90.0%
POST	5-POST	5S	0.04	0.01	0.00	TSS	NA		5.5	5.5	0.0	0.0%
POST	6-POST	6S	0.19	0.11	0.00	TSS	NA	INFILTRATION GALLERY	34.9	3.5	31.4	90.0%
POST	7-POST	7S	0.09	0.01	0.00	TSS	NA		7.7	7.7	0.0	0.0%
POST	8-POST	8S	0.09	0.00	0.00	TSS	NA		2.8	2.8	0.0	0.0%
POST	9-POST	9S	0.09	0.04	0.00	TSS	NA	INFILTRATION GALLERY	17.1	1.7	15.4	90.0%
POST	10-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	11-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	12-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	13-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	14-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	15-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	16-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	17-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	18-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	19-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	20-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	21-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	22-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	23-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	24-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	25-POST		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
	TOTAL		0.61	0.26	0.00			TOTAL	84.2	22.8	61.4	72.9%

Date (MM/DD/YYYY): 5/8/2024
 Project Name: 46 Main Residential Development
 Town/City: Exeter
 Impacted Surface Waters:
 Applicant: Patrick Houghton
 DES File #:

TOTAL POST DEVELOPMENT - PRE DEVELOPMENT (SHOULD BE 0 OR NEGATIVE) (lbs/yr)	-0.1
% DIFFERENCE FROM PRE DEVELOPMENT LOADS (SHOULD BE 0 OR NEGATIVE)	-14.8%
TOTAL REMOVAL EFFICIENCY NEEDED TO MEET PRE-DEVELOPMENT LOAI	31.9%
CURRENTLY PROPOSED REMOVAL EFFICIENCY	42.0%
REMAINING REMOVAL EFFICIENCY NECESSARY TO MEET PRE-DEVELOPMENT LOAI	-10.1%

PRE-DEVELOPMENT

PRE OR POST - DEV	SUB-AREA	POINT OF ANALYSIS NUMBER	AREA (acres)	Effective Impervious Area (acres)	Area Fertilized Annually (acres)	POLLUTANT	PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	BMPS	LOAD (NO BMPS) (lbs/yr)	LOAD (WITH BMPS) (lbs/yr)	LOAD REDUCTION DUE TO BMPS (lbs/yr)	PERCENT REMOVAL
PRE	1-PRE	1S	0.04	0.04	NA	TP	NA		0.1	0.1	0.0	0.0%
PRE	2-PRE	2S	0.15	0.05	NA	TP	NA		0.1	0.1	0.0	0.0%
PRE	3-PRE	3S	0.15	0.00	NA	TP	NA		0.1	0.1	0.0	0.0%
PRE	4-PRE	4S	0.21	0.08	NA	TP	NA		0.2	0.2	0.0	0.0%
PRE	5-PRE	5S	0.06	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	6-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	7-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	8-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	9-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	10-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	11-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	12-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	13-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	14-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	15-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	16-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	17-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	18-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	19-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	20-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	21-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	22-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	23-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	24-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	25-PRE		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
	TOTAL		0.61	0.18				TOTAL	0.4	0.4	0.0	0.0%

Date (MM/DD/YYYY): 5/8/2024
 Project Name: 46 Main Residential Development
 Town/City: Exeter
 Impacted Surface Waters:
 Applicant: Patrick Houghton
 DES File #:

POST-DEVELOPMENT

PRE OR POST - DEV	SUB-AREA	POINT OF ANALYSIS NUMBER	AREA (acres)	Effective Impervious Area (acres)	Area Fertilized Annually (acres)	POLLUTANT	PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	BMPS	LOAD (NO BMPS) (lbs/yr)	LOAD (WITH BMPS) (lbs/yr)	LOAD REDUCTION DUE TO BMPS (lbs/yr)	PERCENT REMOVAL
POST	1-POST	1S	0.03	0.02	0.00	TP	0.0%	DRIP EDGE	0.0	0.0	0.0	60.0%
POST	2-POST	2S	0.03	0.02	0.00	TP	0.0%	DRIP EDGE	0.0	0.0	0.0	60.0%
POST	3-POST	3S	0.03	0.02	0.00	TP	0.0%	DRIP EDGE	0.0	0.0	0.0	60.0%
POST	4-POST	4S	0.03	0.02	0.00	TP	0.0%	DRIP EDGE	0.0	0.0	0.0	60.0%
POST	5-POST	5S	0.04	0.01	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	6-POST	6S	0.19	0.11	0.00	TP	0.0%	INFILTRATION GALLERY	0.2	0.1	0.1	60.0%
POST	7-POST	7S	0.09	0.01	0.00	TP	0.0%		0.1	0.1	0.0	0.0%
POST	8-POST	8S	0.09	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	9-POST	9S	0.09	0.04	0.00	TP	0.0%	INFILTRATION GALLERY	0.1	0.0	0.1	60.0%
POST	10-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	11-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	12-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	13-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	14-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	15-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	16-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	17-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	18-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	19-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	20-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	21-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	22-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	23-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	24-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
POST	25-POST		0.00	0.00	0.00	TP	0.0%		0.0	0.0	0.0	0.0%
	TOTAL		0.61	0.26	0.00			TOTAL	0.7	0.4	0.3	42.0%

Date (MM/DD/YYYY): 5/8/2024
 Project Name: 46 Main Residential Development
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TOTAL POST DEVELOPMENT - PRE DEVELOPMENT (SHOULD BE 0 OR NEGATIVE) (lbs/yr)	-1.1
% DIFFERENCE FROM PRE DEVELOPMENT LOADS (SHOULD BE 0 OR NEGATIVE)	-26.6%
TOTAL REMOVAL EFFICIENCY NEEDED TO MEET PRE-DEVELOPMENT LOAI	23.7%
CURRENTLY PROPOSED REMOVAL EFFICIENCY	44.0%
REMAINING REMOVAL EFFICIENCY NECESSARY TO MEET PRE-DEVELOPMENT LOAI	-20.3%

PRE-DEVELOPMENT

PRE OR POST - DEV	SUB-AREA	POINT OF ANALYSIS NUMBER	AREA (acres)	Effective Impervious Area (acres)	Area Fertilized Annually (acres)	POLLUTANT	PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	BMPS	LOAD (NO BMPS) (lbs/yr)	LOAD (WITH BMPS) (lbs/yr)	LOAD REDUCTION DUE TO BMPS (lbs/yr)	PERCENT REMOVAL
PRE	1-PRE	1S	0.04	0.04	NA	TN	NA		0.8	0.8	0.0	0.0%
PRE	2-PRE	2S	0.15	0.05	NA	TN	NA		1.0	1.0	0.0	0.0%
PRE	3-PRE	3S	0.15	0.00	NA	TN	NA		0.3	0.3	0.0	0.0%
PRE	4-PRE	4S	0.21	0.08	NA	TN	NA		1.8	1.8	0.0	0.0%
PRE	5-PRE	5S	0.06	0.00	NA	TN	NA		0.2	0.2	0.0	0.0%
PRE	6-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	7-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	8-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	9-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	10-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	11-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	12-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	13-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	14-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	15-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	16-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	17-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	18-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	19-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	20-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	21-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	22-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	23-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	24-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	25-PRE		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
	TOTAL		0.61	0.18				TOTAL	4.1	4.1	0.0	0.0%

Date (MM/DD/YYYY): 5/8/2024
 Project Name: 46 Main Residential Development
 Town/City: Exeter
 Impacted Surface Waters:
 Applicant: Patrick Houghton
 DES File #:

POST-DEVELOPMENT

PRE OR POST - DEV	SUB-AREA	POINT OF ANALYSIS NUMBER	AREA (acres)	Effective Impervious Area (acres)	Area Fertilized Annually (acres)	POLLUTANT	PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	BMPS	LOAD (NO BMPS) (lbs/yr)	LOAD (WITH BMPS) (lbs/yr)	LOAD REDUCTION DUE TO BMPS (lbs/yr)	PERCENT REMOVAL
POST	1-POST	1S	0.03	0.02	0.00	TN	0.0%	DRIP EDGE	0.3	0.1	0.2	55.0%
POST	2-POST	2S	0.03	0.02	0.00	TN	0.0%	DRIP EDGE	0.3	0.1	0.2	55.0%
POST	3-POST	3S	0.03	0.02	0.00	TN	0.0%	DRIP EDGE	0.3	0.1	0.2	55.0%
POST	4-POST	4S	0.03	0.02	0.00	TN	0.0%	DRIP EDGE	0.3	0.1	0.2	55.0%
POST	5-POST	5S	0.04	0.01	0.00	TN	0.0%		0.3	0.3	0.0	0.0%
POST	6-POST	6S	0.19	0.11	0.00	TN	0.0%	INFILTRATION GALLERY	2.2	1.0	1.2	55.0%
POST	7-POST	7S	0.09	0.01	0.00	TN	0.0%		0.5	0.5	0.0	0.0%
POST	8-POST	8S	0.09	0.00	0.00	TN	0.0%		0.2	0.2	0.0	0.0%
POST	9-POST	9S	0.09	0.04	0.00	TN	0.0%	INFILTRATION GALLERY	0.9	0.4	0.5	55.0%
POST	10-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	11-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	12-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	13-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	14-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	15-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	16-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	17-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	18-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	19-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	20-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	21-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	22-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	23-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	24-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
POST	25-POST		0.00	0.00	0.00	TN	0.0%		0.0	0.0	0.0	0.0%
	TOTAL		0.61	0.26	0.00			TOTAL	5.4	3.0	2.4	44.0%